

**HISTORY OF**  
**ADM (ARCHER DANIELS MIDLAND CO.)**  
**AND THE ANDREAS FAMILY'S**  
**WORK WITH SOYBEANS AND SOYFOODS**  
**(1884-2020):**

**EXTENSIVELY ANNOTATED**  
**BIBLIOGRAPHY AND SOURCEBOOK**



Archer Daniels Midland Company



Compiled

by

**William Shurtleff & Akiko Aoyagi**



**2020**

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 Chronology of ADM's Work with Soy  
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 Chronology of ADM and Soybeans

Timeline of ADM  
 Timeline of ADM's Work with Soy  
 Timeline of ADM's Work with Soybeans  
 Timeline of ADM and Soy  
 Timeline of ADM and Soybeans

Biography of Dwayne Andreas  
 Biography of Lowell Andreas  
 History of the Andreas family  
 History of the Andreas family's work with soy

History of Archer Daniels Midland Company  
 History of Archer Daniels Midland Company's Work with Soy  
 History of Archer Daniels Midland Company's Work with Soybeans  
 History of Archer Daniels Midland Co.  
 History of Archer Daniels Midland Co.' Work with Soyfoods  
 History of Archer Daniels Midland Co's Work with Soy Ingredients

# Contents

	Page
<b>Dedication and Acknowledgments</b> .....	4
<b>Introduction and Brief Chronology, by William Shurtleff</b> .....	5
<b>About This Book</b> .....	12
<b>Abbreviations Used in This Book</b> .....	13
<b>How to Make the Best Use of This Digital Book - Three Keys</b> .....	14
<b>Full-Page Graphics</b> .....	16-18
<b>Andreas Family Genealogies</b> .....	19-33
<b>Introducing Soyinfo Center</b> .....	34
<b>History of ADM (Archer Daniels Midland Co.) and the Andreas Family's Work with Soybeans and Soyfoods: 2158 References in Chronological Order</b> .....	35
<b>Contains 189 Photographs and Illustrations</b>	
<b>Subject/Geographical Index by Record Numbers</b> .....	936
<b>Last Page of Index</b> .....	1005

## DEDICATION AND ACKNOWLEDGMENTS

**This book is dedicated to ADM (Archer Daniels Midland Co.) and to Dwayne O. Andreas.**

Part of the enjoyment of writing a book lies in meeting people from around the world who share a common interest, and in learning from them what is often the knowledge or skills acquired during a lifetime of devoted research or practice. We wish to give deepest thanks...

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This book, no doubt and alas, has its share of errors. These, of course, are solely the responsibility of William Shurtleff.

■ This bibliography and sourcebook was written with the hope that someone will write a detailed and well-documented history of this subject.

# INTRODUCTION

## Brief Chronology/Timeline of ADM

**1884** – George A. Archer (who was born in 1850 in Dayton, Ohio, and worked in Dayton as a partner for 10 years in the linseed firm headed by his father), decides in 1884 to move west to Yankton, South Dakota, to be nearer the source of flaxseed. In 1884 he opens his own linseed factory in Yankton, and founds Archer & Co. In 1889 Mr. Archer moves his business to Minneapolis, Minnesota, and sells the factory to American Linseed Co. (*Minneapolis Star Tribune*, 1932. Nov. 13, p. 1, 6).

**1900 Sept. 26** – “Midland Linseed Oil company of Minneapolis, having a capital stock of \$400,000, has filed articles of incorporation with the secretary of state. The work of the company will be the manufacturing of linseed oil and other products of flax seed, the buying, selling and shipping of flax seed and its products.” (*Mower County Transcript* {Lansing, Michigan}, p. 8). It “will compete with the American Linseed Company, the trust” (*Chicago Tribune*. 1900. Oct. 2, p. 9).

**1902** – ADM dates its founding from this year – in many anniversary documents in later years. It was in 1902 that the Archer-Daniels Linseed Co. was organized and started operations at Minneapolis (*Decatur Herald*, 1939 Dec. 31; *Soybean Digest*. 1952, Nov. p. 22; Dick Wallace, 1981, Sept. 11. Personal communication; *Inform*. 2003. Sept. (“ADM celebrates 101 years”); History of ADM. 2016 & 2020 (on ADM website); Wikipedia ADM (retrieved 2020 July 22).

**1904** – Mr. Archer joins with John W. Daniels to organize the Archer-Daniels Co. On 7 Feb. 1905 it was voted to take the necessary steps toward changing the firm’s name to the Archer-Daniels Linseed Company. George A. Archer, who owned 50% of the company, was president. “When the Archer-Daniels Linseed Company was formed in 1905, John W. Daniels was 47 years old and George A. Archer was 55” (Marion Cross. 1954, p. 23-25).

**1911 June 29** – The Midland Linseed Oil Co., Minneapolis, plans to build a linseed oil mill on the water front of the Jersey side of the Hudson River. E.C. Warner is president of the company. The mill, which will contain 48 presses, is expected to cost about \$650,000. The new mill points to increased imports of flaxseed in the future (*Wall Street Journal*, p. 5).

**1911 Aug. 29** – Midland Linseed Oil company is renamed Midland Linseed Oil **Products** company as its capitalization

is increased to \$5,000,000 by E.C. Warner, Walter D. Douglas, George F. Piper, and Arthur L. Bisbee (*Oshkosh Northwestern* {Wisconsin}, p. 9; *Chicago Tribune*, p. 12).

**1918 March 4** – Dwayne Orville Andreas is born in Worthington, Nobles County, Minnesota, the 5<sup>th</sup> child (and 4<sup>th</sup> son) of Reuben Peter Andreas and Lydia Barbara Stoltz. The family lived a simple Mennonite life. The children were raised with something akin to Mennonite discipline – no movies, no Sunday papers, no ball games on Sundays, a surfeit of religious devotions, and unending hard work.

**1920 July 7** – The U.S. Department of Justice files a suit under the Sherman anti-trust law alleging price fixing of linseed oil against the linseed oil trust – all the big flaxseed oil crushers. The Justice Department assails the industry’s “open price plan” (*New York Times*, p. 23).

**1923 May 22** – The Archer-Daniels-Midland Company is organized to take over the plants of Midland and the assets of Archer-Daniels Linseed Company and the Midland Linseed Products Company. The new corporation, with total assets exceeding \$11,000,000, incorporated in Delaware, will control about 35% of the linseed mill capacity in the United States (*Wausau Daily Herald* {Wausau, Wisconsin}, p. 10); \$5,000,000 is expected to be raised in a major public stock offering (*Star Tribune*, April 24 {Minneapolis, Minnesota}, p. 22; *Cincinnati Enquirer*, April 24, p. 14).

It will become world’s largest producer of linseed oil. Its nine mills contain a total of 334 flaxseed presses. After the merger, the other two largest flaxseed crushers in America were Spencer Kellogg and Sons, Inc., of Buffalo, and the American Linseed Company, owned by Rockefeller interests. (Marion Cross. 1954. p. 34-37, p. 39).

“New York, July 10 [1923] – The Archer-Daniels-Midland Co. has declared an initial dividend of \$0.75 on the preferred stock, payable August 1 to holders of record July 20.”

The new corporation soon has two listings on the New York Curb Exchange: “Archer Dan Midland” sells for about 39. “Archer Dan Mid pfd” [preferred] sells for about 98.

Note: In 1953 The New York Curb Exchange changed its name to the American Stock Exchange (AMEX).

**1924 Feb. 24** – Lowell Willard Andreas is born in Lisbon, Linn County, Iowa, the 6<sup>th</sup> and youngest child of Reuben Peter Andreas and Lydia Barbara Stoltz. He was about 2 years younger than Dwayne.

**1927** – Reuben Andreas, Dwayne’s father, enters the grain

business when he takes over a bankrupt grain, coal and seed business – with a mortgage from the Lisbon National Bank. Dwayne is about age 10.

**1928** – ADM acquires the Toledo Seed & Oil Co. On March 11, 1929, the company announces that it will enlarge its plant to make soy bean oil (*Wall Street Journal*. 1929. March 11, p. 5).

**1928** – ADM acquires the William O. Goodrich Co. located in Milwaukee, Wisconsin (Dick Wallace. 1981. Sept. 11. Personal communication)

**1929** – During this year “ADM took two more extremely significant steps toward diversifying its manufacturing activities. Converting the Toledo [Ohio] and Chicago plants to the crushing of soybeans did not seem momentous at the time because the United States was just becoming aware of the potential value of the soybean.” A photo (facing p. 40) shows the ADM soybean processing plant in Chicago, Illinois (Marion Cross. 1954. p. 40; *Wall Street Journal*. 1929, March 11, p. 5).

**1934 March** – ADM begins operating the first large-scale continuous solvent extraction plant in the USA in Chicago, Illinois. The plant used a “Hildebrandt” extractor to process 100 tons/day of soybeans. The solvent was petroleum naphtha of the hexane type. This ADM plant represented a “turning point and marked the beginning of the large scale edible oil extraction industry as it is known today.” Installations of other large-capacity continuous solvent extraction plants followed in rapid succession: 1934 Nov. – The Glidden Company, Chicago, Illinois. 1937 Nov. – The Central Soya Co., Decatur, Indiana. 1938 Oct. – Honeymead Products Co., Cedar Rapids, Iowa (*Oil Mill Gazetteer*. 1947. Aug. p. 17-21, 35-43).

**1934 June** – ADM starts making food grade lecithin (Dick Wallace. 1981. Sept. 11. Personal communication).

**1935** – James W. Hayward, PhD, becomes director of the new department of nutritional research of the soybean division of Archer-Daniels-Midland Co. at Milwaukee, Wisconsin. He went to ADM immediately after earning his PhD degree in animal nutrition from the University of Wisconsin. He is known worldwide as a leading authority on the use of soybean oil meal in livestock feed (*Soybean Digest*. 1951. Sept., p. 22).

**1935 fall** – After graduating from high school in only 3 years, Dwayne enrolls in Wheaton College, Illinois. His mother hoped that he would be a minister. But he dropped out near the end of his 2<sup>nd</sup> year, thus ending his formal education. Later that year he married Bertha Benedict (whom

he met at Wheaton) in St Lucie County, Florida; he was age 18 and she was 21. They had two children: (1) Terry Lynn Andreas, born about 1943 – place unknown; (2) Sandra Ann Andreas – date and place of birth unknown. On 9 July 1967 Sandra married William G. McMurtie in Washington, D.C. In 1981 she first traveled to India and became Mother Teresa’s faithful acolyte.

**1935** – ADM starts making whole (full-fat) soy flour (Dick Wallace. 1981. Sept. 11. Personal communication).

**1937** – Dwayne Andreas enters the family business.

**1938** – Dwayne Andreas is sent to the Staley Company in Decatur, Illinois, to buy a year’s supply of soybean meal. After completing the deal, Mr. Staley, who was about 80 years old, invited him out to lunch. Mr. Staley said, “Young man, it’s foolish for you to come down here to buy soybean meal. You should build your own plant in Iowa.” Dwayne said, “Mr. Staley, I don’t have that kind of money.” He replied, “Go to Allis-Chalmers (the equipment manufacturer) in Milwaukee and they’ll send you a soybean plant 5% down. Give them my name as a reference.”

Three days later Dwayne started to build a soybean processing plant in Cedar Rapids, Iowa (*Herald and Review* {Decatur, Illinois}. 1999. March 7, p. 55).

**1939 Sept.** – ADM starts to operate its massive soybean crushing plant in Decatur, Illinois (*Decatur Herald*. Jan. 11, p. 1; *Proceedings of the American Soybean Association*. [Sept.] p. 9).

**1939 Sept.** – ADM is now making “soybean pellets” (*Proceedings of the American Soybean Association*. p. 9).

**1939** – The Andreas family opens Honeymead Products Co. Inc. in Cedar Rapids, Iowa (*Herald & Review*. 1999. March 7, p. 1).

**1940 Sept. 28** – The Federal Trade Commission charges the American Lecithin Co., ADM, and several others with “restraint of trade” in the field of lecithin. Thus, ADM is making lecithin by this time (*Minneapolis Star* {Minnesota}, p. 15). On 20 May 1941 it ordered the group to cease and desist (*Federal Register*, p. 2478-80).

**1942** – Cargill Purchases the Iowa Milling Co. The grain milling plant at 411 Sixth Street NE caught fire in October 1944. Lawrence Hoskins, manager of the plant, said there were no [soy] beans or oil in the mill or in the huge concrete storage tanks. Old stock was gone and the new bean crop had not yet come in, but the facility was gutted...

**1945 June 1** – Cargill buys the Honeymead soybean crushing plant in Cedar Rapids, Iowa for an estimated \$2.5 million. This feed and soybean processing plant is situated at 850 Tenth street SW. Dwayne O. Andreas has resigned as vice-president of Honeymead and will become general manager of the Cedar Rapids operations of Cargill. Cargill's new plant in west Cedar Rapids has about 100 employees. The plant has a daily soybean processing capacity of 4,300 bushels, manufactures 200 tons of feed daily and has a bulk grain storage capacity of 700,000 bushels. The Honeymead company will retain its main office here and continue operation of feed and soybean processing plants at Spencer and Washington, Iowa.

**1945** – Honeymead earns \$150,000 a year after taxes, with Dwayne largely running the family business. Sold out to Cargill, Inc. when Dwayne thought he was going to have to serve in the Army. Dwayne has a net worth of \$2.5 million at age 27 (*Herald & Review*. 1999. March 7, p. 1).

**1945-1952** – Dwayne Andreas is vice president of Cargill. He has grown up running soybean crushing plants with his father and brother in Cedar Rapids, Iowa, In 1945 he becomes associated with Cargill, Inc. at its headquarters in Minneapolis. That same year he was elected assistant vice president, and in 1946 a vice president. He was hired by Cargill to develop its vegetable oil processing and refining division to include flaxseed processing (Whitney Eastman. 1968, p. 53-54).

**1946 March** – ADM is now using the tagline “Creating new values from America’s harvests” (*Soybean Digest*. p. 34).

**1949 Oct. 31** – The ticker tape symbol of the Archer-Daniels-Midland Co., on the New York Stock Exchange, was changed to “ADM” from “ADD” (*Barron's National Business and Financial Weekly*, p. 11).

**1951** – “Chemurgy is success factor at A-D-M.” “Archer-Daniels-Midland Company has emerged as the nation’s largest producer of vegetable oils, and as one of the world’s largest processors of farm-crops. Directly this growth can be traced to the application of the principles of Chemurgy, for the company has held fast to its slogan, ‘creating new values from America’s harvests through chemical research.’”

In the company’s 149-year history, it has never finished a year in the red, “and hasn’t skipped a dividend since 1927. As of June 30, 1950, the company was a \$250,000,000 a year business with no bank loans, bonds, notes, or preferred stock, and a net worth of \$80,000,000.” During the last 5 years alone, over \$30 million has been invested in new plants, including a “modern soybean solvent extraction plant that began operating in Mankato, Minnesota, crushing soybeans in Oct. 1950” (*Chemurgic Digest*. 1951. Feb., p. 4).

**1953-1960** – Dwayne Andreas is Honeymead’s executive and chief shareholder.

**1952** – Dwayne Andreas “retires” from Cargill to be able to devote more attention to Honeymead Products Company, a rapidly expanding business owned by Dwayne and his brother, Lowell. For a while, Honeymead was operating [in Mankato, Minnesota] one of the largest soybean processing plants in the USA – or the world. In 1960 the Andreas brothers sold the Honeymead plant to Farmers Union Grain Terminal Association (GTA) – a farmers’ cooperative (Whitney Eastman. 1968, p. 53-54).

**1956** – Dr. James W. Hayward retires as Director of Nutritional Research for ADM when the position of Director of Nutrition was created for him. He worked in this position until the late 1950s. In the early 1960s he worked as a consultant for ADM (Dick Wallace. 1981. Sept. 11. Personal communication).

**1957 July 1** – ADM acquires a soy protein isolate plant from The Drackett Co. William Atkinson goes to ADM as part of the deal. At ADM Atkinson invents TVP – a registered trademark that stands for textured vegetable protein. That plant, located in Evendale [near Cincinnati] Ohio, made only industrial (not edible) soy protein isolates (Dick Wallace. 1981. Sept. 11. Personal communication).

**1960** – Dwayne & Lowell Andreas organize Interoceanic Industries, Inc. – later renamed First Interoceanic Corporation – to act as a family investment corporation for their far-flung activities (Eastman 1968).

**1960-1966** – Dwayne Andreas is executive vice president of Farmers Union Grain Terminal Association, a cooperative.

**1960 abt.** – ADM introduces Adpro 410: A low viscosity, readily soluble isolated soy protein for industrial use (undated brochure).

**1962 April** – Archer Daniels Midland Co. introduces a new trademark and decides to consistently call itself “ADM” (*Soybean Digest*, p. 27).

**1965** – This year’s annual report shows that ADM has had decreases in net income (profit) for four years in a row – from \$4.421 million in 1962 to \$2.765 million in 1965. It’s time to make some big changes. To his great credit, Shreve “Bud” Archer, Jr. of ADM offered to sell Dwayne and Lowell Andreas a block of ADM stock – 100,000 shares at about half its book value, for a total of \$3.3 million – which amounted to effective control of the company, if they would agree to come in and run it – a company that was in decline,

had too many workers and was very poorly managed. Dwayne and Lowell saw ADM as a company with great potential if they could turn it around. (*Wall Street Journal*. 1972. Jan. 18. p. 26; Lowell Andreas. 2003. Personal communication).

**1965** – British Arkady first produces TVP for ADM (Dick Wallace. 1981. Sept. 11. Personal communication; W. Pringle, 1990. May 30. Personal communication).

**1966 early** – Dwayne and Lowell Andreas join ADM. Dwayne joins the board and executive committee. Early the next year Lowell Andreas becomes executive vice president in the newly created office of the president, where he formally shares authority with John Daniels (*Fortune*. 1973. Oct. p. 136-41; *Herald & Review*. 1999. March 7. “Life Line”).

Through First Interoceanic Corp. they buy 100,000 shares of ADM stock, later extending their holdings to 181,900 shares. Dwayne owned 60% of the block of stock and Lowell owned 40%. Both Dwayne and Lowell moved to Minneapolis, where ADM was headquartered. Lowell stayed there for 1 year. Both men quickly realized that ADM needed “total reorganization.”

**1966 Dec.** – The word “TVP” is first mentioned in a publication (*Soybean Digest*, p. 14). The patent application was filed by the inventor, William T. Atkinson, on 7 March 1969, and U.S. Patent No. 3,488,770 was issued on 6 Jan. 1970. ADM refers to this patent number as the one governing TVP®.

**1965-66** – ADM starts producing cereal-soy blends such as CSM and WSB (Dick Wallace. 1981. Sept. 11. Personal communication).

**1967 April** – ADM sells all of its chemical operations for \$65 million. With this money the company catches up on a generation of soybean processing technology it has missed, renovating its two soybean plants at Decatur, increasing the capacity of one to 4,000 tons a day (keeping it the largest in the world). Over a 3-year period, ADM’s soybean crushing capacity is increased from 50 million to 120 million bushels a year.

**1967** – ADM enters the barge freight business.

**1968 June** – ADM announces that the headquarters of two of its divisions – soybean and food products – will be moved from Minneapolis to Decatur, Illinois. The relocation was actually completed in **1969**.

**1968** – ADM acquires Ross & Rowe, Inc., makers of Yelkin lecithin since at least 1931, for 6,000 shares; it becomes a

wholly-owned subsidiary of ADM (Pho, V.H. 2002. p. 64-66; *Minneapolis Star Tribune*, p. 70).

**1969** – ADM finishes moving its headquarters from Minneapolis, Minnesota, to Decatur, Illinois. Later in 1969 John Daniels moves to chairman of the board and Lowell Andreas becomes president of ADM (*Herald & Review*. 1999. March 7. “Life Line”).

**1970** – Dwayne Andreas is named chief executive officer (CEO) of ADM.

**1970** – ADM starts making bacon-flavored TVP (Dick Wallace. 1981. Sept. 11. Personal communication).

**1972 Feb.** – Lowell W. Andreas steps down as president of ADM. He said he would, when he reached age 50, at about the time he joined the company in 1965 (*Wall Street Journal*. 1972. Jan. 18. p. 26).

**1972** – Dwayne Andreas is elected chairman of the board at ADM. He is credited with transforming the firm into an industrial powerhouse. Andreas remains CEO until 1997 before his nephew G. Allen Andreas was named to this position. (ADM website). He was one of the most prominent political campaign donors in the United States, having contributed millions of dollars to Democratic and Republican candidates alike (Frontline, via Wikipedia 2020. July).

**1973 Jan. 15** – ADM acquires 50% of British Arkady Holdings Ltd. and simultaneously acquires its subsidiary British Arkady Co. of Old Trafford, Manchester, England. British Arkady Holdings Ltd. is the important company since it owns all of the subsidiaries, such as the Haldane Group. Also in 1973 British Arkady starts to make TVP in Manchester in 3 flavors: TVP Mince 120, TVP Mince 240, and TVP Chunk 10. The products are sometimes called “soya meat” or “vegetable meat.”

**1973 Oct.** – “Dwayne Andreas’s bean has a heart of gold,” by Ross Irwin is published in *Fortune* magazine. One of the best articles and histories seen on Dwayne Andreas and A-D-M. In the 7 years since Andreas took over the leadership of A-D-M, he has nearly tripled sales (from \$371,626,000 in fiscal 1967 to \$967,710,000 in fiscal 1973) and quintupled operating profits (from \$3,225,000 to \$16,895,000). Meanwhile, the price of the stock has nearly quadrupled.

**1974** – ADM acquires British Arkady (Dick Wallace. 1981. Sept. 11. Personal communication).

**1974** – ADM in Brazil.

1974 acquired; soybean processing, edible oil refinery; Technologia Tecnologia em Vegetais e Proteinas SA / 50%

1974 acquired / soybean processing, edible oil; ADM do Brasil Produtos Agrícolas

Source: Burbach & Flynn. 1980. p. 255.

**1976** – ADM starts making soy protein concentrate and textured soy protein concentrate; the latter was initially named TVP/2 (Dick Wallace. 1981. Sept. 11. Personal communication).

**1976** – ADM is now using a new tagline “Where the people who feed the world buy their groceries.”

**1980** – ADM’s net earnings are \$115,958,000 on net sales and other operating income of \$2,802,011,000.

**1980** – ADM Foods is formed (Dick Wallace. 1981. Sept. 11. Personal communication).

**1982** – ADM sponsors three television ads for TVP on two widely-watched Sunday-morning programs. Also sponsors a major print-ad campaign. “Over 200 million lb of TVP have been used to date in over 1,000 different consumer products.”

“Malthus said it would take a miracle to feed the world. Here it is’ – the soybean.” (*Soyfoods* magazine. 1982. Summer. p. 51, 53).

**1982 Dec.** – ADM buys 80% of Alfred C. Toepfer International (ACTI), a grain trading firm based in Germany. With this, ADM became a multinational grain trader. In 2014 ADM International purchased the remaining 20% of the company.

**1985 March** – British Arkady acquires Direct Foods Ltd., the first soyfoods company it buys. Since ADM owns British Arkady, Dwayne Andreas approves (directly or indirectly) each acquisition. Anna and Peter Roberts, the founders and owners of Direct Foods, Ltd., were buying Arkady’s TVP in bulk, then packing it into small domestic retail packs. Direct Foods thus becomes the first member of what would become the Haldane Foods Group. Having gotten into this business, Arkady liked what they were doing, so they began to look at other ways of adding value to textured protein (John Mahlich. 1994. March 6. Personal communication).

**1986 Feb.** – British Arkady acquires Vegetarian Feasts Ltd. Sonia Newhouse was selling frozen meatless entrees with no additives or artificial ingredients, with TVP as the main ingredient. This company put Arkady in the frozen food business (John Mahlich. 1994. March 6. Personal communication).

**1987 June** – “British Arkady purchases Societe Industrielle des Oléagineux, better known as S.I.O. This long established

French company has a factory in Aras and offices in Paris. Its principal activities include the milling of full-fat and defatted soy flours, and the manufacture of specialty oils for the food industry” (ADM Annual Report, 1987 [Dec.]).

**1987 Aug.** – The British Arkady Group acquires Haldane Foods Ltd., which owned The Regular Tofu Company. Haldane Foods had the best factory and offices in the still nameless group, and it was the biggest of the companies Arkady had acquired, and the one with the nicest sounding name. So British Arkady coined the name Haldane Foods Group Ltd., and began to use it as the first name for the new group of companies. With each new acquisition, Peter Fitch continued to be the Director General Manager leading the Group (John Mahlich. 1994).

**1987** – British Arkady acquires Vegetarian Cuisine Ltd., which basically was doing the same sorts of things as Vegetarian Feasts. Vegetarian Cuisine had a nice factory in Coventry, whereas Vegetarian Feasts had a factory in London that was very expensive. John Mahlich saw the opportunity to put the two into one manufacturing unit and to reduce costs by sharing them (John Mahlich. 1994).

**1987 Dec. 31** – ADM acquires the rest of Arkady Holdings Ltd. so that it now owns 100% (John Mahlich. 1994).

**1988 Sept.** – Haldane Foods Group acquires Realeat Foods Ltd. Gregory Sams was making dry vegeburger mix and frozen vegeburgers, but with 3-4 middlemen each taking a cut. So by tidying that all up and bringing it in house, Arkady had the chance to improve Realeat’s financial status (John Mahlich). In 1990 The Realeat Company released: The 1990 Realeat survey 1984-1990: “Changing attitudes to meat consumption” [in Great Britain]. This was the 7<sup>th</sup> consecutive survey (Greg Sams).

**1989 Feb.** – Haldane Foods Group acquires Kwalitty Foods, which it renamed Saucemasters Ltd. The company basically makes noodle- or rice-based vegetarian snack meals that contain textured protein and dried vegetables with a sauce sachet in each plastic cup. You pour hot water into the cup, leave for 4 minutes, and you have a very convenient and nutritious meal. This type of product is big business in England (John Mahlich).

**1989 March** – Handane Foods Group acquires Genice Foods Ltd. Pronounced JEN-ice, it makes non-dairy ice creams, yogurts, and margarines. “By this time we were deeply into the healthy food, health food, vegetarian business.” Though this was the Group’s first company to make non-dairy products, it fit well because their products were basically made from soya – either soyamilk or soya protein isolates. “Not only were we developing a group of interesting

companies that can make some profit, but we were also signaling to a very large audience that maybe others (such as the many food manufacturers who have been hesitant to use soya) should get into the soya business. And ADM likes that, because the more it is obvious that soya is here to stay and that it has multitudinous uses, the more Dwayne Andreas's dream will come true. (John Mahlich).

**1989** – ADM's new tagline is "Supermarket to the world" (*Des Moines Register*. 1989. Feb. 5; 1992 Annual Report).

**1989?** – British Arkady Co. Ltd. starts making TVP2 – Textured soy protein concentrate. And Arkady Sparkle – Granular Soya Protein Concentrate.

**1990 Dec.** – The Haldane Group purchases Unisoy, a small soya company which was for sale and which made soymilk (John Mahlich).

**1991?** – The Haldane Group purchases Granose Food Company. "Granose had built a brand new and beautiful factory which was about 40 miles north of London, and that fit it very well to the growth and pattern that we were following." So the Haldane Group moved the center of their operations out of the Haldane factory and into the Granose factory, where it now is. Granose was selling soymilk that was being imported from a German manufacturer [DE-VAU-GE]. The Haldane Group decided to discontinue these imports, and now Unisoy is making all of the soymilk for Granose that used to be imported from Germany. The quality of Unisoy's soymilk is definitely as good as the German-made product, and now Granose has added many new soymilk products to its range.

The various products sold by the companies in the Haldane Group are being made in five factories: the Unisoy factory (soymilk), the Genice factory (non-dairy yogurts, ice creams, and margarine), the Haldane factory (which makes all dry mixes), and the Granose factory (which makes frozen burgers and many other non-dry products). The Group also makes unique skinless sausages

"The main thing to remember is that this is all part of ADM, it has all been approved by Dwayne Andreas and the ADM board, and it's very much in line with ADM's philosophy." Dwayne believes that soy products will play a key role in feeding this world. "To Dwayne, that is a mission" (John Mahlich).

**1990 Sept.** – ADM starts to sell Midland Harvest Harvest Burgers – Frozen, plant-based. By May 1992, some 4,500 per day are sold at one restaurant in Moscow (*Direct Marketing*. 1993. Sept. p. 23-26).

**1993 Oct.** – ADM starts to sell its meatless Harvest Burger through the Green Giant Div. of Pillsbury. They are sold at

many U.S. supermarkets. ADM's 1997 Annual Report says that more than 100 million Green Giant Harvest Burgers have been sold (p. 19).

**1994 Nov.** – Michael Andreas, son of Dwayne O. Andreas and heir apparent, is now vice chairman of ADM's board of directors and executive vice president. He observes astutely: "Over the last 15 years, however, I observed the following. Ten million acres of soybeans disappeared from the U.S., while areas in Argentina and Brazil increased 14 million acres where land was cheaper and subsidized credits were available. An additional 18.7 million oilseed acres were planted in Canada and Europe, again with heavy subsidies. Twenty-two soybean factories [crushing plants] were closed in our country, while fifty sprung up in South America and Europe. Our share of the world market in soybean products was cut in half. In fact, over 20,000 soybean farmers left the business, and 50,000 jobs were lost at home" (ADM's *First quarter report to shareholders*).

Note: Bonnie Wittenburg (March 1995) says that all operating divisions of ADM have reported to Michael ("Mick") Andreas for the past 3 years, and he apparently has major input on expansion plans and capital investment. A workaholic, he "joined ADM in 1971 after receiving a bachelor's degree in business from Northwestern University. At ADM he has worked as a commodity merchandiser in the United States and in Brussels, Belgium. He is said to love trading and he continues to keep a desk on the trading floor at ADM; it is not unusual to spot him there. Mick Andreas is past president of ADM's soybean processing division and has generally supervised ADM's commodity trading and marketing worldwide since 1980."

**1995 June 12** – ADM sells its British Arkady bakery ingredient business to Unilever, but keeps the Haldane Food Group and other parts of British Arkady (Doug Schmalz. 1995. July 19. Personal communication).

**1995 Sept.** – Construction of increased isolated soy protein capacity was begun at Europoort (The Netherlands) and in the USA. "Low-nitrite ProFam 781 [soy protein isolate] was successfully introduced into the European infant formula market during the past year" (ADM annual report).

**1995 Oct. 27** – A long article in the *Wall Street Journal* titled "Risk averse," by Scott Kilman et al. states that ADM is a major beneficiary of federal price supports for sugar (they make ADM's high-fructose corn sugar an economical product) and of the 54-cent-a-gallon excise tax break on ethanol (since ADM is the dominant producer of the corn-based fuel additive). Mr. Andreas helps preserve these twin towers of legislative largesse by hedging. ADM leads corporate America in contributing to both political parties. "Since 1981, the company has given more than \$800,000 to

the Democratic Party and more than 1.5 million to the GOP” (Republican Party).

Pie charts show that ADM is the market leader in four major U.S. markets, controlling an estimated 35% of all corn refining, 31% of high-fructose corn syrup, 28% of oilseed [mainly soybean] processing (followed by Cargill 25%, Bunge 16%, Ag Processors 14%, Central Soya 10%, and others 7%), and 26% of wheat milling.

**1996 Jan.** – The U.S. Department of Justice is investigating ADM for antitrust violations. The company is facing a shareholder revolt, and demands for a board of directors with less insider influence (*Wall Street Journal*. 1996. Jan. 16).

**1996 Oct.** – A sweeping federal investigation leads to a \$100 million fine for price fixing against ADM – a record penalty in a criminal antitrust case at the time. ADM was alleged to have been involved in an international scheme to fix the prices of lysine and citric acid, however ADM never admitted wrongdoing. Of the \$100 million, \$70 million was in connection with lysine and \$30 million in connection with citric acid (*Wall Street Journal*. 1996. Oct. 15, p. A3; Standard & Poor’s stock report on ADM. 1997. Jan. 11; *New York Times*. 2000. Dec. 24 and 2016. Nov. 16).

**1996** – ADM changes its top management structure from having a CEO to having a four-person Office of the Chief Executive. With Dwayne Andreas, the team includes ADM President James Randall; Charles Bayless, president of ADM’s soybean division; and G. Allen Andreas, counsel to the board’s executive committee and a nephew of Dwayne Andreas (*Herald & Review*. 1999. March 7. “Life Line”).

**1997 April 18** – Dwayne Andreas, age 79, is surrendering his long-held post as CEO to a nephew, G. Allen Andreas, age 53. Andreas will continue as chairman but ADM officials expect him to play a much diminished role in the company he has run since 1970. Mr. Andreas said he was willing to give up this position in part because he hasn’t directly supervised ADM’s daily operations for years; rather he has concentrated on mapping ADM’s long term strategy (*Wall Street Journal*, p. B17 (West); Steve Buchheim. 1997. Personal communication).

**1997 Nov.** – ADM introduces Novasoy (soy isoflavones).

**1999 Jan. (winter)** – *ADM Nutrition & Health Update*, a glossy 4-6 page newsletter, starts to be published by ADM’s Nutraceutical Division. Two months earlier the U.S. FDA had issued its Soy Health Claim.

**1999 Jan. 25** – Dwayne Andreas’ request to step down as chairman of the board is accepted by the ADM board of directors. He will remain on the board and serve as chairman

emeritus. G. Allen Andreas (nephew of Dwayne Andreas) is chosen by the board to replace Dwayne as chairman of the board (*Herald & Review*. 1999. March 7; *New York Times*. 2000. Dec. 24).

**1999 April** – ADM introduces Pro Fam isolated soy proteins. “This is the first of a new generation of purified soy protein products. Very low flavor, very low odor, and protein functionality greater by a magnitude than anything else available” (ADM spec. sheet).

**1999 July 12** – Michael D. Andreas, age 50 and son of ADM chief Dwayne Andres, is sentenced to 2 years in jail and fined \$350,000 (*Wall Street Journal*. p. A4).

Michael Andreas’ term was later extended by a year after the government appealed. Before his conviction, Andreas was considered the heir apparent to his father, ADM chairman, Dwayne Andreas (*Chicago Tribune*. 2001. Dec. 20. “Andreas released to halfway house”).

**2001 Dec.** – Dwayne Andreas retires from ADM’s board of directors, after having been on that board for 35 years. He agrees to serve as chairman emeritus (*ADM this quarter: First quarter report to shareholders*. 1 page insert).

**2000** – ADM partners with Wilmar International Ltd. to construct five soybean crushing plants in China (*World Grain*. 2003. May. p. 12).

**2001 June** – ADM unveils a new corporate logo designed to underscore the company’s deep commitment to nature and global agriculture. The matching tagline is “The Nature of Things to Come.”

ADM pays its 300th cash dividend and 280th consecutive quarterly payment, a record of seventy years of uninterrupted stock dividends (*ADM Nutrition and Health Update*. 2001. Vol. 3, No. 1).

**2001** – Paul B. Mulhollem becomes president of ADM. Under his guidance, the company was the first U.S. company to sign a contract with Cuba since the embargo against Cuba was imposed October 1960 (“So You Want to Buy a President.” 1996. Frontline on PBS).

**2002** – In his PhD dissertation Van H. Pho writes (p. 63-73) a case study of ADM. The centerpiece of this study is Table 5 titled “Summary of Archer-Daniels-Midland business activity” (July 1923 to July 1998).

**2006 May** – Patricia A. Woertz is named CEO and President of ADM. (ADM website). Before coming to ADM she was with Chevron (*Chicago Tribune*, 2014. Nov. 6).

**2006 Dec. 8** – The Haldane Foods Group is acquired by

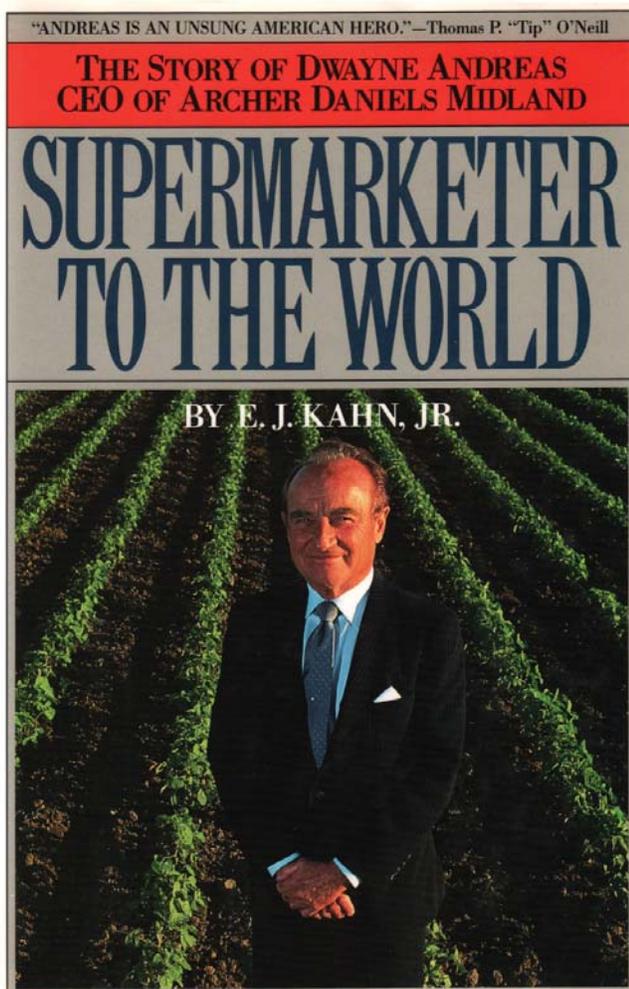
The Hain Celestial Group, Inc. from ADM for about \$10.1 million. At the time of acquisition Haldane's brands include Realeat frozen foods, Granose, Direct Foods and Realeat dry mixes, and Granose non-dairy beverages (*Hain Celestial annual report*. 2007).

**2011** – ADM is named the world's most admired food production company by *Fortune* magazine for three consecutive years: 2009, 2010, and 2011 (ADM news release. 2011, March 3)

**2013 Aug.** – ADM moves its global headquarters to downtown Chicago (*Chicago Tribune*. 2014. Nov. 6).

**2014 July 7** – ADM buys ingredients company Wild Flavors for about \$3 billion (*Chicago Tribune*).

**2016 Nov. 16** – “Dwayne O. Andreas, who turned Archer Daniels Midland into food giant, dies at 98” – in Decatur, Illinois. An excellent biography and obituary (*New York Times*, p. B16).



## ABOUT THIS BOOK

This is the most comprehensive book ever published about the history of ADM. It has been compiled, one record at a time over a period of 42 years, in an attempt to document the history of this interesting subject. It is also the single most current and useful source of information on this subject.

This is one of more than 100 books compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyinfo Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features detailed information on:

- 68 different document types, both published and unpublished.
- 1583 published documents - extensively annotated bibliography. Every known publication on the subject in every language.
- 253 unpublished archival documents.
- 311 original Soyinfo Center interviews and overviews never before published, except perhaps in our books.
- 300 commercial soy products.

Thus, it is a powerful tool for understanding the development of this subject from its earliest beginnings to the present.

Each bibliographic record in this book contains (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English language publications together with an English translation of the title, month and issue of publication, and the first author's first name (if given). For most books, we state if it is illustrated, whether or not it has an index, and the height in centimeters.

All of the graphics (labels, ads, leaflets, etc) displayed in this book are on file, organized by subject, chronologically, in the Soyinfo Center's Graphics Collection.

For commercial soy products (CSP), each record includes (if possible) the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as advertisements, articles, patents, etc.) are also given.

A complete subject/geographical index is also included.

## ABBREVIATIONS USED IN THIS BOOK

A&M = Agricultural and Mechanical	mm = millimeter(s)
Agric. = Agricultural or Agriculture	N. = North
Agric. Exp. Station = Agricultural Experiment Station	No. = number or North
ARS = Agricultural Research Service	Nov. = November
ASA = American Soybean Association	Oct. = October
Assoc. = Association, Associate	oz = ounce(s)
Asst. = Assistant	p. = page(s)
Aug. = August	photo(s) = photograph(s)
Ave. = Avenue	P.O. Box = Post Office Box
Bld. = Boulevard	Prof. = Professor
bu = bushel(s)	psi = pounds per square inch
ca. = about (circa)	R&D = Research and Development
cc = cubic centimeter(s)	Rd. = Road
Chap. = Chapter	Rev. = Revised
cm = centimeter(s)	RPM = revolutions per minute
Co. = company	S. = South
Corp. = Corporation	SANA = Soyfoods Association of North America
Dec. = December	Sept. = September
Dep. or Dept. = Department	St. = Street
Depts. = Departments	tonnes = metric tons
Div. = Division	trans. = translator(s)
Dr. = Drive	Univ. = University
E. = East	USB = United Soybean Board
ed. = edition or editor	USDA = United States Department of Agriculture
e.g. = for example	Vol. = volume
Exp. = Experiment	V.P. = Vice President
Feb. = February	vs. = versus
fl oz = fluid ounce(s)	W. = West
ft = foot or feet	°C = degrees Celsius (Centigrade)
gm = gram(s)	°F = degrees Fahrenheit
ha = hectare(s)	> = greater than, more than
i.e. = in other words	< = less than
Inc. = Incorporated	
incl. = including	
Illust. = Illustrated or Illustration(s)	
Inst. = Institute	
J. = Journal	
J. of the American Oil Chemists' Soc. = Journal of the American Oil Chemists' Society	
Jan. = January	
kg = kilogram(s)	
km = kilometer(s)	
Lab. = Laboratory	
Labs. = Laboratories	
lb = pound(s)	
Ltd. = Limited	
mcg = microgram(s)	
mg = milligram(s)	
ml = milliliter(s)	

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**2. Search the book.** The **KEY** to using this digital book, which is in PDF format, is to **SEARCH IT** using Adobe Acrobat Reader: For those few who do not have it, Google: **Acrobat Reader** - then select the **free** download for your type of computer.

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**Type in your search term, such as Decatur or Cedar Falls.**

**You will be told how many times this term appears, then the first one will be highlighted.**

**To go to the next occurrence, click the down arrow, etc.**

**3. Use the indexes, located at the end of the book.** Suppose you are looking for all records about tofu. These can appear in the text under a variety of different names: bean curd, tahu, doufu, to-fu, etc. Yet all of these will appear (by record number) under the word “Tofu” in the index. See **“How to Use the Index,”** below. Also:

**Chronological Order:** The publications and products in this book are listed with the earliest first and the most recent last. Within each year, references are sorted alphabetically by author. If you are interested in only current information, start reading at the back, just before the indexes.

**A Reference Book:** Like an encyclopedia or any other reference book, this work is meant to be searched first - to find exactly the information you are looking for - and then to be read.

**How to Use the Index:** A subject and country index is located at the back of this book. It will help you to go directly to the specific information that interests you. Browse through it briefly to familiarize yourself with its contents and format.

Each record in the book has been assigned a sequential number, starting with 1 for the first/earliest reference. It is this number, not the page number, to which the indexes refer. A publication will typically be listed in each index in

more than one place, and major documents may have 30-40 subject index entries. Thus a publication about the nutritional value of tofu and soymilk in India would be indexed under at least four headings in the subject and country index: Nutrition, Tofu, Soymilk, and Asia, South: India.

Note the extensive use of cross references to help you: e.g. “Bean curd. See Tofu.”

**Countries and States/Provinces:** Every record contains a country keyword. Most USA and Canadian records also contain a state or province keyword, indexed at “U.S. States” or “Canadian Provinces and Territories” respectively. All countries are indexed under their region or continent. Thus for Egypt, look under Africa: Egypt, and not under Egypt. For Brazil, see the entry at Latin America, South America: Brazil. For India, see Asia, South: India. For Australia see Oceania: Australia.

**Most Important Documents:** Look in the Index under “Important Documents -.”

**Organizations:** Many of the larger, more innovative, or pioneering soy-related companies appear in the subject index – companies like ADM / Archer Daniels Midland Co., AGP, Cargill, DuPont, Kikkoman, Monsanto, Tofutti, etc. Worldwide, we index many major soybean crushers, tofu makers, soymilk and soymilk equipment manufacturers, soyfoods companies with various products, Seventh-day Adventist food companies, soy protein makers (including pioneers), soy sauce manufacturers, soy ice cream, tempeh, soynut, soy flour companies, etc.

Other key organizations include Society for Acclimatization (from 1855 in France), American Soybean Association, National Oilseed/Soybean Processors Association, Research & Development Centers (Peoria, Cornell), Meals for Millions Foundation, and International Soybean Programs (INTSOY, AVRDC, IITA, International Inst. of Agriculture, and United Nations). Pioneer soy protein companies include Borden, Drackett, Glidden, Griffith Labs., Gunther, Laucks, Protein Technologies International, and Rich Products.

**Soyfoods:** Look under the most common name: Tofu, Miso, Soymilk, Soy Ice Cream, Soy Cheese, Soy Yogurt, Soy Flour, Green Vegetable Soybeans, or Whole Dry Soybeans. But note: Soy Proteins: Isolates, Soy Proteins: Textured Products, etc.

**Industrial (Non-Food) Uses of Soybeans:** Look under “Industrial Uses ...” for more than 17 subject headings.

**Pioneers - Individuals:** Laszlo Berczeller, Henry Ford, Friedrich Haberlandt, Artemy A. Horvath, Englebert Kaempfer, Mildred Lager, William J. Morse, etc. Soy-Related Movements: Soyfoods Movement, Vegetarianism, Health and Dietary Reform Movements (esp. 1830-1930s), Health Foods Movement (1920s-1960s), Animal Welfare/Rights. These are indexed under the person's last name or movement name.

**Nutrition:** All subjects related to soybean nutrition (protein quality, minerals, antinutritional factors, etc.) are indexed under Nutrition, in one of more than 70 subcategories.

**Soybean Production:** All subjects related to growing, marketing, and trading soybeans are indexed under Soybean Production, e.g., Soybean Production: Nitrogen Fixation, or Soybean Production: Plant Protection, or Soybean Production: Variety Development.

**Other Special Index Headings:** Browsing through the subject index will show you many more interesting subject headings, such as Industry and Market Statistics, Information (incl. computers, databases, libraries), Standards, Bibliographies (works containing more than 50 references), and History (soy-related).

**Commercial Soy Products (CSP):** See "About This Book."

**SoyaScan Notes:** This is a term we have created exclusively for use with this database. A SoyaScan Notes Interview contains all the important material in short interviews conducted and transcribed by William Shurtleff. This material has not been published in any other source. Longer interviews are designated as such, and listed as unpublished manuscripts. A transcript of each can be ordered from Soyinfo Center Library. A SoyaScan Notes Summary is a summary by William Shurtleff of existing information on one subject.

**"Note:"** When this term is used in a record's summary, it indicates that the information which follows it has been added by the producer of this database.

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[23\* ref] means that most of these references are **not** about soybeans or soyfoods.

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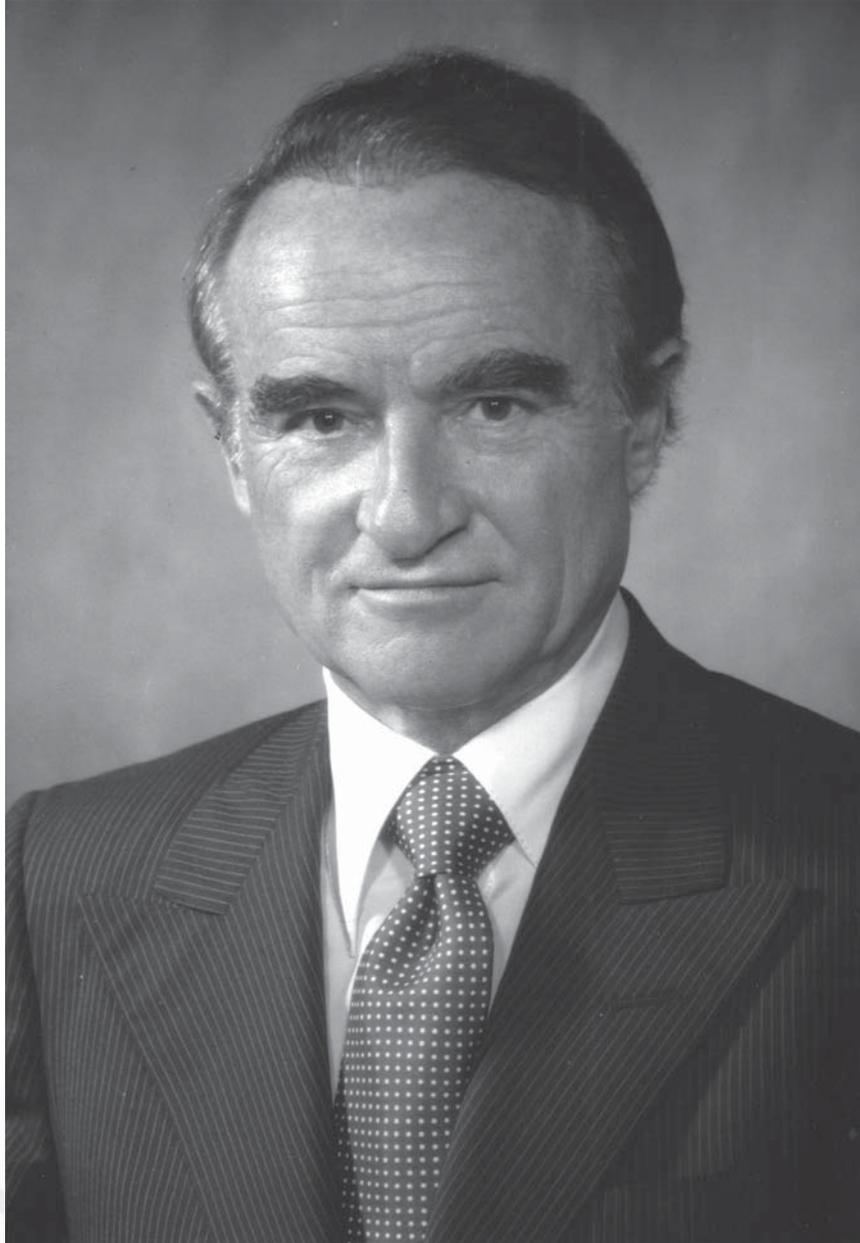
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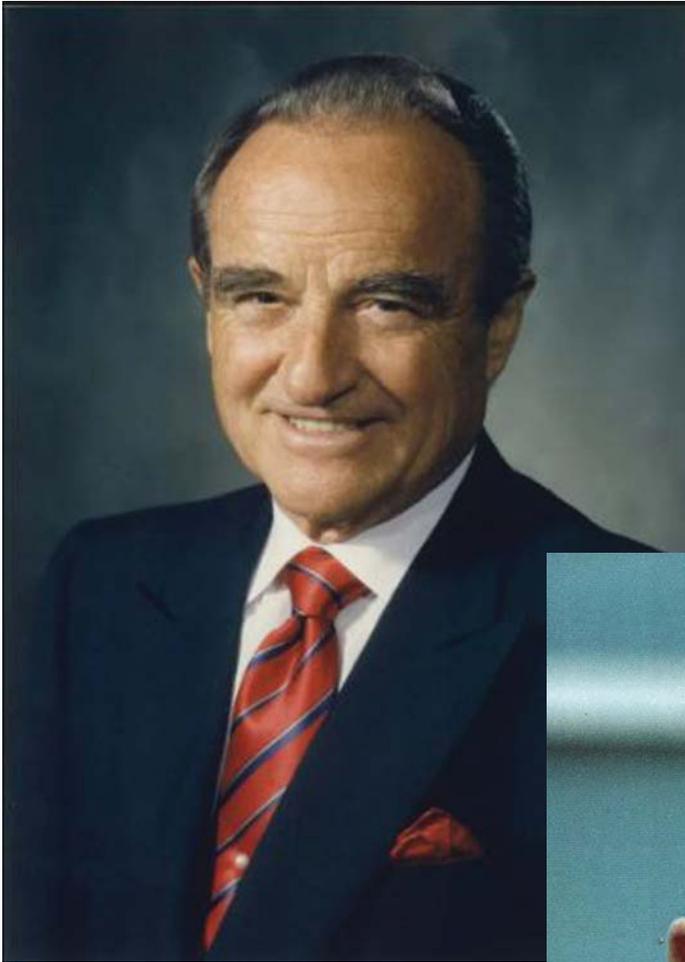
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Archer Daniels Midland's headquarters in Chicago

**Archer Daniels Midland Company**



## Family in which Dwayne Orville Andreas was a Child

<b>Husband:</b>		Reuben Peter Andreas	
	Birth:	13 August 1881 in Sterling, Whiteside Co., Illinois	
	Marriage:	27 November 1902 in Sterling, Carroll Co., Illinois	
	Death:	30 December 1953 in Miami-Dade Co., Florida	
	Burial:	Lisbon Cemetery, Lisbon, Linn Co, Iowa	
	Father:	Martin G Andreas	
	Mother:	Mary H Rutt	
	Other Spouses:	Pauline Margaret Stoltz Herrick (10 August 1940 in Dubuque Co., Iowa)	
<b>Wife:</b>		Lydia Barbara Stoltz	
	Birth:	13 November 1882 in Sterling, Whiteside Co., Illinois	
	Death:	8 May 1938 in Lisbon, Linn Co., Iowa	
	Burial:	Lisbon Cemetery, Lisbon, Linn Co., Iowa	
	Father:	Bernard Stoltz	
	Mother:	Margaret Hummel	
<b>Children:</b>			
1	Name:	Osborne S. Andreas	
M	Birth:	20 October 1903 in Sterling, Whiteside Co., Illinois	
	Marriage:	9 October 1934 in Kings Co., New York	
	Death:	October 1967 in Chicago, Cook, Illinois	
	Burial:	Oak Woods, Cemetery, Chicago, Cook Co., Illinois	
	Spouse:	Evelyn H Curtis	
	Other Spouses:	Marian Bomberger Edwards (Abt. 15 January 1948 in Manhattan, New York) Margot Beman (15 May 1954 in Indiana, United States)	
2	Name:	Albert M. Andreas	
M	Birth:	16 August 1907 in Sterling, Whiteside Co., Illinois	
	Marriage:	1936	
	Burial:	1988 in North Miami, Miami-Dade, Florida, United States of America	
	Death:	2 September 1988 in Springfield, Sangamon, Illinois, United States	
	Spouse:	Viola L. Kemper	
3	Name:	Lenora "Lenore" Jeanette Andreas	
F	Birth:	21 July 1913 in Nobles Co., Minnesota	
	Marriage:	21 April 1932 in Lisbon, Linn Co., Iowa	
	Death:	9 May 1969 in Miami-Dade Co., Florida	
	Spouse:	George G. Schunknedt	
	Other Spouses:	Harlon Sober Marvin R. Steele	
4	Name:	Glen A. Andreas	
M	Birth:	29 January 1917 in Worthington, Nobles Co., Minnesota	
	Death:	5 November 1933 in Pella, Marion Co., Iowa	
	Burial:	Libson Cemetery, Lisbon, Linn Co., Iowa	
	Spouse:	Vera Irene Yates	

5	Name:	Dwayne Orville Andreas	
M	Birth:	4 March 1918 in Worthington, Nobles Co., Minnesota	
	Marriage:	16 December 1947 in Minneapolis, Hennepin Co., Minnesota	
	Death:	17 December 2016 in Decatur, Macon Co., Illinois	
	Burial:	Probably cremated	
	Spouse:	Dorothy Inez Snyder	
	Other Spouses:	Bertha Benedict (1935 in St Lucie Co., Florida)	
6	Name:	Lowell Willard Andreas	
M	Birth:	24 February 1922 in Lisbon, Linn Co., Iowa	
	Marriage:	30 May 1943 in Cedar Rapids, Linn Co., Iowa	
	Death:	4 April 2009 in Mankato, Blue Earth Co., Minnesota	
	Burial:	Mankato, Blue Earth Co., Minnesota; Glenwood Cemeterry	
	Spouse:	Nadine Betty Hamilton	

**Notes:****Reuben Peter Andreas**

Parents: Martin G. Andreas and his wife, Mary H. Rutt. Martin born 18 Jul 1845 in Lancaster Co., Pennsylvania. He died 18 Jan 1930 in Sterling, Whiteside Co., Illinois. Their children: Fannie R., William G., Ida M., Anna L., and Reuben P. Mary died and Martin married Fannie Andrew of Lancaster Co., Pennsylvania. Source: Lancaster, Pennsylvania, Mennonite Vital Records, 1750-2014 via Ancestry.com.

Birth: Several sources which list Reuben's birth give varying places of his birth, although most are not more than 12 miles apart. Sources and places given in each follow:

1. 1880 US Census - Although Reuben was not yet born, Martin and Mary Andreas, his parents, lived in Palmyra Township, Lee Co., Illinois.
2. 1900 US Census - Details shown later in these notes, the family was still living in Palmyra Township, Lee Co., Illinois.
3. World War II Draft Registration which Reuben signed stated he was born in Lee Co., Illinois.
4. Marriage Record of marriage to Pauline - He stated he was born in Sterling, Whiteside Co., Illinois.
5. Social Security Applications and Claims - This record shows he was born in Sterling, Whiteside Co., Illinois.
6. findagrave.com - This shows his birth place as Prairieville, Lee Co., Illinois. This data is NOT shown on his tombstone.

It should be noted that Sterling and Prairieville are in different counties, they are only about 6 miles apart.

Birth and Death: findagrave.com Memorial # 141259303. Photo of tombstone is on the website. Social Security Applications and Claims Index, 1936-2007 states he was born in Sterling, Illinois via Ancestry.com.

First Marriage: The marriage date was taken from an article published in the Sterling, Illinois *Gazette* on 28 Nov 1902, Page 1 titled: "A Double Wedding. Daughters of Mr. and Mrs. Bernard Stoltz Married to Well Known Young Men." The text of the article stated: "A pretty double wedding was solemnized last evening at eight o'clock at the home of Mr. and Mrs. Bernhard (sic) Stoltz, in which two of their daughters took the marriage vows. The ceremony was performed by Rev. Mr. Keagle of Trinity Evangelical Church uniting the lives of Miss Catherinie Stoltz and Paul Jamison of Burt, Iowa, Miss LYDIA STOLTZ and Mr. REUBEN ANDREAS of Prairieville...." Therefore the wedding was performed on 27 Nov 1902.

Second Marriage: On 10 August 1940, Reuben Andreas married his first wife's younger sister, Pauline Margaret (Stoltz) Herrick, in Dubuque, Dubuque Co., Iowa. Source: Iowa State Department of Health, Return of Marriage to Clerk of District Court, Dubuque County #31 4431 and 1900 United States Census, Whiteside Co., Illinois, Supervisor's District 4, Enumeration District 156, Sheet 3, Page 251 A. via Ancestry.com.

Reuben Andreas and family lived in Illinois until sometime between 1907 and 1913 based on the birth places of their children. They then moved to Worthington, Nobles Co., Minnesota where they remained until about late 1919. Source of the move to Minnesota: *Dixon Evening Telegram (Dixon, Illinois)*, 19 Jan

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**Notes: (cont.)**

1919, Page 3, Col. 2. Again, based on the births of their children, the family moved from Worthington, Nobles Co., Minnesota to Linn Co., Iowa between 1918 and 1922.

Reuben's World War I Draft Registration card, #526, stated he lived in Worthington, Nobles Co., Minnesota. He was a farmer in Township 3. Lydia B. Andreas was his next of kin. He was of medium height, medium build, grey eyes and light brown hair. He registered 12 Sep 1912 from Ancestry.com.

Reuben's World War II Draft Registration Card, Serial # 211, was completed at the Local Draft Board in Cedar Rapids, Linn Co., Iowa on 27 April 1942. It showed he was 60 years old and lived at 525 Vernon Dr. S. E. in Cedar Rapids, Linn Co., Iowa. His telephone number was 6527. His son Glen, who lived on Foote S. W. in Cedar Rapids was the person who would always know Reuben's whereabouts. He was self-employed at Honeymead Products, 850 10th St., S. W. in Cedar Rapids. He was 5' 3" tall, weighed 150 pounds, with hazel eyes, black hair, and a ruddy complexion. Source: World War II Draft Registration Cards, 1942 via Ancestry.com

In 1900, the family of Martin Andreas was living in Palmyra Township, Lee Co, Illinois, He was age 54, and born in July 1845 in Pennsylvania. Both of his parents had been born in Pennsylvania. They owned the farm although it was mortgaged. His wife Mary, age 58, was born in June 1841 in Pennsylvania as were both her parents. Martin and Mary had been married 31 years. She was the mother of 5 children, all of whom were living in 1900. Children living in the household were: daughter Annie, age 21, born August 1878 in Illinois; son Reuben, age 18, born in August 1881 in Illinois; and nephew Earl Andreas, age 13, born in September 1886 in Illinois. Both young men were farm laborers, Reuben having attended school for 5 months and Earl for 7 months. Source: 1900 United States Census of Palmyra Township, Lee Co., Illinois, Supervisor's District 46, Enumeration District 66, Sheet 2, Page 244A. Enumerated in June, 1900 by Mary A. McCleary via Ancestry.com.

In 1910, Reuben P. Andreas and his family were living in Palmyra Township, Lee Co., Iowa. He was 27 years old. His wife was Lydia, age 27. They had been married for 7 years. She was the mother of 2 children, both of whom were living at the time of the census. Reuben was a farmer and was renting the farm. Children in the family were Osborne, age 6; and Albert, age 3. All the family were born in Illinois. Reuben's parents had been born in Pennsylvania. Lydia's were born in Germany. Source: 1910 United States Census of Iowa, Palmyra Township, Lee Co., Supervisors District 4, Enumeration District 59, Sheet 5B. The Census was enumerated on April 27 & 28, 1910 by J. T. Lawrence via Ancestry.com.

In the 1920, Reuben P. Andreas, age 38, born in Illinois, parents both born in Pennsylvania, and his wife, Lydia B. Andreas, age 37, born in Illinois, both parents born in Germany, were living in Franklin Township, Linn Co., Minnesota. In the family were son Osborne S., age 16, born in Illinois; Albert M., age 12, Lenore G., age 6, born in Minnesota; Glen A., age 2, born in Minnesota; Dwayne O., age 1-11/12 born in Minnesota. Reuben was a farmer. The family owned their house but it was mortgaged. Source: 1920 Census of Franklin Township, Linn Co., Minnesota, Supervisor's District 5, Enumeration District 93. Page 1A. Census enumerated on 2 January 1920 by Harry H. Hanks via Ancestry.com.

In the 1925 Iowa State Census, R. P. Andreas was recorded in Lisbon, Linn Co., Iowa. His family was recorded as Lydia B, age 40; Osborne, age 21; Lenore, age 10; Glen, age 8; Wayne [sic], age 6; and Lowell, age 2. Their home was worth \$10,000 with a \$6,700 mortgage. R. P. Andreas carried \$10,000 worth of insurance on the home. R. P. Andreas had attended college for 4 years, Lydia for 1. Enumerator and date were not shown in the Census records on Ancestry.com.

In 1930, Reuben T. Andreas, age 48, and his wife Lydia B., age 47, were living in Lisbon, Franklin Township, Linn Co., Minnesota. They owned their home which was worth \$10,000. Both were born in Illinois. In the family were daughter Lenore J., age 16, born in Minnesota; Glen A., age 13, born in Minnesota; son Glen A., age 13, born in Minnesota; son Dwayne O., age 12, born in Minnesota; son Lowell W., age 8, born in Iowa. Reuben and Lydia had been married 27 years. Reuben was employed as a Manager of a Grain Elevator. Source: 1930 United States Census, Lisbon, Franklin Township, Linn Co., Minnesota, Supervisor's District 57-13, Enumeration District 10, Sheet 4A. Census enumerated 22 Apr 1930 by Elizabeth B. Ink.

In 1936, Reuben and Lydia Andreas sailed from Southampton, England to New York on the ship Britannia. They sailed in Aug 1936 although the day of the month of sailing and arrival are not legible. Reuben was

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**Notes: (cont.)**

age 55, born on 13 Jul 1881 in Prairieville, Illinois. Lydia was 53 years old and was born 13 Nov 1882 in Sterling, Illinois. They were residing in Lisbon, Iowa at the time of the sailing.

The 1938 Cedar Rapids, Linn Co., Iowa City Directory listed Reuben P. Andreas as President, Honeymead Products Co. His residence was in Lisbon, Linn Co., Iowa. Source: Polk's Cedar Rapids (Linn Co., Iowa) City Directory, Vol. 1938. R. L. Polk & Co, Publisher, 431 Howard St., Detroit, Michigan via Ancestry.com

In the 1939 Cedar Rapids, Linn Co., Iowa City Directory, Reuben P. Andreas was listed as President, Honeymead Products Co. He resided in the Commonwealth Apartments in Cedar Rapids. His telephone number was 2-5833. Source: Polk's Cedar Rapids (Linn Co., Iowa) City Directory, Vol. 1939. R. L. Polk & Co., Publishers, 431 Howard St., Detroit, Michigan via Ancestry.com.

In 1940, Reuben P. Andreas, age 58, widowed, was living in Cedar Rapids, Linn Co., Iowa. He had 4 years of high school. He lived in the same place in 1935. He was employed as an executive in a grain processing business. He worked 45 hours per week and earned more than \$5,000 the previous year. Source: 1940 United States Census, Cedar Rapids, Rapids Township, Linn Co., Iowa, Supervisor's District 2, Enumerator District 57-50 B, Sheet 61A. Enumerated on 13 Apr 1940 by Robert J. Abodeely.

Reuben P. Andreas was recorded in the 1950 City Directory of Cedar Rapids, Linn Co., Iowa. He was Chairman of the Board of Honeymead Products Co. His wife's name was Pauline. They resided at 525 Vernon SE in Cedar Rapids. [Note: Reuben and Pauline were similarly listed in the 1951 City Directory of Cedar Rapids. Source: Polk's Cedar Rapids (Linn Co., Iowa) City Directory, 1950, Publisher R. L. Polk & Co., 500 Karbach Block, Omaha 2, Nebraska.

In the 1953 City Directory of Cedar Rapids, Linn Co., Iowa was recorded Reuben P. Andreas and wife Pauline living at 525 Vernon SE in Cedar Rapids. Source: Polk's Cedar Rapids (Linn Co., Iowa) City Directory, 1953, Publisher R. L. Polk & Co., 500 Karbach Block, Omaha 2, Nebraska.

Death: 1953 in Dade Co., Florida. Source: Florida Death Index, 1877-1998 via Ancestry.com.

Inducted into the Decatur Hall of Fame on 22 Nov 2016. Source: Decatur Herald and Review (Decatur., Illinois), 23 Nov 2016, Page A1 via Newspapers.com.

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**Lydia Barbara Stoltz**

Birth and Death: Findagrave.com Memorial # 14125.

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**Osborne S. Andreas**

In 1910, Reuben P. Andreas and his family were living in Palmyra Township, Lee Co., Iowa. He was 27 years old. His wife was Lydia, age 27. They had been married for 7 years. She was the mother of 2 children, both of whom were living at the time of the census. Reuben was a farmer and was renting the farm. Children in the family were Osborne, age 6; and Albert, age 3. All the family were born in Illinois. Reuben's parents had been born in Pennsylvania. Lydia's were born in Germany. Source: 1910 United States Census of Iowa, Palmyra Township, Lee Co., Supervisors District 4, Enumeration District 59, Sheet 5B. The Census was enumerated on April 27 & 28, 1910 by J. T. Lawrence via Ancestry.com.

In the 1920, Reuben P. Andreas, age 38, born in Illinois, parents both born in Pennsylvania, and his wife, Lydia B. Andreas, age 37, born in Illinois, both parents born in Germany, were living in Franklin Township, Linn Co., Minnesota. In the family were son Osborne S., age 16, born in Illinois; Albert M., age 12, Lenore G., age 6, born in Minnesota; Glen A., age 2, born in Minnesota; Dwayne O., age 1-11/12 born in Minnesota. Reuben was a farmer. The family owned their house but it was mortgaged. Source: 1920 Census of Franklin Township, Linn Co., Minnesota, Supervisor's District 5, Enumeration District 93. Page 1A. Census enumerated on 2 January 1920 by Harry H. Hanks via Ancestry.com.

In the 1925 Iowa State Census, R. P. Andreas was recorded in Lisbon, Linn Co., Iowa. His family was recorded as Lydia B, age 40; Osborne, age 21; Lenore, age 10; Glen, age 8; Wayne [sic], age 6; and

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**Notes: (cont.)**

Lowell, age 2. Their home was worth \$10,000 with a \$6,700 mortgage. R. P. Andreas carried \$10,000 worth of insurance on the home. R. P. Andreas had attended college for 4 years, Lydia for 1. Enumerator and date were not shown in the Census records on Ancestry.com.

In 1961, Osborn Andreas was Chairman and Chief Executive Officer of Pentron in Chicago, Cook Co., Illinois. Source: *Chicago Tribune (Chicago, Illinois)*, 2 Aug 1961 via Newspapers.com.

In 1967, Osborn Andreas was under indictment with 5 other men for rigging the price of the stock of Pentron Electronics Corp. On 4 Oct 1967, he was found in his home in Chicago, shot to death by his own hand. His wife Margot found him. He was reported despondent over financial affairs. He had resigned all his connections with Pentron by 1965. He reportedly had a coffee vending business in Dolton, Cook Co., Illinois, President of Monroe Acceptance Corp. and treasurer of a farm implement business in Neodesha, Wilson Co., Kansas. Source: *Chicago Tribune (Chicago, Illinois)*, 5 Oct 1965, Page 24, via Newspapers.com.

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**Albert M. Andreas**

The 1938 City Directory of Cedar Rapids, Linn Co., Iowa listed Albert Andreas as Vice-President and Treasurer of Honeymead Products Co. His residence was 1900 Linden Dr. S. E. in Cedar Rapids. His wife's name was Lola. Source: Polk's Cedar Rapids (Linn Co., Iowa) City Directory, Vol. 1938. R. L. Polk & Co, Publishers, 431 Howard St., Detroit, Michigan via Ancestry.com

The 1939 City Directory of Cedar Rapids, Linn Co., Iowa, included a listing similar to that in the 1938 Directory for Albert M and Lola Andreas. The family had moved to Lisbon, Linn Co., Iowa, and their telephone number was 101. Source: Polk's Cedar Rapids (Linn Co. Iowa) City Directory, Vol. 1939. R. L. Polk & Co., Publishers, 431 Howard St., Detroit, Michigan via Ancestry.com.

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**Lenora "Lenore" Jeanette Andreas**

Birth: Father's Surname: Andreas; Mother's Surname: Stoltz. The name she was given at birth was Lenora. Most records when she was an adult call her Lenore. Her birth on 21 July 1913 in Nobles Co. was shown in the Minnesota, Birth Index, 1900-1934. Certificate 1913-19493 via Ancestry.com and the Minnesota Historical Society Birth Index.

Marriage: Lenore Jeanette Andreas married 3 times. Her first marriage was to George G. Schunknedt on 21 April 1932 in Mount Vernon, Iowa. Source: Iowa Marriage Records, 1880-1945 via Ancestry.com. About 1935, Lenore married Harlon Sober. They had two daughters, Sharon, born about 1936, and Susan, born about 1939. (1940 United States Census for Cedar Rapids, Iowa). Lenore and Harlon were divorced circa 1947-1948.

On 23 August 1948 Lenore married Marvin Steele in Dixon, Lee Co., Illinois.

Lenore Jeanette (Andreas) (Schunknedt) (Sober) Steele died 9 May 1969 in Miami-Dade County, Florida. Her record of death was published 10 May 1969 in both the Miami *Herald* and Miami *News*. She was the wife of Marvin Steele. No burial record has been found. Secondary Source: Florida Death Index 1877-1998 states she died in May 1969.

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**Glen A. Andreas**

The 1938 City Directory of Cedar Rapids, Linn Co., Iowa listed Glen Andreas working at Honeymead Products Co. His wife's name was Vera. They lived at 2231 Meadowbrook Dr. S. E. in Cedar Rapids. Source: Polk's Cedar Rapids (Linn Co., Iowa) City Directory, Vol. 1938. R. L. Polk & Co., Publishers, 431 Howard St., Detroit, Michigan via Ancestry.com

The 1939 City Directory of Cedar Rapids, Linn Co., Iowa listed a similar entry for Glen A. Andreas and his wife Vera. He was Secretary of Honeymead Products Co., They resided at the same address. Source: Polk's Cedar Rapids (Linn Co., Iowa) City Directory, Vol. 1939. R. L. Polk & Co., Publishers, 431 Howard

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**Notes: (cont.)**

St., Detroit, Michigan via Ancestry.com

Glen A. Andreas was recorded in the 1950 City Directory of Cedar Rapids, Linn Co., Iowa. He was Secretary-Treasurer of Pilgrim Mutual Insurance Co. His wife's name was not listed. He resided in Pella, Linn Co., Iowa. Source: Polk's Cedar Rapids (Linn Co., Iowa) City Directory, 1950, Publisher R. L. Polk & Co., 500 Karbach Block, Omaha 2, Nebraska.

Glen A. Andreas was recorded in the 1951 City Directory of Cedar Rapids, Linn Co., Iowa. He was Secretary-Treasurer of Midwest Underwriters and Pilgrim Mutual Insurance Co. His wife's name was Vera A. They resided in Pella, Linn Co., Iowa. Source: Polk's Cedar Rapids (Linn Co., Iowa) City Directory, 1950, Publisher R. L. Polk & Co., 500 Karachi Block, Omaha 2, Nebraska.

In the 1953 City Directory of Cedar Rapids, Linn Co., Iowa was recorded Glen A. Andreas and wife Vera. He was secretary-treasurer of the Pilgrim Mutual Insurance Co. They were residing in Pella, Linn Co., Iowa. Source: Polk's Cedar Rapids (Linn Co., Iowa) City Directory, 1953, Publisher R. L. Polk & Co., 500 Karbach Block, Omaha 2, Nebraska.

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**Dwayne Orville Andreas**

The Minnesota Birth Records record the birth of Dwayne Orville Andreas on 4 Mar 1918 in Nobles Co., Minnesota. Mother's name Stoltz. Source: Minnesota, Birth Index, 1900-1934 [database on-line]. Provo, Utah: via Ancestry.com.

For census information on the family of Dwayne, see the 1910-1930 Census data included in the notes regarding Dwayne's father, Reuben P. Andreas.

The 1938 Cedar Rapids, Linn Co., Iowa listed Dwayne Andreas as Credit Manager, no company listed. His wife's name was Bertha. They resided at 2636 Country Club Parkway S. E. in Cedar Rapids. Source: Polk's Cedar Rapids (Linn Co., Iowa) City Directory, Vol. 1938. R. L. Polk & Co., Publishers, 431 Howard St., Detroit, Michigan via Ancestry.com

The 1939 City Directory of Cedar Rapids, Linn Co., Iowa included a listing similar to that in the 1938 Directory for Dwayne O and Bertha Andreas with the addition that their telephone number was 2-1660. Source: Polk's Cedar Rapids (Linn Co., Iowa) City Directory, Vol. 1939. R. L. Polk & Co, Publishers, 431 Howard St., Detroit, Michigan via Ancestry.com

The 1940 US Census recorded the family of Dwayne Andreas, age 22, and his wife Bertha, age 24, living in Cedar Rapids, Linn Co., Iowa. Dwayne was born in Minnesota, Bertha in Illinois. He had attended one year of college, and she had completed 4 years of high school. He was a Sales Manager of a Livestock Feed company. He had been employed 52 weeks during the previous year and earned in excess of \$5,000 the previous year. In 1935, he had resided in a rural area of Linn Co, Iowa. She had resided in Aurora, Lane Co., Illinois in 1935. Source: 1940 US Census of Cedar Rapids, 5th Ward, Block 132-33, Linn Co., Iowa. Supervisor's District 2; Enumeration District 57-45A. Enumerated 12 Apr 1940 by Glen D. Cochran. Sheet 11B via Ancestry.com.

Dwayne Andreas divorced Bertha on 19 June 1948 in Minneapolis, Hennepin Co., Minnesota. Published in the *Star-Tribune (Minneapolis, Hennepin Co., Minnesota, 28 July 1951, Page 22, Column 1.*

Dwayne Andreas was recorded in the 1950 City Directory of Cedar Rapids, Linn Co., Iowa. His wife's name was Bertha. He and Bertha resided at 321 Sinclair Ave., SE in Cedar Rapids. Source: Polk's Cedar Rapids (Linn Co., Iowa) City Directory, 1950, Publisher R. L. Polk & Co., 500 Karbach Block, Omaha 2, Nebraska.

Supported Humphrey for Vice President. *Minneapolis Star (Minneapolis, Minnesota), 29 Jan 1966, Page 3.*

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**Notes: (cont.)****Lowell Willard Andreas**

Lowell Willard Andreas's Birth and Death: Fiindagrave.com Memorial # 125851188. Tombstone photo is on the website.

Lowell supported Humphrey for Vice President. Source: Minneapolis Star (Minneapolis, Minnesota), 29 Jan 1966, Page 3.

For census data on the family of Lowell Andreas, see the 1925-1930 Census data included in the notes for his father, Reuben Andreas.

In the 1948 City Directory of Mankato, Blue Earth Co., Minnesota, Lowell W. Andreas, wife Nadine B., were recorded. He was President-Manager of the Mankato Processing Co. They reside at 1343 N. 4th in Mankato Source: 1948 Polk City Directory of Mankato, Blue Earth Co., Minnesota, Vol. 1948. Publisher R. L. Polk & Co., 500 Lowell W. Andreas Mankato, MN Lowell W. Andreas, 87, died Saturday, April 4, 2009 at his Mankato home. Karbach Block, Omaha 2, Nebraska

Lowell W. Andreas was recorded in the 1950 City Directory of Cedar Rapids, Linn Co., Iowa. He was Vice President of Honeymead Products Co. His wife's name was not listed. He lived in Mankato, Linn Co., Iowa. Source: Polk's Cedar Rapids (Linn Co., Iowa) City Directory, 1950, Publisher R. L. Polk & Co., 500 Karbach Block, Omaha 2, Nebraska.

On 7 April 2009, the newspaper in Naples, Florida carried the obituary of Lowell Andreas. His birth was 24 Feb 1922; Death, 4 April 2009. Spouse, Nadine Betty Hamilton. Children: David Andreas and wife Debra of Golden Valley, Pamela Andreas Lee Stisser. Parents: R. P. Andreas and Lydia (Schutz) Andreas. [sic]. "Lowell W. Andreas Mankato, MN Lowell W. Andreas, 87, died Saturday, 4 April 2009 at his Mankato home. A memorial service will be held at 3:00 p.m. Thursday at First Presbyterian Church in Mankato. Pastor John Anderson, from Bay Presbyterian Church in Bonita Springs, FL, will officiate the service. Private burial will be in Glenwood Cemetery. There will be a reception and a time to visit immediately following the service. ". Source: Naples [Florida] Daily News, 7 April 2009. Naples, Florida.

Lowell W. Andreas enlisted in the United State military on 24 Feb 1935. Source: U.S., Department of Veterans Affairs BIRLS Death File, 1850-2010 via Ancestry.com.

The 1944 City Directory of Des Moines, Iowa, recorded Lowell W. Andreas and wife, Nadine B. Andreas, living in Des Moines 2421 47th. He was in the United States Army. Source: Polk's Mankato [Blue Earth Co.], Minnesota. Vol. 1944. R. L. Polk & Co., Publishers, 500 Karbach Block, Omaha 2, Nebraska.

In the 1948 City Directory of Mankato, Blue Earth Co., Minnesota, recorded Lowell W. Andreas living at 1343 N. 4th. He was President-Manager of the Mankato Processing Co. Source: Polk's Mankato [Blue Earth Co., Minnesota], Vol. 1948. R. L. Polk & Co., Publishers, 500 Karbach Block, Omaha 2, Nebraska.

In the 1950 City Directory of Mankato, Blue Earth Col, Minnesota, Lowell W. Andreas and wife Nadine B., were living at 1343 N. 4th. He was Vice-President of the Honeymead Products Co. Source: Polk's Mankato (Blue Earth Co., Minnesota) City Directory. Publisher R. L. Polk and Co., 250 Endicott Bldg., St. Paul 1, Minnesota.

## Family in which Dwayne Orville Andreas was a Parent

<b>Husband:</b>	Dwayne Orville Andreas	
Birth:	4 March 1918 in Worthington, Nobles Co., Minnesota	
Marriage:	1935 in St Lucie Co., Florida	
Divorce:	19 June 1948 in Minneapolis, Anoka Co., Minnesota	
Death:	17 December 2016 in Decatur, Macon Co., Illinois	
Burial:	Probably cremated	
Father:	Reuben Peter Andreas	
Mother:	Lydia Barbara Stoltz	
Other Spouses:	Dorothy Inez Snyder (16 December 1947 in Minneapolis, Hennepin Co., Minnesota)	
<b>Wife:</b>	Bertha Benedict	
Birth:	Abt. 1916 in Illinois	
Death:	28 August 1975 in North Bay Village, Florida	
Father:		
Mother:		
Other Spouses:	B. D. Kruidenier	
<b>Children:</b>		
1 F	Name: Terry Lynn Andreas Birth: Abt. 1943 Marriage: 1993 in Manhattan, New York Spouse: John Arthur Hewig Other Spouses: George Randolph Bevis (23 August 1963 in Minnetonka Beach, Hennepin Co., Minnesota) Unknown Herbert-Burns	
2 F	Name: Sandra Ann Andreas Marriage: 9 July 1967 in Washington, D. C. Spouse: William Gerard McMurtrie	

### Notes:

#### **Dwayne Orville Andreas**

- The Minnesota Birth Records record the birth of Dwayne Orville Andreas on 4 Mar 1918 in Nobles Co., Minnesota. Mother's name Stoltz. Source: *Minnesota, Birth Index, 1900-1934* [database on-line]. Provo, Utah: via Ancestry.com.
- For census information on the family of Dwayne, see the 1910-1930 Census data included in the notes regarding Dwayne's father, Reuben P. Andreas.
- The 1938 Cedar Rapids, Linn Co., Iowa City Directory listed Dwayne Andreas as Credit Manager, no company listed. His wife's name was Bertha. They resided at 2636 Country Club Parkway S. E. in Cedar Rapids. Source: *Polk's Rapid City (Linn Co., Iowa) City Directory*, Vol. 1938. R. L. Polk & Co., Publishers, 431 Howard St., Detroit, Michigan via Ancestry.com
- The 1939 City Directory of Cedar Rapids, Linn Co., Iowa included a listing similar to that in the 1938 Directory for Dwayne O and Bertha Andreas with the addition that their

telephone number was 2-1660. Source: *Polk's Rapid City (Linn Co., Iowa) City Directory*, Vol. 1939. R. L. Polk & Co, Publishers, 431 Howard St., Detroit, Michigan via Ancestry.com

- The 1940 US Census recorded the family of Dwayne Andreas, age 22, and his wife Bertha, age 24, living in Cedar Rapids, Linn Co., Iowa. Dwayne was born in Minnesota, Bertha in Illinois. He had attended one year of college, and she had completed 4 years of high school. He was a Sales Manager of a Livestock Feed company. He had been employed 52 weeks during the previous year and earned in excess of \$5,000 the previous year. In 1935, he had resided in a rural area of Linn Co, Iowa. She had resided in Aurora, Lane Co., Illinois in 1935. Source: 1940 US Census of Cedar Rapids, 5th Ward, Block 132-33, Linn Co., Iowa. Supervisor's District 2; Enumeration District 57-45A. Enumerated 12 Apr 1940 by Glen D. Cochran. Sheet 11B via Ancestry.com.

- Dwayne Andreas divorced Bertha on 19 June 1948 in Minneapolis, Hennepin Co., Minnesota. Published in the *Star-Tribune (Minneapolis, Hennepin Co., Minnesota)*, 28 July 1951, Page 22, Column 1.

- Dwayne Andreas was recorded in the 1950 City Directory of Cedar Rapids, Linn Co., Iowa. His wife's name was Bertha. He and Bertha resided at 321 Sinclair Ave., SE in Cedar Rapids. Source: *Polk's Rapid City (Linn Co., Iowa) City Directory, 1950*, Publisher R. L. Polk & Co., 500 Karbach Block, Omaha 2, Nebraska.

- Dwayne supported Humphrey for Vice President and also contributed to the campaign of Richard Nixon. *Minneapolis Star (Minneapolis, Minnesota)*, 29 Jan 1966, Page 3.

### **Bertha Benedict**

- Bertha (Benedict) (Andreas) t was also the wife of Mrs. Robert Lebel. *Ohio Divorce Abstracts*, 3 May 1968.

### **Terry Lynn Andreas**

- In a newspaper article regarding her father, Dwayne O. Andreas, Terry Lynn Andreas was called Terry Lynn Bevis. Source: *Herald and Review (Decatur, Linn Co., Illinois)*, 31 Jan 1999, Page 5 via Newspapers.com.

- In the 2016 obituary of Dwayne O. Andreas, it lists his children including Terry Andreas and her husband, John Hewig, of New York, NY. Source: *Herald and Review (Decatur, Linn Co., Illinois)*, 20 Nov 2016, Page D3 via Newspapers.com.

- In 1974, Terry's name was Terry Andreas Bevis.

- In 1986, Terry was called Terry Herbert-Burns in a newspaper article about her father. Source: *Herald and Review (Decatur, Illinois)*, 26 Oct 1986, Page 5, Col. 5.

- In a 2 Nov 1987 newspaper article regarding management changes at National City Bankcorp in Minneapolis, Terry Herbert-Burns was to replace a retiring board member. Lowell W. Andreas was retiring as Chairman and Chief Executive Officer. It is probable that Terry Herbert-Burns was Lowell W. Andreas's niece. Source: *Star Tribune (Minneapolis, Minnesota)*, 2 Nov 1987.

- In a newspaper article published on 11 Jan 1988, Terry Andreas Herbert Burns was participating in a lecture. Her title was Founder and Board Chairman of School for Field Studies

with branches in Kenya, Africa. Source: *The Herald-Palladium (St. Joseph, Missouri)*, 11 Jan 1988.

- Because of the previous two articles, it is probable that Terry Andreas married either one man named Herbert Burns or two men, one named Herbert and one named Burns. No marriage record could be found for this study. The marriage(s) took place between her first marriage to George Randolph Bevis.
- A marriage license was issued to Terry Andreas and John Arthur Hewig in 1994 in Manhattan, New York. Source: *New York Marriage License Index, 1907-1995* via Ancestry.com.

### **Sandra Ann Andreas**

- Sandra Andreas was married to William Gerard McMurtrie on 9 July 1967 in Washington, D. C. They were married in the Holy Trinity Catholic Church. Published 11 July 1967, *Star-Tribune (Minneapolis, Minnesota)*, Page 13, Columns 6-7. She was the daughter of Dwayne Orville Andreas and Mrs. Bastain Daniel Kruidenier. Mrs. Kruidenier was the former Barbara (Benedict) Andreas.
- Sandra served as the secretary for Hubert Humphrey in Washington, D. C. *Boston Globe (Boston, Massachusetts)*, 16 June 1978, Page 47, Column 4.
- Nominated to fill a position on the Board of Directors of ADM when he father retired. *Lincoln Journal Star (Lincoln, Nebraska)*. 14 Aug 2001, Page 4, Column 1. She was not re-nominated in 2003. *Herald and Review (Decatur, Illinois)* 6 Nov 2003. Page 1, Column 1.
- Sandra McMurtrie and a friend who worked for Catholic Relief Services went to India in 1981. In Calcutta they met the celebrated nun, Mother Theresa. From then on, Mrs. McMurtrie was one of her most steadfast disciples and coworkers. Source: Kahn, E. J., *Supermarketer to the World*, New York: Warner Books, 1991. Page 50.

## Second Family in which Dwayne Orville Andreas was a Parent

<b>Husband:</b>		Dwayne Orville Andreas	
Birth:	4 March 1918 in Worthington, Nobles Co., Minnesota		
Marriage:	16 December 1947 in Minneapolis, Hennepin Co., Minnesota		
Death:	17 December 2016 in Decatur, Macon Co., Illinois		
Burial:	Probably cremated		
Father:	Reuben Peter Andreas		
Mother:	Lydia Barbara Stoltz		
Other Spouses:	Bertha Benedict (1935 in St Lucie Co., Florida)		
<b>Wife:</b>		Dorothy Inez Snyder	
Birth:	9 July 1917 in Earlham, Madison Co., Iowa		
Death:	10 October 2012 in Decatur, Macon Co., Illinois		
Burial:	Cremated		
Father:	Raymond Snyder		
Mother:	Leona Mae Simms		
<b>Children:</b>			
1	Name:	Michael Dwayne Andreas	
M	Birth:	30 December 1948 in Decatur, Macon Co, Illinois	
	Marriage:	20 June 1970 in Manhattan, New York	
	Spouse:	Shelley Irene Davidson Suskind	

### Notes:

#### Dwayne Orville Andreas

- The Minnesota Birth Records record the birth of Dwayne Orville Andreas on 4 Mar 1918 in Nobles Co., Minnesota. Mother's name Stoltz. Source: *Minnesota, Birth Index, 1900-1934* [database on-line]. Provo, Utah: via Ancestry.com.
- For census information on the family of Dwayne, see the 1910-1930 Census data included in the notes regarding Dwayne's father, Reuben P. Andreas.
- The 1938 Cedar Rapids, Linn Co., Iowa City Directory listed Dwayne Andreas as Credit Manager, no company listed. His wife's name was Bertha. They resided at 2636 Country Club Parkway S. E. in Cedar Rapids. Source: *Polk's Rapid City (Linn Co., Iowa) City Directory*, Vol. 1938. R. L. Polk & Co., Publishers, 431 Howard St., Detroit, Michigan via Ancestry.com
- The 1939 City Directory of Cedar Rapids, Linn Co., Iowa included a listing similar to that in the 1938 Directory for Dwayne O and Bertha Andreas with the addition that their telephone number was 2-1660. Source: *Polk's Rapid City (Linn Co., Iowa) City Directory*, Vol. 1939. R. L. Polk & Co, Publishers, 431 Howard St., Detroit, Michigan via Ancestry.com
- The 1940 US Census recorded the family of Dwayne Andreas, age 22, and his wife Bertha, age 24, living in Cedar Rapids, Linn Co., Iowa. Dwayne was born in Minnesota, Bertha in Illinois. He had attended one year of college, and she had completed 4 years of high school.

He was a Sales Manager of a Livestock Feed company. He had been employed 52 weeks during the previous year and earned in excess of \$5,000 the previous year. In 1935, he had resided in a rural area of Linn Co, Iowa. She had resided in Aurora, Lane Co., Illinois in 1935. Source: 1940 US Census of Cedar Rapids, 5th Ward, Block 132-33, Linn Co., Iowa. Supervisor's District 2; Enumeration District 57-45A. Enumerated 12 Apr 1940 by Glen D. Cochran. Sheet 11B via Ancestry.com.

- Dwayne Andreas divorced Bertha on 19 June 1948 in Minneapolis, Hennepin Co., Minnesota. Published in the *Star-Tribune (Minneapolis, Hennepin Co., Minnesota)*, 28 July 1951, Page 22, Column 1.

- Dwayne Andreas was recorded in the 1950 City Directory of Cedar Rapids, Linn Co., Iowa. His wife's name was Bertha. He and Bertha resided at 321 Sinclair Ave., SE in Cedar Rapids. Source: *Polk's Rapid City (Linn Co., Iowa) City Directory, 1950*, Publisher R. L. Polk & Co., 500 Karbach Block, Omaha 2, Nebraska.

- Dwayne supported Humphrey for Vice President and also contributed to the campaign of Richard Nixon. *Minneapolis Star (Minneapolis, Minnesota)*, 29 Jan 1966, Page 3.

### **Dorothy Inez Snyder**

- The following information was contained in the Obituary of Dorothy Inez Snyder, second wife of Dwayne O. Andreas. *Herald and Review (Decatur, Illinois)*, 12 Oct 2012, Page 27, Column 1.

- Inez attended Coe College and later graduated from the University of Minnesota. She then earned her Master's Degree in Psychology from Barry University in Miami, Florida.

- She was widely known for her philanthropic activities including the Milliken University Board of Directors, Chairman of the Barry University Board of Directors for 20 years, and the American Red Cross Board of Directors.

### **Michael Dwayne Andreas**

- Marriage: Bride: Shelley Irene Davidson Susskind on 20 Jun 1970. Parents of Groom: Dwayne O. Andreas and Dorothy I. Snyder. Manhattan Certificate # 13300. Marriage took place at the Cathedral of St. John the Devine in Manhattan, New York. Source: *New York, Episcopal Diocese of New York Church Records, 1767-1970*, Manhattan, Cathedral of St. John the Devine, 1957-1970 via Ancestry.com.

- Marriage: *Episcopal Diocese of New York Church Records, 1767-1970* via Ancestry.com. Married at the Cathedral of St. John the Devine.

- Michael joined Archer Daniels Midland Company in 1971 at the age of 23. He became Executive Vice President and ultimately Vice-Chairman before resigning.

- Michael D. Andreas attended Northwestern University in Evanston, Illinois where he was a member of Sigma Alpha Epsilon fraternity. *Northwestern University Yearbook Syllabus 1968, No 84*, Student Publishing Company, Northwestern University, Evanston, Illinois. Page 299.

- Michael D. Andreas and his wife were large donors to United States Senate candidates. *Star-Tribune (Minneapolis, Minnesota)*, 13 July 1978. Page 14, Column 1.

## Family in which Lowell Willard Andreas was a Parent

<b>Husband:</b>		Lowell Willard Andreas	
Birth:	24 February 1922 in Lisbon, Linn Co., Iowa		
Marriage:	30 May 1943 in Cedar Rapids, Linn Co., Iowa		
Death:	4 April 2009 in Mankato, Blue Earth Co., Minnesota		
Burial:	Mankato, Blue Earth Co., Minnesota; Glenwood Cemeterry		
Father:	Reuben Peter Andreas		
Mother:	Lydia Barbara Stoltz		
<b>Wife:</b>		Nadine Betty Hamilton	
Birth:	28 October 1922 in Iowa		
Death:	1 September 2005 in Mankato, Blue Earth Co., Minnesota		
Burial:	Glenwood Cemetery, Mankato, Blue Earth Co., Minnesota		
Father:	Harry Hollace Hamilton		
Mother:	Pearl Dessie Wright		
<b>Children:</b>			
1	Name:	Pamela Jane Andreas	
F	Birth:	16 January 1945 in Cedar Rapids, Linn Co., Iowa	
	Marriage:	13 August 1966 in Minnesota	
	Death:	17 November 2002 in Galesburg, Knox Co., Illinois	
	Burial:	Mankato, Blue Earth Co., Minnesota	
	Spouse:	Richard Delane Lee	
	Other Spouses:	Lavirn Edgar Stisser	
2	Name:	David Lowell Andreas	
M	Birth:	1 March 1949 in Ramsey, Anoka Co., Minnesota	
	Marriage:	20 June 1985 in Hennepin Co., Minnesota	
	Death:	15 January 2019 in Islamorada, Monroe Co., Florida	
	Spouse:	Debra A. Kelley	

### Notes:

#### Lowell Willard Andreas

Lowell Willard Adnreas's Birth and Death: Fiindagrave.com Memorial # 125851188. Tombstone photo is on the website.

Lowell supported Humphrey for Vice President. Source: Minneapolis Star (Minneapolis, Minnesota), 29 Jan 1966, Page 3.

For census data on the family of Lowell Andreas, see the 1925-1930 Census data included in the notes for his father, Reuben Andreas.

In the 1948 City Directory of Mankato, Blue Earth Co., Minnesota, Lowell W. Andreas, wife Nadine B., were recorded. He was President-Manager of the Mankato Processing Co. They reside at 1343 N. 4th in Mankato Source: 1948 Polk City Directory of Mankato, Blue Earth Co., Minnesota, Vol. 1948. Publisher R. L. Polk & Co., 500 Lowell W. Andreas Mankato, MN Lowell W. Andreas, 87, died Saturday, April 4, 2009 at his Mankato home. Karbach Block, Omaha 2, Nebraska

Lowell W. Andreas was recorded in the 1950 City Directory of Cedar Rapids, Linn Co., Iowa. He was Vice President of Honeymead Products Co. His wife's name was not listed. He lived in Mankato, Linn Co., Iowa. Source: Polk's Rapid City (Linn Co., Iowa) City Directory, 1950, Publisher R. L. Polk & Co., 500 Karbach Block, Omaha 2, Nebraska.

On 7 April 2009, the newspaper in Naples, Florida carried the obituary of Lowell Andreas. His birth was 24 Feb 1922; Death, 4 April 2009. Spouse, Nadine Betty Hamilton. Children: David Andreas and wife Debra of Golden Valley, Pamela Andreas Lee Stisser. Parents: R. P. Andreas and Lydia (Schutz) Andreas. [sic].

Source: *Polk's Mankato [Blue Earth Co., Minnesota]*, Vol. 1948. R. L. Polk & Co., Publishers, 500 Karbach Block, Omaha 2, Nebraska.

- Lowell W. Andreas was recorded in the 1950 *City Directory of Cedar Rapids, Linn Co., Iowa*. He was Vice President of Honeymead Products Co. His wife's name was not listed. He lived in Mankato, Linn Co., Iowa. Source: *Polk's Rapid City (Linn Co., Iowa) City Directory*, 1950, Publisher R. L. Polk & Co., 500 Karbach Block, Omaha 2, Nebraska.

- In the 1950 City Directory of Mankato, Blue Earth Col, Minnesota, Lowell W. Andreas and wife Nadine B., were living at 1343 N. 4th. He was Vice-President of the Honeymead Products Co. Source: *Polk's Mankato (Blue Earth Co., Minnesota) City Directory*. Vol. 1950. Publisher R. L. Polk and Co., 250 Endicott Bldg., St. Paul 1, Minnesota.

- Lowell supported Hubert Humphrey for Vice President. Source: *Minneapolis Star (Minneapolis, Minnesota)*, 29 Jan 1966, Page 3.

- On 7 April 2009, the newspaper in Naples, Florida carried the obituary of Lowell Andreas. His birth was 24 Feb 1922; Death, 4 April 2009. Spouse, Nadine Betty Hamilton. Children: David Andreas and wife Debra of Golden Valley, Pamela Andreas Lee Stisser. Parents: R. P. Andreas and Lydia (Schutz) Andreas. [sic]. "Lowell W. Andreas Mankato, MN Lowell W. Andreas, 87, died Saturday, April 4, 2009 at his Mankato home. A memorial service will be held at 3:00 p.m. Thursday at First Presbyterian Church in Mankato. Pastor John Anderson, from Bay Presbyterian Church in Bonita Springs, FL, will officiate the service. Private burial will be in Glenwood Cemetery. There will be a reception and a time to visit immediately following the service. ". Source: *Naples [Florida] Daily News*, 7 April 2009. Naples, Florida.

### **Nadine Betty Hamilton**

In 1991, Nadine Andreas was the owner of race horses, one of which won the eight race at Canterbury Downs in Minnesota. Source: *Star Tribune (Minneapolis, Minnesota)* 26 Aug 1991, Page

### **Pamela Jane Andreas**

- Birth Date, place and death date, place. Source: United States, *Social Security Applications and Claims Index*, 1936-2007 via Ancestry.com.

- Pamela Jane Andreas was baptized on 16 Jan 1945 at the Zion Presbyterian Church, Mankato, Linn Co., Illinois, the daughter of Lowell Andreas and his wife. Source: *United States, Presbyterian Church Records, 1701-1970* via Ancestry.com.

- Pamela Jane's engagement to Richard Delane Lee was announced 2 Oct 1965 in Minneapolis, Hennepin Co, Minnesota. Source: *Star Tribune (Minneapolis, Minnesota)*, 2 Oct 1965, Page 5 via Newspapers.com.

- Pamela Jane married Richard Delane Lee on 13 Aug 1966 in Minnesota. Source: *Minnesota Marriage Index, 1958-2001* via Ancestry.com.

- On 19 Jul 1974, in a newspaper article, Pamela's name was Pamela Andreas Lee. Source: *The Minneapolis Star (Minneapolis, Minnesota)*, 19 Jul 1974, Page 29 via Newspapers.com.

- Pamela's name was Pamela Jane Andreas from Mar 1962 to 10 Dec 1975. On that date she registered as Pamela Jane Lee. On 2 April 1984, her name changed to Pamela Andreas Stisser. On 10 Dec 2002, she changed her name to Pamela J. Stisser, all on the Social Security system. Source: *United States, Social Security Applications and Claims Index, 1936-2007* via Ancestry.com.

- Pamela Jane Andreas Stisser died on 17 Nov 2002 in Galesburg, Knox Co., Illinois. She was the daughter of Lowell Willard and Nadine Betty Andreas. She was the wife of Lavirn Edgar Stisser. Source: findagrave.com. [Note: this entry on findagrave.com does not represent a burial, but rather a memorial to Pamela Jane. Her burial site, if any, is unknown.]

### David Lowell Andreas

- David Lowell Andreas, son of Lowell W. Andreas and his wife, Nadine, was born in Ramsey, Minnesota, on 1 Mar 1949. Source: *Minnesota, Birth Index, 1935-1995* via Ancestry.com.

- David Lowell Andreas was baptized on 1 Mar 1959 at Zion Presbyterian Church (Welsh) in Mankato, Blue Earth Co., Minnesota. Source: *United States, Presbyterian Church Records, 1701-1970* via Ancestry.com.

- David L. Andreas and Debra A. Kelley were married 20 Jun 1985 in Hennepin County, Minnesota. Source: *Minnesota, Marriage Index, 1958-2001* via Ancestry.com.

- Although David Andreas was the top official in National City Bank, his training was that of an anthropologist. Source: *Star Tribune (Minneapolis, Minnesota)* 25 Jan 1993, Page 28, Col. 1.

- National City Bank of Minneapolis, Minnesota, Board of Directors named David Lowell Andreas as President of the Bank in 1994. Source: *Star Tribune (Minneapolis, Minnesota)* 22 Sep 1994, Page 42, Col. 4.

- David was elected to the Board of National City Bancorp of Minneapolis, Minnesota in 1998. Source: *Star Tribune (Minneapolis, Minnesota)*, 27 April 1998 via Newspapers.com.



# SOYINFO CENTER

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# HISTORY OF ADM (ARCHER DANIELS MIDLAND COMPANY) AND THE ANDREAS FAMILY'S WORK WITH SOYBEANS AND SOYFOODS

1. *Mower County Transcript (Lansing, Minnesota)*. 1900. News in Minnesota. Sept. 26. p. 8

• **Summary:** “The Midland Linseed Oil company of Minneapolis, having a capital stock of \$400,000, has filed articles of incorporation with the secretary of state. The work of the company will be the manufacturing of linseed oil and other products of flax seed, the buying, selling and shipping of flax seed and its products.”

Note 1. This is the earliest article seen (July 2020) in the [www.newspapers.com](http://www.newspapers.com) that mentions “Midland Linseed.”

Note 2. This is the earliest document seen (July 2020) concerning the early history of Archer Daniels Midland Co.

2. *Chicago Tribune (Chicago, Illinois)*. 1900. Financial notes: Oct. 2. p. 9.

• **Summary:** “A corporation known as the Midland Linseed Oil company has been incorporated at Minneapolis to compete with the American Linseed Company, the trust.”

3. *Sterling Gazette (Sterling, Illinois)*. 1902. A double wedding: Daughters of Mr. and Mrs. Bernard Stoltz married to well known young men. Nov. 28. p. 1.

• **Summary:** “A pretty double wedding was solemnized last evening at eight o'clock at the home of Mr. and Mrs. Bernard Stoltz, in which two of their daughters took the marriage vows. The ceremony was performed by Rev. Mr. Keagle of Trinity Evangelical church, uniting the lives of Miss Catherine Stoltz and Paul Jamison of Burt, Iowa, Miss Lydia Stoltz and Reuben Andreas of Prairieville. The ceremony was performed in a beautifully decorated corner of the parlor. After the ceremony an elaborate wedding feast was served. The ceremony was witnessed by about fifty relatives of the contracting parties.

“Mr. and Mrs. Jamison will leave for their home near Burt, Iowa, Sunday evening and will be accompanied by Mr. and Mrs. Andreas. The latter will visit the home of the former for several weeks, and on returning home will go housekeeping at Prairieville.

“The ceremony unites four popular young people. The grooms are well to do young farmers and highly respected in the community where they reside. The brides have been residents of this city for a number of years, and are highly spoken of, and have a host of friends, who extend congratulations on the happy event.”

4. *Calumet News (The) (Calumet, Michigan)*. 1911. Display ad: Midland Linseed Co. Oct. 2. p. 9.

• **Summary:** A prominent rectangular ad with a bold black border.

“Old process crushers. Daily capacity 1,000 barrels Linseed Oil. 350 tons Linseed Cake. I can ship from Minneapolis [Minnesota], Chicago or Green Bay [Wisconsin].

“L.P. Buell

“201 7th St. Calumet, Michigan

“Phone 470-J.”

5. *Wall Street Journal*. 1911. Midland Linseed Oil Co. June 29. p. 5.

• **Summary:** “Mill to cost more than \$600,000 to be built on Jersey side of the Hudson.

“Minneapolis—The Midland Linseed Oil Co., Minneapolis is having plans drawn for a linseed oil mill to be erected on the water front of the New Jersey side of the Hudson river, which will contain 48 presses and will cost between \$600,000 and \$700,000. E.C. Warner, president of the company said it is hoped to have the new oil mill ready for operation by December 1 or January 1.

“The indication points to the necessity for importation of flaxseed in the future in greater quantities than in the past,” said Mr. Warner, “and it is for that reason the mill will be erected on tide water.”

6. Associated Press. 1911. Big oil company formed. Midland Linseed Products Company a five million dollar concern. *Oshkosh Northwestern (Oshkosh, Wisconsin)* Aug. 29. p. 9.

• **Summary:** “Minneapolis, Minnesota, Aug. 29.—The Midland Linseed Products company of Minneapolis, capitalized at \$5,000,000, has been incorporated by E.C. Warner, Walter D. Douglas, George F. Piper and Arthur L. Bisbee. It means practically that the Midland Linseed Oil Company of Minneapolis will increase its capital stock from \$2,000,000 to \$5,000,000. The company is now engaged in the construction of a new oil mill in New York which E.C. Warner said today is the reason for the increase of the capitalization.”

Note: This is the earliest document seen (July 2020) showing that the company has changed its name to Midland Linseed Products company from Midland Linseed Oil Co.

7. *Chicago Tribune (Chicago, Illinois)*. 1911. Oil concern capital now \$5,000,000. Aug. 29. p. 12.

• **Summary:** “Minneapolis, Minnesota. Aug. 28.—The Midland Linseed Products Company of Minneapolis, capitalized at \$5,000,000, has been incorporated by E.C. Warner, Walter D. Douglas, George F. Piper and Arthur L. Bisbee. It means practically that the Midland Linseed Oil company of Minneapolis will increase its capital stock from \$2,100,000 to \$5,000,000.”

8. Minnesota Historical Society. 1913. Birth of Lenora Jeanette Andreas.

• **Summary:** Birth date: July 21, 1913. County of birth: Nobles County. Related names: Stoltz.

Note: Her mother’s name was Lydia Barbara Stoltz. Her father’s name was Reuben Peter Andreas. She liked to be called “Lenore.”

9. *New York Times*. 1920. Sues to dissolve linseed oil trust: Government charges prices jumped from 50 cents a gallon in 1916 to \$1.80 in 1918. Assails “open price plan.” Says unlawful combination has kept price at higher figure and destroyed competition. July 1. p. 23.

• **Summary:** “Special to *The New York Times*.”

“Suit under the Sherman anti-trust law was instituted today by the Department of Justice against the so-called Linseed Oil Trust.

“The bill of complaint, as filed in equity today by the Government today in the District Court of the United States for the Northern District of Illinois, at Chicago, charges that in 1916 the defendants’ wholesale selling prices a gallon for linseed oil were the neighborhood of 50 cents; that in October, 1918, the prices had increased to about \$1.80 a gallon; and that since then they would have fallen to lower levels if competition among the defendants had not been restricted, as charged in the complaint.

“A statement from the Department of Justice today said:

“It is charged that, in October, 1918, and ever since, the defendants have engaged in an unlawful combination and conspiracy to suppress competition among themselves in selling linseed oil, to enhance their prices for such oil, and to prevent the lowering of such prices—by means of a so-called ‘open price plan.’ The complaint shows that this ‘open price plan’ includes the continuous interchange among the defendants of information as to their quotations and as to the prices given by them in actual sales.

“In this connection the Department of Justice refers to its recent suit against members of the so-called ‘open competition plan’ of the American Hardware Manufacturers Association, in which the District Court held that the hardwood manufacturers had violated the law in keeping up prices by means of their ‘plan.’ This includes the continuous interchange of information as to the prices received in actual sales...”

“The twelve defendants are the American Linseed Company and National Lead Company of New York City, Archer-Daniels Manufacturing Company and Midland Linseed Products Company of Minneapolis, Ankeny Linseed Manufacturing Company, Des Moines [Iowa], William O. Goodrich Company, Milwaukee [Wisconsin]; Hirst & Begley Linseed Company, Chicago; Red Wing Linseed Company, Red Wing, Minnesota; Sherwin-Williams Company, Cleveland [Ohio]; Toledo Seed & Oil Company, Toledo [Ohio]; Mann Brothers Company, Buffalo [New York]; the Armstrong Bureau of Related Industries of Chicago, and Julian Armstrong and Montagu Ferry, both doing business under the name of the said bureau.”

Note: This is the earliest of only 3 documents seen (July 2020) in [www.newspapers.com](http://www.newspapers.com) that incorrectly uses the name “Archer-Daniels Manufacturing Company” to refer to the “Archer-Daniels Linseed Company.”

10. *Wall Street Journal*. 1920. Newspaper specials. July 2. p. 7.

• **Summary:** “Department of Justice institutes suit under Sherman [Antitrust] law against American Linseed Co. and National Lead Co. of New York City, Archer-Daniels Manufacturing Co. and Midland Linseed Products Co. of Minneapolis, Ankeny Linseed Manufacturing Co., Des Moines [Iowa], William O. Goodrich Co., Milwaukee [Wisconsin]; Hirst & Begley Linseed Co., Chicago; Red Wing Linseed Co., Red Wing, Minnesota; Sherwin-Williams Co., Cleveland [Ohio]; Toledo Seed & Oil Co., Toledo [Ohio]; Mann Brothers Co., Buffalo [New York]; and Armstrong Bureau of Chicago. Government charges defendants have engaged in unlawful combination since October, 1918, to suppress competition among themselves in selling linseed oil and to maintain price of about \$1.80 a gallon, compared with 50 cents a gallon in 1916.”

11. *Wausau Daily Herald (Wausau, Wisconsin)*. 1923. Linseed mill control in huge merger. April 23. p. 10.

• **Summary:** “Minneapolis, Minnesota, April 23—Merger of the Archer of the Archer-Daniels Linseed company and the Midland Linseed Products company of Minneapolis into a corporation with total assets exceeding \$11,000,000 and which will control about thirty-five per cent of the linseed mill capacity of the United States, became known here today.”

12. Goldman, Sachs & Co.; Lehman Brothers; Lane, Piper & Jaffray, Inc., 1923. \$5,000,000: Archer-Daniels-Midland Company (To be presently Incorporated). Seven Per Cent Cumulative Preferred Stock (Ad). *Cincinnati Enquirer (Cincinnati, Ohio)*. April 24. p. 14.

• **Summary:** “Preferred as to Assets and Dividends.

“Redeemable in whole or in part at \$115 per share and accrued dividends.

“Holders of Preferred Stock have the right to buy from the company at any time up to May 1, 1926, at the rate of \$50 per share, one share of common stock for each two shares of preferred stock held.

“On or before January 1, 1925, and annually thereafter from out of surplus and net earnings, at least three per cent of the largest amount of par value of the Preferred Stock that shall have been at any one time outstanding, shall be acquired by the company by redemption or by purchase at not to exceed \$115 per share and accrued dividends.

“Application will be made in due course to list both the Preferred and Common Stocks on the New York Stock Exchange.

“The Seaboard National Bank of the City of New York—Transfer Agent

“National Bank of Commerce in New York—Registrar

“Capitalization:

“Seven per cent cumulative preferred stock (Par value \$100). Dividends payable quarterly, cumulative from May 1, 1923. To be presently authorized: \$5,000,000. To be presently issued: \$5,000,000

“Common stock (No par value). To be presently authorized: 225,000 shares. To be presently issued: 225,000 shares

“Information in regard to this issue and the new company is given in a letter from Mr. J.W. Daniels, President of the Archer-Daniels Linseed Company, who will be President of the new company, copies of which may be obtained from the undersigned, and which he has summarized as follows:

“Business and Management: The Archer-Daniels Linseed Company and the Midland Linseed Products Company started in business more than twenty years ago and both have grown steadily. The new company will take over the business and properties of the Archer-Daniels Linseed Company and will own all the stock of the Toledo Seed and Oil Company and of the Dellwood Elevator Company, Inc., except directors’ qualifying shares. It will at the same time become the owner of all of the plants of the Midland Linseed Products Company, which company, however, will retain the operation of the plants for its own account until July 1st next in order to liquidate its commitments. The new company will then have the largest capacity for linseed crushing in the world and will operate as a unit the adjacent mills of the Archer-Daniels Linseed Company and the Midland Linseed Products Company at Minneapolis, Toledo [Ohio], and Edgewater, New Jersey, as well as the plants at Chicago and Buffalo [New York]. Substantial economies are expected to follow the consolidation.

“The new company will be managed by those who have been primarily responsible for the past success of the Archer-Daniels Linseed Company.

“Sales and Profits: The net sales and net profits of the Archer-Daniels Linseed Company. The Toledo Seed and

Oil Company, the Dellwood Elevator Company, Inc., and the Midland Linseed Products Company. before deducting Federal income and profits taxes paid but after giving effect to Federal taxes at the present rates, for the six years and six months ending March 31, 1923, as certified by Messrs. Price, Waterhouse & Co., Public Accountants, were as follows:”

A table is shown with three columns: (1) Fiscal period or year ending Aug. 31 or Sept. 30; (2) Net sales; (3) Net profits before deducting Federal income and profits taxes paid but after giving effect to taxes at present rates.

“1917—\$31.775 million—\$1.43 million

“1918—\$41.042 million—\$0.731 million

“1919—\$42.571 million—\$1.94 million

“1920—\$58.580 million—\$2.817 million

“1921—\$36.068 million—\$0.101 million

“1912—\$30.513 million—\$1.04 million

“Six months ending March 31, 1923: net sales \$18.909 million—net profits in excess of 1.00 million

“The average of these earnings for the last six years is in excess of three and three quarters times the annual dividend requirement upon the issue of Preferred Stock, and the earnings for the last six months are at the rate of more than five and one half times such dividend requirement.

“Business for the past six months has been active and profitable as shown by earnings. Conditions surrounding the industry are most satisfactory. Demand for the products is very strong. Plants are booked to capacity as far ahead as the company is willing to sell and a prosperous year seems assured.

“Assets: The Balance Sheet of the new company as of March 31, 1923, certified by Messrs. Price, Waterhouse & Co., Public Accountants, after giving effect to the issue of its capital stock, shows tangible assets of \$14,995,998.44, of which \$7,407,054.66 are current assets, against current liabilities of \$4,407,054.66. There is no funded debt.

“We offer \$4,750,000 of the above stock for subscription, subject to allotment, when, as and if issued and accepted by us, at:

\$98 Per Share and Accrued Dividend.

“This offering is made in all respects subject to the approvals of Messrs. Sullivan & Cromwell, New York, N.Y. for the bankers of...

“April 1923. The above offer is confined to licensed dealers of the Division of Securities, Department of Commerce, State of Ohio.”

Note: This ad and announcement appeared in the *San Francisco Chronicle* (24 April 1923, p. 16) and many other prominent newspapers throughout the USA.

13. *Star Tribune* (Minneapolis, Minnesota). 1923. Linseed firm to issue stock for \$5,000,000: Archer-Daniels-Midland Co. to consolidate two Minneapolis concerns. April 24. p. 22.

• **Summary:** Financing of the Archer-Daniels-Midland company which has been organized to purchase and

consolidate the properties of the Archer-Daniels Linseed company and the Midland Linseed Products company, both of Minneapolis, will be by a \$5,000,000 preferred stock issue which will be offered to the public in Minneapolis and New York today.

“The head offices of the new company which will have tangible assets of approximately \$14,955,998 will be located in Minneapolis. The company will control 35 per cent of the linseed crushing capacity of the country. The combined sales of the parent companies last year approximated \$30,000,000. Mills of the Archer-Daniels company are located at Minneapolis, Buffalo, New York, and Edgewater, New Jersey. Mills of Midland Linseed Products company are located at Minneapolis, Chicago [Illinois], Toledo, Ohio, and Edgewater, New Jersey.

“The officers of the Archer-Daniels company who will become the officers of the new corporation are J.W. Daniels, president; G.A. Archer, and S.M. Archer, vice presidents; Samuel Mair, secretary and L.M. Leffington, treasurer. E.C. Warner has been president of the Midland company since it was organized 20 years ago, will retire from active business.

“The preferred stock of the new company will pay a dividend of 7 per cent... In addition to the preferred stock there will be 225,000 shares of common stock of no par value, in the new company.”

Note: By 26 April 1923 “Archer Dan Midland” had a listing on the “New York Curb Exchange” and was selling for more almost \$40 a share.

14. *Buffalo Courier (Buffalo, New York)*. 1923. Dividends declared. July 11. p. 13.

• **Summary:** “New York, July 10—The Archer-Daniels-Midland Co. has declared an initial dividend of \$0.75 on the preferred stock, payable August 1 to holders of record July 20.”

15. *SoyaScan Notes*. 1923. Early history of soybean crushing, including solvent extraction, in the USA (Overview). Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** The first documented crushing of soybeans in the USA to obtain oil and meal took place in 1911 (probably not in 1910 as some accounts say) at Seattle, Washington. The soybeans were imported from Manchuria by the Albers Brothers Milling Co. and sold to Herman Meyer, who operated a small hydraulic press in Seattle. His establishment was later named Pacific Oil Mills.

The second U.S. crusher, and the first to crush American-grown soybeans, was the Elizabeth City Oil and Fertilizer Co. in Elizabeth City, North Carolina; ordinarily a cottonseed crusher, they began crushing soybeans on 15 Dec. 1915. At that time, North Carolina was America’s leading soybean producing state. By 1916 seven cottonseed mills in North Carolina were crushing soybeans.

Soybeans grown in the Corn Belt were first crushed for oil and meal in 1919 (probably not in 1917 or 1918 as one account says) by the Chicago Heights Oil Manufacturing Co. in Chicago Heights, Illinois (located just south of Chicago). The plant, operated by George Brett and I. Clark Bradley, primarily crushed linseed for oil, but it also crushed soybeans, corn germ and mustard seed. For the first few years the soybeans were crushed using screw presses (expellers) which were generally used for crushing corn germs, but by 1922 they were using hydraulic presses. In Aug. 1923 the company went out of business for lack of soybeans. In 1924 Funk Bros. Seed Co. of Bloomington, Illinois, bought the Chicago Heights plant (Eisenschiml 1929, *American Paint Journal*. March 18. p. 22-30; *Soybean Digest*, Sept. 1944, p. 18-19 and May 1945, p. 15).

The A.E. Staley Manufacturing Co. in Decatur, Illinois, first began crushing soybeans on 30 Sept. 1922. Staley was the first company to construct a plant solely for the purpose of crushing soybeans, the first to crush only soybeans in a U.S. plant, and the first to crush only domestically-grown soybeans in a U.S. plant. Staley was also the only one of the early U.S. soybean crushers that survived under the same ownership for more than several years. Although Staley operated at a loss from 1922 to 1924 due to a shortage of soybeans, in 1925 an upswing began and from that year until 1957 Staley was America’s leading soybean crusher (Forrestal 1982, p. 60-66).

In Aug. 1923 the Piatt County Cooperative Soy Bean Company (soon renamed the Monticello Co-operative Soybean Products Co.) in Monticello, Illinois became the first company in the U.S. to process soybeans using solvent extraction. The plant was scheduled to open for business on 5 Sept. 1923. They used a batch extraction process with benzol as a solvent. The plant was shut down in about 1924-26 (*Orange Judd Farmer*. 1923. July 15, p. 375; *Journal of the American Oil Chemists’ Society*. 1977. March. p. 202A).

The first continuous solvent extraction of soybeans was done by the Eastern Cotton Oil Co. in Norfolk, Virginia, starting in 1924, and using a Bollmann extractor imported from Germany. The plant closed in 1925, being unprofitable (W.H. Goss. 1941. *Chemical and Metallurgical Engineering*. April. p. 80; *Journal of the American Oil Chemists’ Society*. 1977. March. p. 202A). As early as 1926 the William O. Goodrich Company (acquired by the Archer-Daniels-Midland Co. [ADM] in 1928) had been experimenting with solvent extraction of soybean and other vegetable seeds using a Scott batch extraction system.”

Note: In 1929 the Archer-Daniels-Midland Co. started crushing soybeans, using hydraulic presses, at its plants in Chicago (Illinois), and Toledo, Ohio (Marion Cross 1954, p. 40).

In 1933 Robert Boyer and coworkers at the Ford Motor Company developed the Ford Extractor using hexane as a solvent. By 1934 it processed 6 tons of soybeans a day using

a screw inside of a metal tube. It was probably the first to use hexane as a solvent. They had a working extractor in Ford's Industrialized Barn at the 1934 World's Fair in Chicago.

ADM and The Glidden Co. initiated large-scale solvent extraction of soybeans in the USA (Chicago, Illinois) in 1934. ADM purchased from Germany a 150-ton-per day capacity Hildebrandt continuous-flow, counter-current (U-tube) hexane solvent extractor. It began operation in March 1934 on Blackhawk Street in Chicago. It was America's first successful continuous solvent extractor; at the time it was also America's largest and most modern soybean crushing system, and the first to use hexane as a solvent with soybeans. The Glidden Co. purchased an identical Hildebrandt solvent extraction plant from Germany and also installed it in Chicago. It began operation in about Nov. 1934.

In 1937 Central Soya purchased from Germany an even larger continuous solvent unit, a 275-ton-per-day capacity Hansa Muehle extractor, which began operation in November 1937 at Decatur, Indiana.

16. *Arkady Review*. 1924-1974. Serial/periodical. British Arkady Co., Manchester, England. Vol. 1. Jan. 1924. Robert Whymper, editor. From 1925 it appeared 5 times a year. [Eng]

• **Summary:** British Arkady Co. 1938. *Arkady*. p. 6. "Not the least achievement of the Company is the publication of the *Arkady Review*. Originated by Mr. Robert Whymper, the first number saw light in January, 1924; from 1925 it has appeared five times annually. Its mission was to put before the baker articles in simple language, written by those best qualified, on the subjects of wheat, flour, yeast, etc. the raw materials of bread, the fermentation and manufacture of bread, and in general to keep the baker in touch with trade developments. Mr. F.E. Thomas, who has been the editor since the first number, has been successful in securing many able writers."

Letter from Bill Pringle of British Arkady. 1990 May 30. "I believe the *Arkady Review* started publication in 1923. Most of the issues for the early years have been lost. We do have various copies for the 1960s and 1970s. The magazine ceased publication around 1974."

17. **Product Name:** Soy Bean Oil, and Soy Bean Oil Meal.

**Manufacturer's Name:** Goodrich (William O.) Co.

**Manufacturer's Address:** Milwaukee, Wisconsin.

**Date of Introduction:** 1926.

**Ingredients:** Soybeans.

**New Product–Documentation:** Nakamura, Hiroshi; Hieronymus, Thomas A. 1965. "Structure of the soybean processing industry." *Illinois Agric. Exp. Station, Bulletin* No. 706. 84 p. Feb. See p. 3. The William O. Goodrich Company started crushing soybeans in 1926; it was acquired by the Archer-Daniels-Midland Co. in 1928.

Note: This is the only record we can find stating that the William O. Goodrich Co. started processing soybeans in 1926.

18. *Gazette (The) (Cedar Rapids, Iowa)*. 1928. Lisbon band gives concert series. June 8. p. 7.

• **Summary:** "Special to The Gazette Republican. Lisbon, June 8. The Lisbon school band, pictured above, has been engaged to play concerts each Wednesday evening during the summer months here. Organized last fall, the band has made rapid progress..." The personnel follows:... saxophones: Lenore Andreas." drums, George Albright, Glen Andreas.

Note: This is the earliest document seen (July 2020) that mentions Lenore Andreas, elder sister of Dwayne Andreas, or that mentions any member of that Andreas family.

19. Packer Products Co. 1928. Display ad: Honeymead brings results. *Gazette (The) (Cedar Rapids, Iowa)*. Dec. 6. p. 13, cols. 7-8.

• **Summary:** "The high cow in Linn County Test Association No. 2 for November, owned by Myer and Redmond, Robins, Iowa, produced 1,839 pounds of milk and 64.3 pounds of butterfat.

"This cow was fed ground oats and Honeymead 16% Dairy Ration.

"For utmost economy in milk production, feed Honeymead 16% Dairy Rations. If your dealer is unable to supply, write or call us.

Packer Products Co., 601 South Second Street, Cedar Rapids, Iowa. Telephone 1595.

Note: This is the earliest document seen (July 2020) that contains the word "Honeymead."

20. *Wall Street Journal*. 1929. Archer-Daniels-Midland Company. March 11. p. 5.

• **Summary:** Toledo Seed & Oil Company, which is controlled by Archer-Daniels-Midland Co. [it was acquired in 1928 and became a subsidiary], will enlarge its plant in Toledo, Ohio, to make soy bean oil. The company plans to spend \$100,000 in special machinery.

21. *Grain Dealers' Journal*. 1929. Contracting soy beans. 63(5):335. Sept. 10.

• **Summary:** A new contract is being offered by Archer-Daniels-Midland Co., of Minneapolis, Minnesota, to "country grain elevator operators having soy bean growers in their territory." Archer-Daniels has eight crushing plants from New York to Portland, Oregon. The company, which has previously been importing significant quantities of soy bean oil from the Orient, now believes that the potential market for soy bean products is almost unlimited, with a present potential outlet for the products of 20 million bushels. Hence the company is now prepared to contract with dealers, and thru them with growers, to ensure a large supply.

A copy of the “Soy bean dealers contract” and the “Soy bean growers contract” are reproduced.

“In effect and in fact this contract guarantees the grower of soy beans a definite price per bushel, which may encourage farmers to contract acreage that needs rotating and would normally go to oats.”

Note 1. This is the 2nd earliest document seen (May 2009) concerning Archer-Daniels-Midland Co. in connection with soybeans.

Note 2. This is the earliest English-language document seen (Jan. 2003) that uses the term “grain elevator” (or “grain elevators”).

**22. Product Name:** Soy Bean Oil, and Soy Bean Oil Meal.

**Manufacturer’s Name:** Archer-Daniels-Midland Co.

**Manufacturer’s Address:** Toledo, Ohio.

**Date of Introduction:** 1929 September.

**Ingredients:** Soybeans.

**New Product–Documentation:** *Wall Street Journal*.

1929. “Archer-Daniels-Midland Company.” March 11. p. 5. Toledo Seed & Oil Company, which is controlled by Archer-Daniels-Midland Co., will enlarge its plant in Toledo, Ohio, to make soy bean oil. The company plans to spend \$100,000 in special machinery. Why did ADM decide to start crushing soybeans? Note this interesting new release: *Journal News* (Hamilton, Ohio). 1930. April 2. p. 1. “12 sue plant because of dust.” “Toledo, Ohio. April 2.–(AP)—Charging that dust from the plant of the Toledo Seed and Oil Company had made them ill, twelve persons, two of them children, filed suits asking damages amounting to nearly \$120,000 in common pleas court here yesterday. Individual suits range from \$7,500 to \$10,000.” Then in a small article dated 28 May 1931, the same newspaper published the first results of the suit: “Gets jury award.” “Toledo, Ohio. May 28–(AP) A jury yesterday awarded Mrs. Bessie Anderson \$1,800 in her \$10,000 action against the Toledo Seed and Oil Company on the grounds dust from the plant had made her ill.”

Archer-Daniels-Midland Co. 1935. Archer-Daniels-Midland Company new process soybean oil meal (Ad).

*Proceedings of the American Soybean Assoc.* p. 22. Soybean mills at Chicago and Toledo. Soybean Div., Box 603, Milwaukee, Wisconsin.

*National Fire Protection Association Quarterly*. 1943. Oct., p. 164. “Soybean fire plant record.” 1939 May 15, Toledo, Ohio. Soybean oil extraction plant. “This plant, occupied by the Archer-Daniels-Midland Company, had recently been remodeled for the installation of new machinery to extract soybean oil by the expeller method. Construction changes included the erection of two frame iron-clad roof houses, 1 equals 3 and 1 equals 4 stories in height. These were 17 by 45 and 17 by 50 feet in size. Sprinklers had not been installed in the roof houses as the work was to be done by plant mechanics when convenient.

“The fire originated in a metal stack from driers which

evidently had been coated with residue which ignited spontaneously. Sparks from the burning stack set fire to the unsprinklered roof areas, which were destroyed. Only slight damage was done to areas under sprinkler protection. Approximately 3000 bushels of soybeans were damaged, together with 1000 gallons of oil. The loss was \$20,000.”

USDA Northern Regional Research Laboratory. 1943. “Soybean processing mills in the United States.” *USDA Bureau of Agricultural and Industrial Chemistry*. AIC-26. 10 p. Nov. See p. 3. Toledo, Ohio: “Archer-Daniels-Midland Company.” (Large = capacity over 200 tons/day of soybeans).

Cross, Marion E. 1954. *From land, sea, and test tube: The story of Archer-Daniels-Midland Company*. Minneapolis, Minnesota: ADM. 88 p. “During 1929 ADM took two more extremely significant steps toward diversifying its manufacturing activities. Converting the Toledo and Chicago plants to the crushing of soybeans did not seem momentous at the time because the United States was just becoming aware of the potential value of the soybean” (p. 40). A photo (facing p. 40) shows the ADM soybean processing plant in Chicago, Illinois. “When ADM first started to process soybeans in 1929 at its Toledo and Chicago plants, the hydraulic presses that had been used for flaxseed were used for soybeans” (p. 60).

**23. Product Name:** Soy Bean Oil, and Soy Bean Oil Meal.

**Manufacturer’s Name:** Archer-Daniels-Midland Co.

**Manufacturer’s Address:** Chicago, Illinois.

**Date of Introduction:** 1929.

**Ingredients:** Soybeans.

**New Product–Documentation:** USDA Northern Regional Research Laboratory. 1943. “Soybean processing mills in the United States.” *USDA Bureau of Agricultural and Industrial Chemistry*. AIC-26. 10 p. Nov. See p. 1. Chicago, Illinois: “Archer-Daniels-Midland Company.” (Medium = capacity between 50 and 200 tons/day of soybeans). Solvent extraction plant.

Cross, Marion E. 1954. *From land, sea, and test tube: The story of Archer-Daniels-Midland Company*. Minneapolis, Minnesota: ADM. 88 p. “During 1929 ADM took two more extremely significant steps toward diversifying its manufacturing activities. Converting the Toledo and Chicago plants to the crushing of soybeans did not seem momentous at the time because the United States was just becoming aware of the potential value of the soybean” (p. 40). A photo (facing p. 40) shows the ADM soybean processing plant in Chicago, Illinois. “When ADM first started to process soybeans in 1929 at its Toledo and Chicago plants, the hydraulic presses that had been used for flaxseed were used for soybeans” (p. 60).

**24. Product Name:** Super Arkady [Containing Enzyme-Active Full-Fat Soy Flour].

**Manufacturer's Name:** British Arkady Co. Ltd.

**Manufacturer's Address:** Old Trafford, Manchester M16 0NJ, England.

**Date of Introduction:** 1929.

**New Product–Documentation:** Form filled out by Peter Fitch. 1983. British Arkady Co. started doing business in 1921. In 1929 they introduced their first food product containing soy as a major ingredient: Super Arkady, an ingredient for breadmaking containing enzyme active full-fat soy flour. The company now also makes Ardex isolated soy proteins, Hi-Soy full-fat soya flour, and Arkasoy, defatted soy flour.

Note: This is the earliest known commercial soy product made or sold by British Arkady. On 15 Jan. 1973 ADM acquired 50% of British Arkady Holdings Ltd.

25. *Sterling Daily Gazette (Sterling, Illinois)*. 1930.

Obituary: Martin G. Andreas. Jan. 21. p. 14.

• **Summary:** “Another life is ended, another race is run. One by one we answer the Master’s call to exchange the things of time for the things of eternity...”

“Martin G. Andreas was born July 18, 1845, in Lancaster county, Pennsylvania. He passed away at his home at 608 Broadway, Sterling [Illinois], Jan 18, 1930, at the ripe old age of 84 years and 6 months.

When a young man of 18 years of age he, with his parents, Mr. and Mrs. Peter Andreas, came to Sterling. As a young man he worked in this community as a farm hand. On Oct. 28, 1869, he was married to Mary H. Rutt. For two years they lived on a farm at Woodlawn. They then purchased a farm on what was then known as the Dixon road near Prairieville. They resided there for 34 years. Mr. Andreas was one of the pioneer farmers of that community and for almost the entire thirty-four years he served as one of the directors of the Prairieville school.

“To this union five children were born. Fannie R., William G., Ida M., Anna L. and Reuben P. [the father of Dwayne and Lowell Andreas]. Mrs. Andreas passed away July 5, 1907. On March 18, 1913, he was married [for a second time] to Fanny Andrew of Lancaster county, Pennsylvania, who with the following children survive him: Mrs. Fannie Myers, Mrs. E.E. LeFevre, Mrs. Benj. Mellinger, all of Sterling; Reuben P. of Lisbon, Iowa, and one step-son, Rea Kreider of Sterling, William G. having passed away Aug. 18, 1928. He is also survived by one brother, Frank Andreas of Emerson [Illinois] and one sister, Mrs. Ed Powell of Sterling.

“Mr. Andreas was for many years a member of the Mennonite church. When health permitted he was in his place of worship. In the later years when he was deprived of this privilege, he enjoyed the reading of the Word of God and prayer by his pastor as well as the ministers of the city who often called at his home. As the end drew near he was anxious for the time to come when he could steal away and

be at rest. He found a fitting expression of his own desires in the song, ‘The Last Mile of the Way.’

“Funeral services were held at the home at 608 Broadway Monday afternoon at 1 o’clock and at the Science Ridge Mennonite church at 2 o’clock, when many of his neighbors and friends gathered to pay a last tribute of respect.”

26. Rickey, Lacey F. 1930. Re: Report on the meeting of the Executive Committee of the Soybean Marketing Association with Funk Brothers. The companies that have dominated the linseed oil industry are preparing to do the same with the soybean industry. Letter to W.L. Burlison at University of Illinois, Feb. 28. 2 p. Typed, without signature (carbon copy).  
• **Summary:** “On Thursday, February 25, 1930, the following people met in the office of Funk Brothers in Bloomington to consider the methods of handling soybeans. Those representing the growers were: Mr. Armstrong, Mr. McCormick, Mr. Hart, Mr. Sandusky, Mr. Burns, Mr. Fahrnkoff, Mr. Coltus, and Mr. Rickey. Those representing the processors were: Mr. Eugene Funk, Mr. Eugene Funk Jr., Mr. Lafayette Funk, Mr. Miller, Mr. Bradley, Mr. Bracken, and their attorney.

“Mr. Funk believes that the linseed people who have obtained a control of practically the entire flax crushing business in this country as well as Argentine, are preparing to dominate the soybean industry in the same way. He is quite worked up over this idea and for that reason, of course, is strongly against the Archer-Daniels people obtaining soybeans.”

“Doubt was expressed as to whether the soybean growers would remain loyal to their contracts in case they did not prove advantageous during the first year or so.”

“Mr. Funk says that with the present facilities they can handle 700,000 bushels of [soy] beans per year and that this could readily be increased to 1,000,000 bushels.”

“Mr. Bradley was rather outspoken in saying that the University has done practically nothing to advance the feeding of soybean meal to farm animals. It was noted, however, that this meal has never been available on Illinois markets and that some work along this line has been done by the University.”

Location: University of Illinois Archives, Champaign-Urbana. Box 134–Soybeans, 1930-1949. Address: [Chicago, Illinois].

27. Eastman, Whitney H. 1930. Minutes of organizational meeting: May 21, 1930. City Club, Chicago, Illinois. Chicago, Illinois. 2 p. May 21. Unpublished typescript.

• **Summary:** Describes the founding of the National Soybean Oil Manufacturers Association, which in 1936 was renamed the National Soybean Processors Association.

“Mr. Otto Eisenschiml was elected chairman of the meeting.

“Mr. Whitney H. Eastman, Chairman of the Organization Committee, presented in behalf of his committee the Organization Declaration, Code of Ethics and Constitution and By-Laws, all of which were adopted and are herewith attached as a part of the record. Mr. Harry Haze, Chairman of the Trading Rules Committee, presented his report in behalf of his committee, the report being accepted subject to revision to incorporate therein the full text of trading terms according to commercial practice. The report as presented together with the additional trading regulations incorporated therein are herewith attached as a part of the record. Mr. Glenn H. Pickard presented a report for the Technical Committee recommending standard specifications for Crude Domestic Soybean Oil. Report with specifications as adopted is attached hereto as a part of the record. The spelling of the word ‘soybean’ as one word was adopted by the Association.”

“The following officers elected were: President, Otto Eisenschiml. 1st vice president, W.L. Shellabarger. 2nd vice president, R.G. Dahlberg. Secretary, Whitney H. Eastman. Treasurer, I.C. Bradley.

“Directors: H.G. Atwood, E.K. Scheiter, R.G. Bennet, E.D. Evans, B.C. Williams, David Lewis, W.E. Flumerfelt.

“Those in attendance were as follows: Allied Mills, Inc., represented by Mr. H.G. Atwood and Mr. D.W. McMillen. Armstrong Paint and Varnish Works, represented by Mr. R.G. Dahlberg and Mr. H.A. Paulsen. Brown-Edwards Co., Inc. (Mr. H.E. Hoaglund). Central States Chemical Co. (Mr. W.E. Flumerfelt). Evans Milling Co. (Mr. L. DeBourger). Falk & Company (Mr. David Lewis). Funk Brothers Seed Co. (Mr. I.C. Bradley and Mr. E.D. Funk). Archer-Daniels-Midland Company (Mr. Whitney H. Eastman). Harry Haze, Inc. (Mr. Harry S. Haze). Fred A. Jensen (Mr. Fred A. Jensen). The Mangelsdorf Soybean Company (Mr. Fred W. Mangelsdorf).

Glenn H. Pickard (Glenn H. Pickard). Purdue University (Lafayette, Indiana) (Dr. H.R. Kraybill). Roosling, Monroe & Co. (Mr. Carl H. Smith). Scientific Oil Compounding Co. (Mr. Otto Eisenschiml). Shellabarger Grain Products Co. (Mr. W.L. Shellabarger). Spencer Kellogg & Sons, Inc. (Mr. R.G. Bennet and Mr. Howard Kellogg, Jr.). A.E. Staley Manufacturing Co. (Mr. M.M. Durkee, Mr. H.J. Kapp, Mr. H.T. Morris and Mr. E.K. Scheiter). Sterne & Son Co. (Mr. C.B. Martin). University of Illinois (Dr. Roger Adams and Dr. W.L. Burlison).”

Note 1. This is the earliest document seen (July 2019) concerning the National Soybean Oil Manufacturers Association—renamed the National Soybean Processors Association, in 1936.

Note 2. This is the earliest document seen (July 2019) indicating that Spencer Kellogg & Sons was processing soybeans.

Note 3. This is the earliest document seen (Aug. 2019) that mentions Otto Eisenschiml in connection with the National Soybean Oil Manufacturers Association. It is not

clear whether he was Dr. Eisenschiml or Mr. Eisenschiml. Wikipedia (Aug. 2019) has this to say: “Otto Eisenschiml (June 16, 1880–December 7, 1963) was an Austrian-born chemist and industrial executive in the American oil industry, and a controversial author. He may be best known for his provocative 1937 book on the assassination of Abraham Lincoln in which he proposed that a senior member of Lincoln’s Cabinet orchestrated the plot to kill the president.

“Career: Eisenschiml was born in Austria. He attended the University of Vienna and obtained advanced degrees in chemistry [1]. In 1901, he emigrated to the United States and took a job as an industrial chemist. He rose through the ranks to become president of the Scientific Oil Compounding Company. For much of his life, Eisenschiml lived in Chicago, Illinois.” A photo shows Otto Eisenschiml. He was the author of 12 publications (mostly books) about the Civil War; the first of these was *Why was Lincoln Murdered?* (1937). Address: Archer-Daniels-Midland Co. [Minneapolis, Minnesota].

28. Potter, Paul. 1930. Chicago seen as center of soy bean trade: New organization will promote uses. *Chicago Daily Tribune*. June 1. p. F7.

• **Summary:** “Not for decades has there been as sudden a development in the agricultural middle west as the mounting soy bean production gives promise of effecting, in the opinion of a nucleus of manufacturers who have just formed a national association for the industry”—the National Soy Bean Oil Manufacturers’ association. Its president is Otto Eisenschiml, of the Scientific Oil Compounding company, Chicago. The names and affiliations of the other officers are given. They represent Shellabarger Grain Products company, Armstrong Paint and Varnish company, Archer-Daniels-Midland company, and Funk Bros. Seed company.

Its main goal is the development of the infant industry into prominence. It has announced that its first step is the development of specifications on the basis of which soy bean oil can be marketed. The second step will be to work with the University of Illinois, which has appropriated \$20,000 a year for a laboratory and two scientists, at the direction of former President David Kinley; together they will seek new outlets for the oil.

The “industry seems destined to develop Chicago as its central marketing point.” A small photo shows Otto Eisenschiml.

Note 1. This is the earliest published document seen (July 2019) that mentions the National Soybean Oil Manufacturers’ association—renamed the National Soybean Processors Association, in 1936. This is the earliest published document seen (July 2019) that spells National Soybean Oil Manufacturers’ association—with an apostrophe at the end of the word “Manufacturers”—which was one of two spellings.

29. *Grain Dealers' Journal*. 1930. Organize Soybean Oil Mfrs. Ass'n. 64(11):777. June 11.

• **Summary:** Describes the founding of the trade association which in 1936 was renamed the National Soybean Processors Association. "At a meeting held on May 21st, at the City Club of Chicago, the National Soybean Oil Manufacturers Ass'n [Association] was formally launched." Active members will include manufacturers and refiners of soybean oil. "Officers elected were: President, Otto Eisenschiml, Scientific Oil Compounding Co., Chicago; vice presidents, W.L. Shellabarger of Shellabarger Grain Products Co., and R.G. Dahlberg, Armstrong Paint and Varnish Co.; secretary, Whitney Eastman, Archer-Daniels Midland Co., Milwaukee [Wisconsin], and treasurer, I.C. Bradley, Funk Bros. Seed Co., Bloomington.

"Board of Directors (besides the above officers) were: H.G. Atwood, of the Allied Mills, Chicago; Robert Bennet, of Spencer Kellogg & Sons; Edward Evans, of Indianapolis [Indiana]; W.E. Flumerfelt, of the Central States Chem. Co.; David Lewis, of Falk & Co., Chicago; E.K. Scheiter, of the E.A. Staley Mfg. Co., Decatur, and B.C. Williams, of La Fayette, Indiana.

"The first step has been to set up specifications on the basis of which marketing of soy bean oil can be established. The second step is to work with the University of Illinois, which has appropriated \$20,000 annually for a laboratory and two scientists at the direction of former President David Kinley in seeking new outlets for the oil."

30. Archer-Daniels-Midland Co. 1930. Soybean oil manufacturers and refiners. Producers of pure old process soybean oil meal—Fine ground and pea size (Ad). *Proceedings of the American Soybean Association* 3:15.

<b>Archer-Daniels-Midland Co.</b>	
<i>Soybean Oil Manufacturers and Refiners</i>	
Producers of	
Pure Old Process Soybean Oil Meal—Fine Ground and Pea Size	
EXECUTIVE OFFICES MINNEAPOLIS, MINN.	SOYBEAN DIVISION BOX 1663, MILWAUKEE, WIS.

• **Summary:** The company's Soybean Division is located at Box 1663, Milwaukee, Wisconsin. No product names are given.

Note: This is the earliest ADM ad seen (July 2020) related to soybeans. Address: Executive offices: Minneapolis, Minnesota. Soybean Div., Milwaukee, Wisconsin.

31. *American Miller*. 1930. New concern assumes control of Commander-Larabee: Archer-Daniels-Midland Company and Guy A. Thomas form group to purchase interest held by baking corporation. 58(10):896. Oct. 1.

• **Summary:** "Controlling interest in the Commander-Larabee Corporation and affiliated companies has passed from the Continental Baking Corporation to the National Foods Corporation, recently organized by interests of the Archer-Daniels-Midland Company, largest linseed crushing concern in the country, and Guy A. Thomas of Minneapolis [Minnesota]." The affiliation of the Archer-Daniels-Midland Company with Commander-Larabee increases the latter's grain storage capacity from 10 million bushels to double that amount.

Commander-Larabee was formed only four years ago, in March 1926, by the consolidation of the mills owned and managed by B.B. Sheffield and the group of mills of the Larabee Flour Mills Co. plus the Lysle plant in North Kansas City [Missouri], now known as the Monarch Milling Co.

Four portrait photos show: Shreve M. Archer. C.M. Hardenbergh. Guy A. Thomas. R.W. Goodwell.

32. *Wall Street Journal*. 1930. Archer-Daniels adds to bean oil sales: Bookings from soap manufacturers and refiners in past two weeks up sharply. Dec. 16. p. 7.

• **Summary:** Minneapolis. In the past two weeks, the Archer-Daniels -Midland Co. has "sold 1,00,000 gallons of soy-bean oil to soap manufacturers and edible oil refiners." This is a remarkably large amount of oil for so short a period, given "the average annual consumption of soybean oil in the United States during the last ten years of 2,809,595 gallons."

Previously, almost all soy-bean oil has been sold to the paint, varnish and coated fabric industries at prices slightly higher than linseed oil. But soy-bean oil now sells for about one cent a pound less than linseed oil, and is used in more different industries.

Last year, 1,750,000 bushels of soy beans were crushed; the remainder of the U.S. crop was used for seed or feed on farms. However this year, with the import duty on soy-bean oil increased to 3½ cents a pound, an estimated 4,000,000 bushels will be crushed. Archer Daniels expects that the manufacture of "soy-bean oil will be an increasingly important and profitable part of its business."

33. **Product Name:** Soy Bean Oil, and Soy Bean Oil Meal.  
**Manufacturer's Name:** Archer-Daniels-Midland Co.  
**Manufacturer's Address:** Minneapolis, Minnesota.  
**Date of Introduction:** 1930 December.

**Ingredients:** Soybeans.

**New Product—Documentation:** *Wall Street Journal*. 1930. "Archer-Daniels adds to bean oil sales: Bookings from soap manufacturers and refiners in past two weeks up sharply." Dec. 16. p. 7. Minneapolis. In the past two weeks, the Archer-Daniels -Midland Co. has "sold 1,00,000 gallons of soy-bean oil to soap manufacturers and edible oil refiners."

Sweeney, O.R.; Arnold, Lionel K. 1935. "Processing the soybean." 2nd ed. *Iowa State College, Engineering Extension Service, Bulletin* No. 103. 59 p. See p. 55. Table

31, titled "U.S. soybean oil mills," lists 22 establishments that "are, or have been, processing soybeans for the production of soybean oil: Archer-Daniels-Midland Co., Minneapolis, Minnesota."

Ad in *Proceedings of the American Soybean Assoc.* 1936. [Sept.] p. 30. "New process soybean oil meal." The company now has soybean mills at Chicago, Illinois; Toledo, Ohio; Minneapolis, Minnesota; Milwaukee, Wisconsin; Buffalo, New York.

National Soybean Processors Association. 1941. Year Book, 1941-1942. Members. See p. 18. Archer-Daniels-Midland Co., Box 839, Minneapolis, Minnesota (W.H. Eastman).

USDA Northern Regional Research Laboratory. 1943. "Soybean processing mills in the United States." *USDA Bureau of Agricultural and Industrial Chemistry*. AIC-26. 10 p. Nov. See p. 2. Minneapolis, Minnesota: "Archer-Daniels-Midland Company." (Small = capacity of less than 50 tons/day of soybeans).

Note: This is the earliest known commercial soy product made in Minnesota.

**34. Product Name:** Soy Bean Oil, and Soy Bean Oil Meal.  
**Manufacturer's Name:** Archer-Daniels-Midland Co.  
**Manufacturer's Address:** Milwaukee, Wisconsin.  
**Date of Introduction:** 1930.  
**Ingredients:** Soybeans.  
**New Product–Documentation:** Archer-Daniels-Midland Co. 1930. Soybean oil manufacturers and refiners. Producers of pure old process soybean oil meal–Fine ground and pea size (Ad). *Proceedings of the American Soybean Assoc.* 3:15 [Sept.]. Executive offices: Minneapolis, Minnesota; Soybean Div., Box 1662 Milwaukee, Wisconsin. Note: No product names are given. The plant may have been that of the William O. Goodrich Co., acquired in 1928 by ADM as a maker of linseed oil.

Horvath, A.A. 1933. "The soy-bean industry in the United States." *J. of Chemical Education* 10(1):5-12. Jan. A photo (p. 5) shows two rows of hydraulic presses at the William O. Goodrich Co., Milwaukee, Wisconsin.

*Flour & Feed.* 1934. "Soybean plant of A-D-M newly equipped for business." Feb. p. 23. A-D-M is now remodeling its Chicago soybean plant; "the first extraction unit has been installed. The entire work should be completed by February 10th or 15th. "Hunter Goodrich, of the soybean division, Milwaukee [Wisconsin] plant," says the new equipment in Chicago is for solvent extraction.

*Oil, Paint, and Drug Reporter.* 1935. Trade news briefs: Archer-Daniels-Midland. Dec. 2. p. 62. The company's subsidiary, the William O. Goodrich Company, Milwaukee, Wisconsin, "has started a soybean oil mill in that city. The mill is equipped to handle both flaxseed and soybean." Note: In 1928 ADM acquired the plants and business of the William O. Goodrich Company in Milwaukee, Wisconsin.

Sweeney, O.R.; Arnold, Lionel K. 1935. "Processing the soybean." 2nd ed. *Iowa State College, Engineering Extension Service, Bulletin* No. 103. 59 p. See p. 55. "Wm. O. Goodrich Co., Milwaukee, Wisconsin."

USDA Northern Regional Research Laboratory. 1943. "Soybean processing mills in the United States." *USDA Bureau of Agricultural and Industrial Chemistry*. AIC-26. 10 p. Nov. See p. 3. Milwaukee, Wisconsin: "Archer-Daniels-Midland Company." (Medium = capacity between 50 and 200 tons/day of soybeans).

Haynes, Williams. 1954. *American chemical industry: A decade of new products. Vol. 5.* Toronto, New York, London: D. Van Nostrand Co. li + 622 p. In 1934 Archer-Daniels-Midland reopened the plant of its subsidiary, Wm. O. Goodrich Company at Milwaukee, Wisconsin, as a soya operation.

*Moody's Industrial Manual.* 1974. "Archer-Daniels-Midland Co." See p. 100 "On Feb. 1, 1928 [ADM] acquired the entire property and assets of William O. Goodrich Co. of Milwaukee [Wisconsin], manufacturers of highly specialized and refined qualities of linseed oil."

**35. Product Name:** Yelkin Lecithin.  
**Manufacturer's Name:** Ross & Rowe, Inc.  
**Manufacturer's Address:** 25 Beaver St., New York City.  
**Date of Introduction:** 1931 January.  
**New Product–Documentation:** Ad by Ross & Rowe, Inc. 1931. "Yelkin: The new, improved vegetable lecithin" *Oil and Fat Industries* 8(1):8. Jan.

Ad in *Bakers Digest.* 1943. April. p. 48. "Yelkin BSS Lecithin."

*Soybean Blue Book.* 1947. p. 70-71. Ad on p. 70 reads: "Standardized lecithins. Lecithin headquarters of America. Quality controlled... There is a grade of standardized lecithin specially adapted for each of the following: Confectionery products, bakery products, oleomargarine, paints and printing inks, cosmetics, vitamins, leather and textiles. Backed by a staff of competent technical men with over 17 years of practical lecithin experience, who know lecithin and how to use it." Note: The word "Yelkin" does not appear.

Ad in *Soybean Blue Book.* 1953. p. 101. "25 Years of Lecithin Experience. Pioneers and Leaders in Developing Uses. Leaders in Lecithin Sales." Note: 1953-25 = 1928. *Soybean Digest Blue Book.* 1974. March. p. 118. They are now a subsidiary of ADM. "Sole distributor of the complete line of Yelkin lecithin products." Ad in *Soybean Digest Blue Book.* 1978. p. 37. "Our Yelkin lecithins have been a standard in the industry for over 50 years."

**36. Wall Street Journal.** 1931. Archer-Daniels' earnings \$508,112: Ten months' profit equal to 56 cents a share—\$2.01 for preceding 12 months. Sept. 12. p. 3.

• **Summary:** This net profit of \$508,112 is after depreciation, interest, federal taxes, etc. The company has changed

its fiscal year to end on June 30, instead of August 31. A consolidated balance sheet of the company and its subsidiaries is given for the years 1928 to 1931.

“The relatively low profit is due to substantial losses from soy bean operations and to declines in the price of products which it was impossible to hedge,” Shreve M. Archer, says in his remarks to stockholders.”

ADM has participated in the management of Commander-Larabee Corp., and has realized a small profit from this.

37. *Prairie Farmer*. 1931. Soybeans make poor quality pork: Soybean oilmeal O.K.—There is danger in feeding whole soybeans. 103(32):3, 20. Oct. 31.

• **Summary:** When whole soybeans are fed to hogs, the result is undesirable soft, oily pork. “Soybean mills located in *Prairie Farmer* territory are: Allied Mills, Peoria, Illinois. Funk Bros., Bloomington and Taylorville, Illinois. Archer-Daniels Midland Company, Chicago, Illinois, and Toledo, Ohio. Evans Milling Company, Indianapolis, Indiana. Ralston-Purina Company, LaFayette, Indiana. Procter and Gamble, Louisville, Kentucky. Early-Daniels Company, Cincinnati, Ohio. Staley Company, Decatur [Illinois]. Shellabarger Company, Decatur [Illinois].”

Two photos show: “The loin and bacon on the left are from a soybean-fed hog. The right from corn-fed hog.” The samples on the left are soft (drooping over a pail) and fatty.

Note: This is the earliest document seen (Aug. 2016) that mentions Ralston Purina Co. in connection with soybeans.

38. *Chatham Daily News (Ontario, Canada)*. 1932. Soya bean cooperative gets charter: Form of contract is to be submitted to the growers at once. Matters pertaining to organization of farmers cooperative discussed at meeting of special committee of Board of Trade. May 28. p. 3, 12.

• **Summary:** “A charter has been granted to ‘The Soya Bean Oil and Meal Co-operative Company of Canada Limited,’ and will be in the city in the course of a few days, according to an announcement made by Douglas G. Kerr at a meeting yesterday of the special committee of the Chatham Board of Trade empowered to attend to the details of organization of the farmers co-operative which will operate a crushing plant in the city.

“Another interesting announcement was that more than 6,000 acres have been pledged for soya bean cultivation so far, with promises for more, and that everything augurs well for the operating of a temporary crushing plant in the T.H. Taylor Mills in the fall.

D.E.R. Rispin, chairman of the special committee, presided at the meeting which was held in the agricultural offices. Those in attendance were Douglas G. Kerr, T.R. Jones, Ross Huff, Stewart Campbell, Mayor I.L. Davis, Alderman P.J. Chinnick, and city manager A.L. Thompson.”

Restrictions:... Mr. Kerr explained that the co-operative is permitted to issue 2,000 shares at \$50 each. The restrictions are that only one share be held by one person, and that shares may only be issued to those actively engaged in farming in Canada. Shares can be transferred only with the consent of the directors.

“The constitution calls for 18 directors. Twelve provisional directors have been named for the purpose of organization, and the permanent directors will be appointed at an early meeting of the shareholders. As soon as the bylaws already drafted are approved, the meeting will be called.”

“Management contract: Some discussion was given to the question of a contract with the co-operative management, which will be the Archer-Daniels Midland Company, the opinion being held that details in connection with this could be completed at a meeting to be held next week.”

Full details of the eight-point contract are given. First, the Grower agrees to plant, care for, and cultivate a specified number of acres of Soybeans during a specified season at a specified location.

“2. The Co-operative hereby agrees to purchase and the Grower hereby agrees to sell all Soybeans the Grower produces less such quantity to be reserved for seed requirements for the following season as agreed to by the Co-operative, subject to terms and conditions as herein set forth, at a price per bushel (60 lbs.) to be finally determined when the Soybean products have been manufactured and sold.

“3. The Grower agrees to deliver Soybeans when delivery is called for by the Co-operative to the Co-operative crushing plant at Chatham...”

“4. The Co-operative will make an advance to the Grower on the price per bushel of Soybeans...”

Note 1. This is the earliest document seen concerning soybeans (or this cooperative crushing company) in Chatham, Ontario, Canada.

Note 2. This is the earliest published document seen (Jan. 2010) concerning a soybean crusher in Canada.

39. Morse, William. 1932. Soybeans. Radio broadcast. NBC. National Farm and Home Hour. Sept. 2.

• **Summary:** As president of the American Soybean Assoc., Morse is presiding over a broadcast from the association’s annual meeting. He begins this show, which is carried by a network of 47 associate NBC radio stations, by saying: “I am glad to greet the Farm and Home Hour audience on behalf of the American Soybean Association.” During the broadcast, Morse presents three guest speakers. First, Dr. A.A. Horvath of Pittsburg, Pennsylvania, who gives “a review of the uses of soybeans for human food.” Second, Mr. Whitney H. Eastman of the Archer-Daniels-Midland Company, who speaks about the industrial uses of soybean oil and meal. Third, Mr. F.P. Latham of Belhaven, North Carolina, who

describes “methods of soybean growing on a large scale.”  
Address: [USDA].

40. *Windsor Star (Windsor, Ontario, Canada)*. 1932. Sino-Jap row gives Kent new industry: Chatham mayor and Henry Ford rival emperor’ grow soy beans. Oct. 22. p. 25-26.

• **Summary:** This long and detailed story about soybeans is actually in the Third Section (page 1-2) of *The Border Cities Star*. The Archer-Daniels-Midland company is mentioned several times as a “sort of pioneer in the soy bean business, and before that was a pioneer in the extraction of linseed oil and its marketing in the United States.”

A table showing the many uses of lecithin includes lecithin, soy milk. “Mayor Davis of Chatham has been largely responsible for the formation in Chatham [Ontario] of a Soy Bean Co-operative whose members have some 7,000 [?] acres under cultivation in the district around Chatham and which is now setting up in Chatham a mill for the extraction of oil and meal in an old woollen mill owned by the Taylor milling firm.”

“The soy bean crop in Kent county this season has been very good. Some fields will run as high as 30 bushels to the acre, and the mill expects to have around 200,000 bushels to start work on when it commences operations sometime in November. There is a market awaiting every gallon of oil and every pound of meal, according to G.E. Biles, the expert from the Archer-Daniels-Midland Company which is handling and processing the beans for the new cooperative.”

“It was the soap business, as it is carried out in Great Britain that was responsible for the introduction of soy beans as a commercial crop in the Chatham area. A Chatham banker was on a trip to the Old Country and was impressed with the financial position of two soap companies there. He investigated and found that it was chiefly because they were using soy bean oil, which enabled them to get the quality they wanted in their soap more cheaply than from other fats. Knowing that soy beans grow wonderfully in Kent County, he brought the idea of starting the soy bean industry there, back with him. The present co-operative is the out-growth of that idea.”

“But Canada at present imports soy bean products. The Archer-Daniels-Midland Company, which is in the charge of the installation of the machinery in Chatham and of the handling of the production on a royalty basis for the co-operative, has been one of Canada’s main sources of supply. But the company’s contract says that when the Chatham Co-operative is in a position to supply the Canadian market, the company [ADM] will cease exporting.”

“Mr. Biles is enthusiastic about the possibilities of soy beans. When he started with the Archer-Daniels-Midland company he went to work in a plant in Decatur, Illinois. It was the first plant and they were pressing oil from 400 bushels of soy beans a day. Now they are using 3,500 bushels a day, and there are about 15 plants in the state. Mr. Biles

believes that soy beans, for commercial purposes, will some day overshadow the present huge corn products business. One can make more things from soy beans than from corn...”

41. *Star Tribune (Minneapolis, Minnesota)*. 1932. George Archer is dead at 82: Chairman of board of Archer-Daniels-Midland—Builder of linseed industry. Nov. 13. p. 1, 6.

• **Summary:** “Mr. Archer was born in 1850 at Dayton, Ohio, and had lived in the Twin Cities 43 years. He is survived by a son, Shreve M. Archer, president of Archer-Daniels-Midland Co., and a daughter, Mrs. Luella Archer Elliott of Phoenix, Arizona.

“There will be no funeral services for Mr. Archer in Minneapolis or St. Paul. His body will be taken Sunday night to Dayton, his birthplace, for burial in the Archer family mausoleum... The funeral will be conducted at Dayton.”

“Moved to Yankton, S.D.: The organization that Mr. Archer first became connected with was known as Clegg, Wood & Co. His father, William S. Archer, had been one of the founders of this company, in 1844.

“Shortly after Mr. Archer joined its staff, the name was changed to Wood, Archer & Co. and the young man was admitted to the partnership. He remained in Dayton, with the concern headed by his father, for some 10 years.

“In 1884 however, Mr. Archer decided to come west and continue the linseed manufacturing business nearer to the source of the material from which linseed is made, flaxseed. He accordingly moved to Yankton, South Dakota, and built a small flax crushing and linseed refining plant. Mr. Archer formed a corporation, Archer & Co., to operate this.

“Came to Minneapolis: After five years, Mr. Archer decided that Minneapolis offered greater advantages to a manufacturer of linseed products, particularly in the matter of distribution of both the oil and the byproducts, linseed cake and meal. He accordingly moved the business of Archer & Co. to Minneapolis, built a new and larger plant, and continued operation under that name, on a steadily larger scale, until 1899. Then he sold the plant to the American Linseed Co. but continued in charge of the Minneapolis business, as northwest manager of that corporation, for five years.

“In 1904, Mr. Archer joined with the late J.W. Daniels to organize the Archer-Daniels Co., with Mr. Daniels as president and Mr. Archer as vice president. The two men continued in active charge of the business until some 10 years ago and under their leadership it was developed as a dominant factor in the linseed industry, not only of America but throughout the world.

“Some eight years ago [April 1923], the Archer-Daniels Co. purchased the business and properties of one of its leading competitors, the Midland Linseed Products Co. of Minneapolis, and added them to its previous holdings.”

42. Horvath, A.A. 1933. The soy-bean industry in the United

States. *J. of Chemical Education* 10(1):5-12. Jan. [19 ref]

• **Summary:** This is an excellent overview. Contents:

Introduction: Soybean acreage in the USA in 1917 (50,000 acres) and 1931 (3,497,000 acres), production in bushels of seed for the top 22 states in 1931. Oil milling: Solvent or new process, hydraulic or old process, expeller method, the pioneering work of North Carolina (1916), Chicago Heights Oil Manufacturing Co. (1920), A.E. Staley Mfg. Co. (1922; starting with one expeller. Today capacity is over 1 million bushels/year), the Blish Milling Co. of Seymour and Crotersville, Indiana (1923; they crushed 317,000 pounds of soy beans in the 1927-28 season), current U.S. production of soy bean oil (13.5 million lb in 1930, up from 11 million lb in 1929), the problem of disposing of soy-bean oil meal. Soy bean oil for food. Lecithin. Bleaching properties (J.R. Short Milling Co. and Wytase). Soy beans for food: Use in China, Prof. L. Berczeller and soya flour, the Soyex Co. of Nutley, New Jersey. Glue: I.F. Laucks of Seattle, Washington (Research began in 1923 but the year "1926 proved to be the turning point in the life history of soy-bean glue").

"The maintenance of the soy-bean milling industry at a high level of production is dependent upon the consumption of soy-bean oil meal. And heretofore, according to W.H. Eastman [president of the National Soy-bean Oil Manufacturers Association], this consumption has been disappointingly small, despite the fact that the meal has no superior as a protein concentrate." The American livestock feeder "has not come to realize the value of the meal, nor to utilize its qualities to the same extent as the Danish farmer. In the year 1930 something over 100,000 tons of the meal were manufactured in this country [USA] from our domestic beans. Yet the little country of Denmark is consuming considerably more than we produce in the United States, while our milling industry is forced to store a good share of its production, unable to dispose of it... The demand for soy-bean cake is the limiting factor for the industry."

"Soybean oil has certain properties which make it more valuable to the paint and varnish industries than it would be as a mere diluent for linseed oil. For instance, it is particularly well adapted for grinding pastes... Soybean oil further has the property of mitigating the after-yellowing of a white paint or enamel, and in this respect it is without a peer. The trade would pay a considerable premium over the price of linseed oil to obtain soy-bean oil for this purpose."

"It is estimated that 75 per cent. of the soy-bean oil consumed in the United States is being used by paint and varnish industries and in the manufacture of linoleum, oilcloth, and artificial leather. Lesser quantities are utilized in printer's ink and soap."

Lecithin: "Up to the present time all the soy-bean lecithin used in this country [USA] is being imported from Germany and Denmark. The commercial product is a dark brown paste or heavy viscous liquid, containing about 60 to 70 per cent. of lecithin, the remainder being pure soya

oil, coconut oil, etc... The margarine industry absorbs a considerable amount of this lipid, as its incorporation overcomes many of the differences between butter and its substitute—e.g., it binds the water and prevents spitting when frying. Lecithin is of great interest in the chocolate and cocoa industry..." Discusses many applications of lecithin but does not give statistics concerning imports or domestic consumption / utilization.

"A new era dawned in the possibilities of the soy bean for food with the discovery in 1923 by Prof. L. Berczeller of the University of Vienna of a special process which eliminated the beany flavor from the soy bean and produced a nutty-tasting soy-bean flour capable of being stored for years without marked deterioration. Its principle consists in the subjection of the beans to the action of saturated steam for a short period of time, followed by vacuum distillation. It is to the credit of the Soyex Company that this process was brought over to the United States with the establishment in 1930 of a plant in Nutley, New Jersey. A high standard for soy-bean flour was established."

Soy-bean exhibit at the Chicago World's Fair: "The soy-bean industry of the United States will be adequately represented at the 1933 'Century of Progress' exposition in Chicago in the Agricultural Division under the title 'Century Soy-bean Exhibit.' On July 9, 1931, an organization meeting of representatives of the soy-bean industries was held in Chicago, where a committee was elected for the sections: producing, marketing, and utilization, the latter section being subdivided into human utilization, livestock utilization, the arts, paints and oils, and milling. The 'Century Soy-bean Exhibit' is an excellent opportunity for the domestic soy-bean industries to display their products and it is undoubtedly going to stimulate further developments.

"Conclusions: As Henry Ford recently said, 'The dinner table of the world is not a sufficient outlet for the farmer's products; there must be found a wider market if agriculture is to be all that it is competent to become. And where is that market to be found if not in industry?... For several years we have been running large crops of everything from sunflowers to soy beans through our chemical laboratory, in an effort to find an annual market for the farmer's produce. There can be no doubt that the soy bean is one of the most promising of all agricultural plants for an almost unlimited variety of industrial uses, and that it is going to play an outstanding role in the future economic life of this country.'"

Photos show: (1) A hydraulic process [press] mill (William O. Goodrich Co., Milwaukee, Wisconsin [subsidiary of ADM]). (2) Equipment for soy-bean oil refining process (A.E. Staley Mfg. Co., Decatur, Illinois). (3) Steam aspirator for producing high vacuum for deodorizing vegetable oils (Staley). (4) Soy-bean flour mill (The caption reads: Soyex Company, Inc., Nutley, New Jersey). (5) Baking Laboratory (The caption reads: Soyex Company Inc., Nutley, New Jersey. This photo may contain a photo of

Charles E. Fearn, the man to the right in the two-piece suit, with both sleeves rolled up).

Note 1. This is the 2nd earliest document seen (Nov. 2013) stating that the Soyex Company is located in Nutley, New Jersey.

(6) Plant making soy-bean adhesives (I.F. Laucks, Inc., Seattle, Washington). (7) Tank for adhesives (as high as the chin of a man standing next to it; Laucks).

Diagram: "Exploitation of the soy bean, according to the processes of Hansa Muehle G.m.b.H., Hamburg, Germany. Those derivatives representing products ready for sale are marked by circles." The process uses solvent extraction. On the oil side: There is a "distillation" step before the crude oil, which is refined to make edible oil. Crude lecithin is refined to make finished lecithin. On the meal side: First step is removal of solvent and drying of meal. Then cooling by air to give finished meal. It undergoes grinding, milling and sifting to give grits, hull meal, and edible flour.

Note 2. This is the earliest English-language document seen (Jan. 2019) that uses the term "grits" to refer to coarse soy flour.

Note 3. A footnote on the first page states that Horvath is a "Special Associate Member of the National Soy-bean Oil Manufacturers Association. (P.O. Box 331, Oakland Station)."

Note 4. Talk with Bob at the Map Room of the University of Chicago. 1997. March 25. Oakland Station is probably in Chicago, Illinois. A railway map from the 1930s and a gazetteer from the 1920s show it to be a mail stop on the Illinois Central line at 39th Street. This is 39 blocks south of The Loop, right along Lake Michigan, south of the center of Chicago.

Note 5. This is the earliest document seen (March 2016) concerning soy lecithin industry and market information (all soy lecithin used in this country [USA] is being imported from Germany and Denmark). Address: Pittsburgh, Pennsylvania.

**43. Product Name:** Soybean Oil, and Soybean Oil Meal.

**Manufacturer's Name:** Soya Bean Oil and Meal Co-operative Company of Canada Ltd. (The).

**Manufacturer's Address:** 103 Colborne St. north, Chatham, ONT, Canada.

**Date of Introduction:** 1933 April.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** *The Chatham Daily News* 1932. May 28. p. 1, 12. "Soya Bean Cooperative Gets Charter." "A charter has been granted to 'The Soya Bean Oil and Meal Co-operative Company of Canada Limited'..." Note: This is the earliest document that the Chatham Library can find concerning this company (April 1997).

Vernon's City of Chatham (Ontario, Canada) Directory. 1933. Corrected to April 1933. p. 189. "Soybean Oil & Meal

Co-operative Co. Ltd., G.E. Biles, mgr, Colborne n, w cor of Adelaide" (Company located at northwest corner of the intersection of Colborne St. and Adelaide St.).

*Agricultural and Industrial Progress in Canada.* 1935. "Linseed oil." 17(2):27-28. Feb. "The production of the Canadian linseed and soy bean oil industry in 1933, according to a report of the Dominion Bureau of Statistics, was valued at \$2,086,000. The number of plants in operation was ten and the capital investment \$3,022,000.

"Of these ten plants two used soy beans as their raw material, namely, The Canadian Soyabeans Limited of Milton, and the Soybean Oil and Meal Co-operative Company of Canada Limited of Chatham, both in southwestern Ontario." The value of soy-bean oil and meal was no more than \$49,071.

C.A. MacConkey. 1935. Soybeans. Ottawa, Ontario, Canada: National Research Council. p. 65. "Firms Engaged in the Soybean Industry in Canada." "The Soy Bean Oil and Meal Co-operative Company of Canada, Ltd., Chatham, Ontario."

Shepherd's City of Chatham (Ontario, Canada) Directory. 1936. Page B-162 states: The company name and address are exactly the same as in 1933, except that the word "Soybean" is now spelled "Soyabean." So the company name was spelled in three slightly different ways prior to 1936. The manager is now D.D. Gagner. Page C-4 gives the address as 103 Colborne, north side, from North William to Limits. Note: In the 1937-38 edition of this directory, this company is no longer listed. Rather, A.E. Brotherton is at 103 Colborne and Verne Mifflin is at 103½ Colborne. Then in the 1938-39 edition no-one is listed at this address. And in the 1939-40 edition, Ernest Lane is listed at 103 Colborne.

F. Dimmock. 1936. "Division of Forage Plants: A report on the present status of the soybean industry, particularly in western Ontario." In: National Research Council of Canada. 1936. Proceedings of the Second Conference on Soybeans. Ottawa, Canada. Appendix "B." p. B-2. Describes Canada's second soybean crusher: "The next effort to start a mill was made at Chatham, Ontario, in 1932 by a farmer's co-operative under the name of the Soybean Oil and Meal Co-operative Co. of Canada, Limited. Farmers secured membership in the company by the purchase of a share valued at \$50 and this gave the purchaser prior rights to sell beans to the company. The number of members was said to have reached from 700 to 800 farmers. Under an agreement with the Archer-Daniels-Midland Company, Milwaukee, Wisconsin (one of the largest millers of soybeans in the United States), this company installed the machinery and provided a manager, Mr. B.E. Biles, to run the mill. In return for these services the Archer-Daniels -Midland Company was to receive 5 cents for every bushel of beans milled. The mill was of the Anderson expeller type and had a total capacity of about 20 tons of beans a day (24 hours)... The mill operated at intervals for a few months, but crushed

only 22,000 bushels of beans. The first year's results were disappointing to the company and the growers alike. In 1933 the price of soybean products rose considerably," and the mill handled something over 50,000 bushels of beans. "The final blow came when Mr. Biles, the manager, disappeared with about \$7,000 of the company's funds. The plant is now idle and did not open for the 1935 crop."

J.W. Tanner. 1973. "Where we are and how we got there: An historical review of soybean production in Ontario." In: Ontario Soya-Bean Growers' Marketing Board, ed. 1973. Ontario Soybean Symposium 1973. Ottawa: Agriculture Canada. p. 13, 18. "Two short-lived crushing plants were established in the south west part of Ontario in the mid-1930s, one of which was located at Shelbourne (or Colbourne/Colborne) Street in Chatham." Note: Founded in 1934 (see p. 18), this was apparently the first crushing plant in Canada.

44. *Flour & Feed*. 1934. Soybean plant of A-D-M newly equipped for business. 34(9):23. Feb.

• **Summary:** Archer-Daniels-Midland Co. now has its Chicago soybean plant in process of remodeling [by adding a solvent extractor]. A photo shows the plant. The first extraction unit has been installed, and the entire work should be completed by February 10th or 15th. Hunter Goodrich, of the soybean division, Milwaukee, Wisconsin plant, announces the installation of machinery and equipment is for the manufacture of soybean oil meal by the new process, or solvent extraction method, which he says is used exclusively in Germany, and marks a new step in the production of vegetable protein concentrates in this country. It is an event of particular significance for the entire feed milling industry.

Note: ADM's first solvent extraction plant began operation in March 1934 on Blackhawk St. on Chicago. It was a 100-ton-per-day capacity Hildebrandt continuous-flow, counter-current (U-tube) hexane solvent extractor. At that time ADM had the largest and most modern soybean processing system in America.

45. **Product Name:** Soy Bean Oil, Soy Bean Oil Meal, and Lecithin (Solvent extracted).

**Manufacturer's Name:** Archer-Daniels-Midland Co.

**Manufacturer's Address:** Chicago, Illinois.

**Date of Introduction:** 1934 March.

**Ingredients:** Soybeans.

**New Product-Documentation:** *Flour & Feed*. 1934. Soybean plant of A-D-M newly equipped for business. 34(9):23. Feb. Archer-Daniels-Midland Co. now has its Chicago soybean plant in process of remodeling [by adding a solvent extractor]. A photo shows the plant. The first extraction unit has been installed, and the entire work should be completed by February 10th or 15th. Hunter Goodrich, of the soybean division, Milwaukee, Wisconsin plant, announces the installation of machinery and equipment is for

the manufacture of soybean oil meal by the new process, or solvent extraction method, which he says is used exclusively in Germany, and marks a new step in the production of vegetable protein concentrates in this country. It is an event of particular significance for the entire feed milling industry.

Archer-Daniels-Midland Co. 1935. Archer-Daniels-Midland Company new process soybean oil meal (Ad). *Proceedings of the American Soybean Assoc.* p. 22. Aug. "New process soybean oil meal produced by the Hildebrandt solvent extraction process employed by the Archer-Daniels-Midland Company is now recognized as a protein concentrate of exceptional merit... Previous attempts to market an extracted meal in the United States proved unsuccessful chiefly because the meal was of inferior quality through failure to remove all of the solvent." This meal "contains not the slightest trace of solvent. One distinct advantage of extracted Soybean Oil Meal is its higher protein content which results from an additional 4 or 5 percent of oil."

MacGee, A. Ernest. 1947. "Vegetable oil extraction solvents; History and general chemical composition." *Oil Mill Gazetteer*. Aug. p. 18. By 1934 a number of continuous solvent plants were operating in Europe. In the USA, the first large-scale plant of this type was that of the Archer-Daniels-Midland Company, Chicago, Illinois. In March 1934 it began operating using a "Hildebrandt" extractor to process 100 tons/day of soybeans. The solvent was petroleum naphtha of the hexane type. As of 1947, this plant is still in operation, and in 1934 it marked the turning point and beginning of large-scale soybean crushing in America.

Cross, Marion E. 1954. *From land, sea, and test tube: The story of Archer-Daniels-Midland Company*. Minneapolis, Minnesota: ADM. 88 p. In 1933 ADM's plant superintendent E.W. Schmidt was sent to Europe to make a study of solvent extraction and bring back the best equipment available. Solvent extraction had originated in Europe, having been introduced by an Englishman in 1843; but only in recent years had the process been perfected to the point where it had come into wide use. Schmidt selected a Hildebrandt unit made in Germany; it used hexane solvent. "After the solvent had been removed by distillation, the oil was ready to be refined and the solvent was available for re-use. This process was so effective that only one per cent of the oil was left in the meal. The lower oil content made solvent extracted meal very hard to sell at first, even though feed purchasers were being offered a protein concentrate that contained 44 per cent protein as compared with the 41 per cent produced by hydraulic or expeller presses. After the extraction unit had been installed in June 1934, ADM started to produce lecithin..." Note: This 150-ton-per-day capacity Hildebrandt continuous-flow, counter-current (U-tube) hexane solvent extractor began operation in March 1934 on Blackhawk Street in Chicago. It was America's first successful continuous solvent extractor; at the time

it was also America's largest and most modern soybean crushing system, and the first to use hexane as a solvent with soybeans.

Letter from Dick Wallace of ADM. 1981, Sept. ADM first started making food grade soy lecithin in June 1934.

46. Archer-Daniels-Midland Co. 1934. A.D.M. at the Paint Industries Show, October 28, 29, 30, 31 (Ad). *Paint, Oil and Chemical Review* 96(19):51. Sept. 20.

• **Summary:** "This year, Archer-Daniels-Midland will show its full line of oils at the show. One hundred samples, including a complete line of regular and special linseed products—and soya bean and china wood oils for all purposes will be displayed for inspection and discussion. You will find this year's A.D.M. display infinitely more interesting than ever—due to several recent developments emanating from our research laboratories. Our booth number is 14.

"Crushers since 1840 (94 years).

"Mills at Minneapolis [Minnesota]; New York; Portland, Oregon; Chicago [Illinois]; Toledo [Ohio]; Milwaukee [Wisconsin]; Buffalo [New York]; St. Paul [Minnesota]; Fredonia, Kansas." Address: Minneapolis, Minnesota.

47. Schmidt, E.W. 1934. Recent developments relating to soy oil extraction by the solvent process. *Paint, Oil and Chemical Review*. 96(23):9-12. Nov. 15. [1 ref]

• **Summary:** Since 1920 and the end of World War I, the soybean processing industry in Germany has developed into one of great importance; Manchuria is the source of their soybeans. Batch extractors are still being used in Germany to process soybeans, however during the last 3-4 years the trend has been definitely toward continuous solvent extraction, especially in the larger mills.

The first continuous solvent extraction unit was built by Hansa Muehle in Hamburg, Germany, for use on soybeans. This gigantic unit has a daily capacity of 33,000 bushels [1 metric ton of soybeans = 36.75 bushels, so 33,000 bushels = 898 tons]. The plant has been in successful operation "for a number of years."

Shortly after the Hansa Muehle plant was completed, Brinckman & Mergel, a large oil milling firm at Harburg, Germany, developed a continuous extraction unit which is known as the Hildebrandt system, named after Mr. Carl Hildebrandt, the chief engineer and inventor. Its original capacity was 100 tons per day; the present unit, with 600 tons per day capacity, has been in operation for the past four years.

After studying the matter carefully, ADM decided that the Hildebrandt system was best suited to their needs. The ADM plant was installed in Chicago last winter and is the "first successful continuous extraction unit that has been put into operation on a large scale in this country."

Diagram 1 shows a cross section of the extraction unit; Diagram 2 is a flow chart of the complete plant. Five photos

show close-ups of the new ADM plant in Chicago. The quality of the "new process" soybean oil and "oil meal" is excellent. Address: General Superintendent, Archer-Daniels-Midland Co.

48. Honeymead Products Co. 1934. Display ad: Honeymead corn sugar molasses: Quick fattener for all classes of livestock. *Gazette (The) (Cedar Rapids, Iowa)*. Nov. 30. p. 17, cols. 1-3.

• **Summary:** "Contains nothing but corn—in a concentrated form.

"Guaranteed tank car analysis.

"Total sugars: From 74% to 82%

"Total moisture: From 18% to 22%.

"Distributed by R.P. Andreas & Sons of Lisbon, IA. And your local dealer."

Note: This is the earliest document seen (July 2020) concerning any of the Andreas family and soybeans. Address: Cedar Rapids, Iowa.

49. Honeymead Products Co. 1934. Honeymead: Corn sugar molasses (Ad). *Des Moines Tribune (Des Moines, Iowa)*. Dec. 5. p. 17. Bottom right corner.

• **Summary:** "Quick fattener for all classes of livestock. Contains nothing but corn—in a concentrated form. Guaranteed tank car analysis: Total sugars: from 74% to 82%. Total moisture: from 18% to 22%. See your local dealer.

Three illustrations show animals eating feed.

Note: This is the earliest document seen that mentions Honeymead in Iowa on www.newspapers.com. This company was run by the Andreas family in Dec. 1934. Address: Cedar Rapids, Iowa.

50. Archer-Daniels-Midland Co. 1935. Archer-Daniels-Midland Company new process soybean oil meal (Ad). *Proceedings of the American Soybean Association* p. 22.

• **Summary:** "New process soybean oil meal produced by the Hildebrandt solvent extraction process employed by the Archer-Daniels-Midland Company is now recognized as a protein concentrate of exceptional merit. The Hildebrandt process as developed in this country by the Archer-Daniels-Midland Company has long since passed the experimental stage of the early American extraction systems.

"Previous attempts to market an extracted meal in the United States proved unsuccessful chiefly because the meal was of inferior quality through failure to remove all of the solvent. That much of the prejudice formerly existing against an extracted meal has been eliminated is due to the fact that the continuous solvent extraction process used by the Archer-Daniels-Midland Company not only produces an excellent quality meal, but one which contains not the slightest trace of solvent.

"One distinct advantage of extracted Soybean Oil Meal

## Archer-Daniels-Midland Company New Process Soybean Oil Meal

¶ NEW PROCESS SOYBEAN OIL MEAL produced by the Hildebrandt solvent extraction process employed by the Archer-Daniels-Midland Company is now recognized as a protein concentrate of exceptional merit. The Hildebrandt process as developed in this country by the Archer-Daniels-Midland Company has long since passed the experimental stage of the early American extraction systems.

¶ Previous attempts to market an extracted meal in the United States proved unsuccessful chiefly because the meal was of inferior quality through failure to remove all of the solvent. That much of the prejudice formerly existing against an extracted meal has been eliminated is due to the fact that the continuous solvent extraction process used by the Archer-Daniels-Midland Company not only produces an excellent quality meal, but one which contains not the slightest trace of solvent.

¶ One distinct advantage of extracted Soybean Oil Meal is its higher protein content which results from the removal of an additional 4 or 5 percent of oil. This combination of higher protein and lower fat content of NEW PROCESS SOYBEAN OIL MEAL provides an unusually efficient and economical feed, particularly since grains normally mixed with protein concentrates contain a higher proportion of fat producing ingredients. The experiences of feeders and manufacturers abroad has demonstrated conclusively the efficiency of NEW PROCESS SOYBEAN OIL MEAL, Germany alone crushing 44,000,000 bushels of soybeans in 1932, all by the solvent extraction process.

¶ Our agricultural colleges have conducted numerous experiments to determine the palatability and feeding value of various types of Soybean Oil Meal. Valuable and instructive as such research has been, it is apparent that it has as yet barely scratched the surface. Recent experiments have shown the value of NEW PROCESS SOYBEAN OIL MEAL as it is produced by the Archer-Daniels-Midland Company, and further research will accord solvent extracted meal a prominent place among high protein concentrates.

### ARCHER-DANIELS-MIDLAND COMPANY

Soybean Mills at  
Chicago and Toledo

Soybean Division  
Box 603, Milwaukee, Wis.

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ADM has soybean mills at Chicago, Illinois, and Toledo, Ohio.

Note: This is the earliest ad seen (Oct. 2016) that mentions “New Process” [solvent extracted] soybean meal—made by any company. Address: Soybean Div., Box 603, Milwaukee, Wisconsin; Soybean mills at Chicago and Toledo.

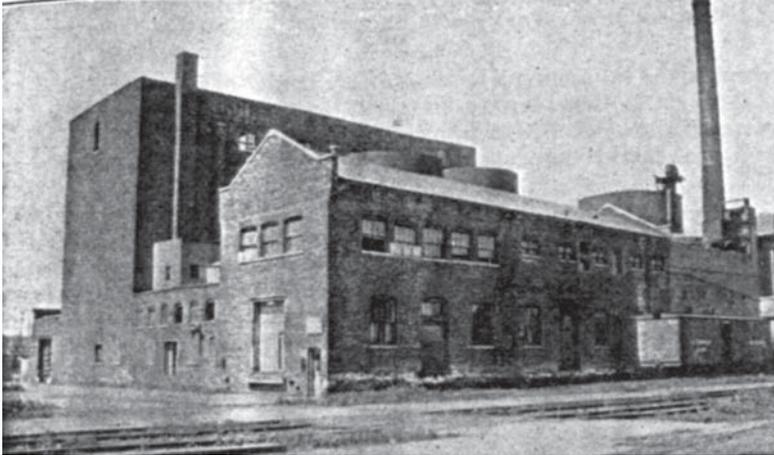
51. *Proceedings of the American Soybean Association*. 1935. Processing soybean oil meal. p. 21, 23.

• **Summary:** “Three methods of extracting oil or fat from soybeans are in use in the United States, each producing a meal of different standards and possible value...” (1) Old process or hydraulic extraction. (2) Expeller process extraction. (3) Solvent extraction. “Recently new solvent plants have started to operate, built on the continuous flow principle...”

A section titled “Soybean oilmeal” (p. 23) states: “The increased acreage of soybeans, and the increase in soybean oilmeal production both tend to center interest in the use of this oilmeal. It is now used only to a limited extent in the corn belt where most of the raw material is produced. No estimate can be placed on the amount of soybean oil meal distributed in mixed feeds, but in Indiana from 1931

to 1934, only 13 per cent of the meals commonly sold as straight oil meal has been soybean oilmeal. The average annual use of 1,562.5 tons of straight soybean oilmeal during this period required the processing of less than 75,000 bushels of soybeans, while the average annual production during this period was 2,000,000 bushels.

“The value of soybean oilmeal used as the only oil meal in rations for various classes of livestock in comparison with



other sources of protein is indicated in the experimental work briefly reported on these pages.

“Detailed results of all feeding work with soybeans, soybean oilmeal, and hay at the University of Illinois are included in Volume III [1930] of the Report of the Association, and summary of the work at Purdue University is included in Volume II [1928, 1929] which are available to all members of the Association.”

A photo (p. 23) shows an exterior view of the “Solvent extraction plant of Archer-Daniels-Midland Co. at Milwaukee, Wisconsin. See opposite page for description of this process.”

52. *Cedar Rapids Gazette*. 1935. Lisbon. Sept. 15. p. 17.

• **Summary:** “Local students leaving this week to enroll in college are:… Glen Andreas, Wheaton, Illinois; Dwayne Andreas, University of Miami, Florida;…”

53. *Wall Street Journal*. 1935. Archer-Daniels-Midland Co. Nov. 23. p. 5.

• **Summary:** Milwaukee, Wisconsin—“The William O. Goodrich Co., a subsidiary of Archer-Daniels -Midland, has started a soy bean oil plant here. The mill is now equipped to handle both flax seed and ‘soya bean.’”

54. **Product Name:** Pro-zyme Flakes.

**Manufacturer’s Name:** Archer-Daniels Midland Co.

**Manufacturer’s Address:** Chicago, Illinois.

**Date of Introduction:** 1935 November.

**New Product–Documentation:** Spot in *Food Industries*. 1935. Nov. p. 551-52. “The purpose of the flakes is to provide a stable head of foam on the beer... Intended to replace a little amount of malt, the soy bean flakes are added to the beer at the rate of approximately three fourths of a pound to the barrel.”

Note: This is the earliest English-language document seen (Jan. 2019) that contains the term “soy bean flakes”—used to refer to a food or beverage item.

55. *Food Industries*. 1935. Soy bean beer improver. 7(11):551-52. Nov.

• **Summary:** Archer-Daniels-Midland Co. of Chicago [Illinois] has just launched “Pro-zyme Flakes,” a soy bean product for brewers. They are intended “to provide a creamy, stable ‘head’ of foam on the beer, and to replace a like amount of malt.” The “flakes are added to the beer at the rate of approximately three fourths of a pound to the barrel.” They should be added directly to the main or malt mash along with the malt, and should remain in the mash through the peptonizing and diastatic steps.

56. *Oil, Paint, and Drug Reporter*. 1935. Trade news briefs: Archer-Daniels-Midland. 128(25):62. Dec. 2.

• **Summary:** The company’s subsidiary, the William O. Goodrich Company, Milwaukee, Wisconsin, “has started a soybean oil mill in that city. The mill is equipped to handle both flaxseed and soybean.”

57. **Product Name:** Full-fat Soy Flour.

**Manufacturer’s Name:** Archer-Daniels-Midland Co.

**Manufacturer’s Address:** Minneapolis, Minnesota.

**Date of Introduction:** 1935.

**New Product–Documentation:** Letter from Dick Wallace of ADM. 1981. Sept. ADM started producing full-fat soy flour in 1935.

Note: This is the 2nd earliest known commercial soy product made by ADM in the United States.

58. Sweeney, O.R.; Arnold, Lionel K. 1935. Processing the soybean. 2nd ed. *Iowa State College, Engineering Extension Service, Bulletin* No. 103. 59 p. 28 cm. (Ames, Iowa). First published in 1929. Official publication, Vol. 34, No. 14. 4 Sept. 1935. [42 ref]

• **Summary:** This is a revised version of the original 1929 bulletin. Contents: 1. The soybean and the farm problem: Characteristics of the soybean, uses of the soybean, soybeans in Iowa, the soybean and the nitrogen problem, the soybean and the protein problem, the soybean and the vegetable oil problem. 2. Methods of producing soybean oil: The hydraulic press method, the Anderson Expeller method, the solvent extraction system (stationary, large-scale Soxhlet type, rotary, continuous [Hansa Company, Ford Motor Co.], extraction solvents incl. trichloroethylene). 3. Plant design. 4. Production costs: Operating costs, calculation of costs. “The authors have endeavored to present the philosophy of small plants located close to the grower of the beans who would also be the buyer of the meal at a price not loaded by high freight costs. The farmer would thus retain on the farm the protein portion of the bean with its high feed and fertilizer values.”

Page 39 notes: “A continuous process said to be suitable for a small scale plant is being experimented with by the Ford Motor Company. In this process the flaked beans are fed into the bottom of a pipe set at a 10 degree angle and fitted with a screw conveyor. The flaked beans are moved through the pipe against the solvent, which flows in at about halfway between the upper and lower end. The upper end of the pipe forms a steaming chamber where the solvent is vaporized off. A similar process has been patented by Flumerfelt.”

Photos show: (1) Experimental hydraulic press. (2) An Anderson Expeller.

Table 31, titled “U.S. soybean oil mills” (p. 55), lists 22 establishments that “are, or have been, processing soybeans for the production of soybean oil: Archer-Daniels-Midland Co., Minneapolis, Minnesota. The Chicago Heights Oil Co., Chicago Heights, Illinois. The East St. Louis Cotton Oil Co., East St. Louis, Illinois. The Eastern Cotton Oil Co., Elizabeth City, North Carolina. The Elizabeth City Oil and Fertilizer Co., Elizabeth City, North Carolina. Falk and Co., Carnegie, Pennsylvania. W.F. Fancourt and Co., Philadelphia, Pennsylvania. Ford Motor Co., Detroit, Michigan. Funk Bros. Seed Co., Bloomington, Illinois. Wm. O. Goodrich Co., Milwaukee, Wisconsin [subsidiary of ADM]. W.R. Grau and Co., New York, New York. The Havens Oil Co., Washington, New Jersey. National Oil Products Co., Harrison, New Jersey. The New Bern Cotton Oil and Fertilizer Mills, New Bern, North Carolina. The Peru Products Co., Peru, Indiana. Wm. H. Scheil, Inc., New York, New York. Soybean Products Co., Cedar Rapids, Iowa. Spencer Kellogg and Sons, Inc., Des Moines, Iowa. The A.E. Staley Co., Decatur, Illinois. Standard Soybean Processing Co., Centerville, Iowa. Welch, Holme and Clark, Inc., New York, New York. The Winterville Cotton Oil Co., Winterville, North Carolina.” Address: Iowa State College, Ames, Iowa.

59. *Flour & Feed*. 1936. New soybean committee. 36(9):19. Feb.

• **Summary:** “The Grain & Feed Dealers’ National association has appointed a soybean committee to disseminate information to members.

“The committee is expected to inaugurate a campaign of education on soybeans. There are many things connected with the handling of soybeans that many grain and feed dealers do not know. Future markets on soybeans will be necessary before long. One of the things the new committee might straighten out is the confusion in the public mind about the difference between soybean oilmeal and the whole soybeans. The Chicago packers at a recent meeting stated emphatically that raw [sic, whole] soybeans fed to hogs make soft, oily pork, which must be discounted in price. The faults commonly attributed to whole soybeans do not apply to soybean oilmeal. These two supplements are different in

composition and produce different results when fed to pigs.

“Following are the members of the committee:

“Austin D. Sturtevant, chairman, Bartlett-Frazier Co., Chicago, Illinois; H.R. Schultz, Standard Soybean Mills, Centerville, Iowa; Harold L. Gray, Crabbs, Reynolds, Taylor Co., Crawfordsville, Indiana; Arthur C. Smith, Archer-Daniels-Midland Co., Milwaukee, Wisconsin; Lew Hill, Lew Hill Grain Co., Indianapolis, Ind.; H.W. Glessner, Baldwin Elevator Co., Decatur, Ill.; Ray Rowland, Ralston Purina Co., Circleville, Ohio; P.C. Knowlton, Knowlton Grain Co., St. Louis, Missouri.”

60. Hayward, J.W. 1936. Soybean oil meal: Recommendations on how to use it for maximum results. *Flour & Feed* 36(9):18. Feb.

• **Summary:** The general interest in soybean oilmeal is presently the keenest ever known. The main reason is that it supplies protein at the lowest cost per unit of protein of all concentrates which are universally available on the market today.

It is well known that soybean oilmeal must be thoroughly cooked in order to contain efficient proteins. When the meal is properly cooked, especially where moist heat (live steam) is used and the temperatures maintained are sufficient for complete cooking,” soybean meal has been found to contain proteins which are 20 to 50% more efficient in producing growth in animals than meals prepared at low temperate.

Note: This is the earliest document seen (June 2016) that uses the term “moist heat” in connection with proper cooking of soybean oilmeal (or soybean meal).

This article contains the following tested formulas and recommendations for sound and economical feeding of livestock and poultry: Laying and breeding flock. Baby chick starter and grower. Turkey starter mash. Turkey developing mash—feed with grain form 8 weeks to maturity. Mixture for pigs fed in dry lot. Dairy feed. Cattle and sheep rations. Address: PhD.

61. Dimmock, F. 1936. Division of Forage Plants: A report on the present status of the soybean industry, particularly in western Ontario. In: National Research Council of Canada. 1936. Proceedings of the Second Conference on Soybeans. Ottawa, Canada. 18 p. See Appendix B, p. B1-B6. Held on 4 May 1936 in the National Research Building, Ottawa, Ontario, Canada. [4 ref]

• **Summary:** An excellent insight into early soybean crushing operations in Canada. “During the year 1935 it has been estimated that approximately 10,000 acres were devoted to soybeans in Canada. This acreage was located almost entirely in western Ontario where the comparatively long, warm season provides excellent conditions for the production of this crop.

“Of the 10,000 acres it is unlikely that more than half

of 5,000 acres was harvested for seed. At an average of 20 bushels per acre this would mean a total seed production of about 100,000 bushels. Possibly 50 percent of this quantity will be used for feed and to supply seed for the present season's crop, leaving approximately 50,000 bushels of beans available for disposal for commercial purposes...

"As the centre of soybean production is located in western Ontario, it is only natural that the mills for utilizing the crop should be located there also. The one exception is the plant of the Dominion Soya Industries, 2049 Harvard Avenue, Montreal, Quebec.

"During the fall of 1929 the first oil mill for processing soybeans was established at Milton, Ontario, under the name of the Milton Oil Refineries, Limited. This mill got off to a poor start, and for various reasons such as poor management, poor machinery, and probably poor financing, has never operated with any degree of success. It has changed hands several times but is not operating at present. It uses the hydraulic press method of extraction.

"The next effort to start a mill was made at Chatham, Ontario, in 1932 by a farmer's co-operative under the name of the Soybean Oil and Meal Co-operative Co. of Canada, Limited. Farmers secured membership in the company by the purchase of a share valued at \$50 and this gave the purchaser prior rights to sell beans to the company. The number of members was said to have reached from 700 to 800 farmers. Under an agreement with the Archer-Daniels-Midland Company, Milwaukee, Wisconsin, (one of the largest millers of soybeans in the United States), this company installed the machinery and provided a manager, Mr. B.E. Biles, to run the mill. In return for these services the Archer-Daniels-Midland Company was to receive 5 cents for every bushel of beans milled. The mill was of the Anderson expeller type and had a total capacity of about 20 tons of beans a day (24 hours). Unfortunately during the first year of operation the prices of soybean oil and meal dropped to their lowest point, and as a result the price paid for beans was only about 50 cents per bushel. The mill operated at intervals for a few months, but crushed only 22,000 bushels of beans. The first year's results were disappointing to the company and the growers alike.

"In 1933 the price of soybean products rose considerably (meal from \$21 to \$36.50 per ton) but while the mill handled something over 50,000 bushels of beans the price paid the farmer averaged only 65 to 70 cents per bushel. This continued low price had a very discouraging effect upon the growers and while they continued to produce soybeans they preferred to use them for feeding to livestock rather than sell them to the mill. Much difficulty was encountered in purchasing beans for the mill from the 1934 crop—farmers were beginning to appreciate the value of soybeans for feeding purposes. The price offered, 70 to 75 cents per bushel, brought in very few beans. The final blow came when Mr. Biles, the manager, disappeared with about \$7,000

of the company's funds. The plant is now idle and did not open for the 1935 crop.

"The plant of the Dominion Soya Industries, Montreal, P.Q. [Quebec], commenced operations in the spring of 1935. This mill uses the solvent process and has a single unit extractor built by the Ford Motor Company. Besides oil and meal, soybean flour is also produced... This plant is now operating and has a capacity of about 100 to 150 bushels of beans a day. Only about 25 percent of the beans processed during the past year have been of Canadian origin, the remainder having been imported from the United States.

"A new mill was established in Stratford, Ontario, during the late fall of 1935 under the name of Soya Mills Limited. Mr. T.D. Bell, Toronto, is the president of this company and Mr. H.P. Trickey, vice-president and plant manager. An entirely new and up-to-date mill of the hydraulic press type was brought from England and installed so as to be ready to handle the 1935 crop. About 30,000 bushels of Ontario beans were bought and paid for at 95 cents per bushel f.o.b. Stratford. Additional beans were purchased in the United States. The beans were stored in the plant elevators and the plant commenced operating at about the beginning of January 1936. After the mill had run for some time and several thousand bags of meal had been produced, analysis showed that the press was incapable of extracting the oil below 10 to 11 percent. The feed companies demanded that the meal not carry more than 5 percent of oil. This unfortunate experience has given the company a serious setback. Orders are on hand for every pound of oil and meal that can be produced—oil at 7 to 8 cents per pound and meal at \$30.00 per ton by carlots, at the mill—and not a single pound has been sold due to the unsatisfactory nature of the product. Mr. Bell, the president, was interviewed in Toronto and stated that in all probability the present mill would have to be taken out and returned to England and the regular type of mill (as recommended in the first place by the manufacturers) installed in its place. It is the intention of the company to go right ahead as the management has every confidence of ultimate success.

"At Belle River, Ontario, an entirely new mill is now in the course of construction. Mr. James Edgar, of Edgar Sugar House, Detroit, Michigan, is building this plant under the name of the Edgar Soya Products, Limited. The intention is to produce oil, meal and flour. The mill is to consist of two Ford solvent extractors manufactured by the Ford Motor Company... This company intends to contract with growers for acreage. Although no attempt has been made to canvas the farmers contracts for more than 400 acres have already been secured. It is expected that this mill will have no difficulty in obtaining sufficient acreage to provide for its requirements."

Note: This is the 2nd earliest document seen (Aug. 2019) that mentions "Edgar Soya Products."

"The Dominion Linseed Oil Company plant at Baden,

Ontario... is operating a press of the expeller type at this point and is said to have been processing soybeans for 4 to 5 years" [i.e. since about 1931 or 1932]. "Mr. Livingstone, president of the Dominion Linseed Company, was interviewed in Toronto and states that in addition to soybean oil and meal his company is producing soybean flour at its plant in Owen Sound. This flour has been made by a special process and retains the entire oil content of the bean. It is of excellent quality, having been thoroughly tested at the University of Illinois in comparison with other soybean flours of United States origin and declared as equal or better than most of them for cooking purposes. This company is prepared to produce in addition a low oil content flour and plans to do so in the near future. The company is having considerable difficulty in marketing its soybean flour. Mr. Livingston claims that the large wheat milling companies control the bakeries and are strongly opposed to an additional flour being placed on the market, especially when there is any possibility of such flour being used in bread-making. He also claims that before he can definitely establish the value of this flour, both from the standpoint of nutrition and use, it will be necessary to show results that have been obtained in baking tests conducted by an impartial authority, such as the Dominion Department of Agriculture...

"The Christie Brown Company, biscuit manufacturers, Toronto, have been large buyers of soybean flour and have expressed a preference for the Dominion Linseed Oil Company's product over soybean flours which have been previously imported. The price of 6 cents per pound is considerably lower than 9 cents per pound, which was formerly paid for the imported flours."

Note: This is the earliest document seen (Aug. 2019) stating that Dominion Linseed Oil Co. was crushing soybeans in Ontario.

Tables on page B-5 show that the amount and value of soybeans, soybean oil, and soybean cake or meal imported to Canada have increased dramatically during the past 2 years. For example, during the one year from 1 April 1934 to 31 March 1935 some 4,325 bu of soybeans worth \$7,822 were imported. 64% of these soybeans were subject to a tariff totaling \$2,488.80. Yet during the 10 months from 1 April 1935 to 31 Jan. 1936 some 12,416 bu of soybeans worth \$13,918 were imported. Only 19% of these soybeans were subject to a tariff totaling \$2,242.74. "The imports of the last 10 months period represent the product of about 10,000 acres which might easily have been produced in Canada." Note: This is the earliest document seen (Jan. 2005) that gives soybean production statistics for Canada. Address: Div. of Forage Plants, Dominion Experimental Farms.

62. Farm Chemurgic Council. ed. 1936. Proceedings of the Second Dearborn Conference of Agriculture, Industry, and Science. Dearborn, Michigan: Farm Chemurgic Council; New York: The Chemical Foundation, Inc. 409 p. Held 12-14

May 1936 at Dearborn, Michigan.

• **Summary:** The conference is sponsored by the Farm Chemurgic Council and The Chemical Foundation, Inc. to "Advance the industrial use of American farm products through applied science." Mr. Wheeler McMillan, Permanent Chairman. Mr. Victor H. Schoffelmayer, Permanent Secretary. Contents: Introductory. 1. Council luncheon. 2. General opening session. 3. Symposium on new things. 4. Power alcohol. 5. Starches and sugars. 6. Plastics. 7. Cellulose. 8. Farm chemurgic banquet. 9. Soy bean. 10. Insecticides and fertilizers. 11. Closing general session. 12. Business session. 13. Appendix.

The Soy bean is the only crop discussed as such. Chapter IX (p. 243-67) contains the six papers presented: 1. Soy beans as a farm crop, by Mr. E.D. Funk; 2. The processing of soy beans, by Mr. Clark Bradley; 3. The rôle of soy bean oil in paint formulation, by Mr. E.E. Ware; 4. Soy bean proteins, by Mr. W.J. O'Brien; 5. Soy bean chemistry, by Dr. H.R. Kraybill; and 6. Mixing soy bean oil and tung oil, by Mr. F. Taggart. A discussion followed, moderated by Dr. C.C. Concannon.

Of the many exhibits, the application of vegetable oils in the manufacture of paints and the manufacture of molded plastics from farm grown materials were given most attention. Both of these projects were demonstrated in 5 different displays. Exhibitors included: Ford Motor Company, I.F. Laucks, Inc. and O'Brien Varnish Company.

Soy bean oil for tractors (p. 360): "If he [the farmer] can extract soy bean oil and run tractors on soy bean oil, he does not have to ship the soy beans to market and pay the freight, and let the industrialist extract the oil... he can run his Diesel tractor on the oil, and be ahead of the game all around." Also encourages farmers or groups of farmers to do the initial steps of processing their own soybeans to make industrial products. Note 1. This is the earliest document seen (April 2017) that mentions the use of soybean oil as a specifically "diesel" fuel. Many earlier documents on this general subject referred to its use as "artificial petroleum."

The casein plastics have increased their consumption during the depression. Their total now reaches 4 million pounds. They are used mostly in buttons and costume jewelry. "Of the soya bean plastics little can yet be definitely said as to prices or possibilities. Their characteristics are naturally similar to the casein materials and like them, they are comparatively expensive." Noted from the Chemurgic point of view is that the Ford plant output is said to be 300,000 pounds a year; 100,000 pounds of which represent soy bean material.

Financial report. Disbursements for the first year of the Council's activities ending April 30, 1936 (including organization expense of the First Dearborn Conference): Total Dearborn office—\$55,093.39. Total New York office (including printing and distribution of 40,000 copies of Proceedings of First Dearborn Conference)—\$44,567.41.

Total for the year—\$99,660.80. All financial support was supplied by the Chemical Foundation, Inc.

Conference attendance: 1000 attend second conference; 35,000 attend nationwide meetings. Geographically, public meetings have included every section of the country. “The actual number of meetings organized specifically to further the Council’s activities or at which the Council’s program was presented, was in excess of 100, and the combined total attendance is estimated in round numbers at about 35,000.”

The Soy Bean Committee (p. 391, 396-97). The meeting was called to order by Edward J. Dies, Executive Secretary of the National Soy Bean Processing Association [National Soybean Processors Association], Board of Trade Building, Chicago. Members present included E.D. Funk, Burlison, and Kraybill. Those present by invitation included Dr. J.W. Hayward of Archer Daniels Midland Co. (Milwaukee, Wisconsin), E.E. Roquemore of Allied Mills (Chicago, Illinois), E.F. Johnson and Lamar Kishlar of Ralston-Purina Co. (St. Louis, Missouri). Other members listed as being on the committee were Dr. A.A. Horvath, Chemist, Agric. Exp. Station, University of Delaware, Newark, Delaware. And Dr. Henry A. Gardner, Director, National Paint, Varnish & Lacquer Association, 2201 New York Avenue, N.W., Washington, DC. Mr. Adrian Joyce, President. The Glidden Company, 1963 Union Trust Building, Cleveland, Ohio. Note 2. This is the earliest document seen (Oct. 2005) showing that Dr J.W. Hayward is now working for Archer Daniels Midland Co.; an expert on soybean meal, he was formerly at the Univ. of Wisconsin.

“A sub-committee composed of Messrs. I.C. Bradley, president of the National Soy Bean Processors Association, Ware and Burlison, charged with certain work, found that the particular activity would now be carried on by the newly organized Soy Bean Laboratory at Urbana, which under the direction of the Federal government, will coordinate its work with that of the Experiment Stations of twelve cooperating states. Dr. Kraybill then sketched in broad outline aims and purposes of the new Laboratory and indicated potential benefits to all interests from grower to consumer.”

“On motion of Mr. Bradley the resignation of Mr. H.G. Atwood as Chairman of the Committee was accepted and Edward J. Dies, Executive Secretary of the National Soy Bean Processing Association, was elected as Chairman” (p. 396-97).

Photos show: (1) General view of the exhibition hall from the entrance. (2) Mr. Francis P. Garvan, father of the Farm Chemurgic Council and President of The Chemical Foundation. (3) Dr. Charles M.A. Stine, Mr. Williams Haynes, Mr. Howard E. Coffin.

Note 2. This is the earliest document seen (July 2019) that mentions the “National Soy Bean Processors Association” (spelled with “Soy Bean” written as two words).

Note 4. This is the earliest document seen (July 2019)

that mentions Edward J. Dies in connection with the National Soybean Processors Association. Note the unusual spelling of the name of the Association of which he is executive secretary. Address: Dearborn, Michigan; New York.

63. Herb. 1936. Tell me. *Quad City Times (Davenport, Iowa)*. June 17. p. 16, col. 2.

• **Summary:** “‘Its possible to take the boy out of the country but its absolutely impossible to take the country out of the boy,’ was the statement made by Howard Thompson, in charge of feed sales for the Honeymead people of Cedar Rapids... He says that about 60 per cent of the farmers and feeders endeavor to feed a balanced ration but that only about 10 per cent actually succeed in doing so.”

Note: It seems quite likely that this man, Mr. Thompson, works with the Andreas family at Honeymead Products.

64. Calkin, D.L. 1936. Report by Dr. Whitby of interview with Mr. D.L. Calkin of the Dominion Soya Products Company, Montreal. In: National Research Council of Canada. 1936. Proceedings of the Third Conference on Soybeans. Ottawa, Canada. 34 p. See Appendix B, p. B1-B10. Held on 30 June 1936 in the National Research Building, Ottawa, Ontario, Canada. [2 ref]

• **Summary:** Note: In several subsequent interviews in this report, the company name is given as Dominion Soya Industries Limited. Based on a phone conversation of 24 April 1936. Dominion Soya Products Co. uses an inexpensive solvent extraction plant developed by the Ford Motor Co. Aviation gasoline is used as the solvent, but it is not entirely satisfactory, since it leaves an odor in the finished product. Most of the plants processing soya beans in Canada are apparently using solvent extraction. Exceptions are (1) Soya Mills Co. (Mr. Tricky) [sic, Trickey; at Stratford, Ontario], using English-built oil expeller equipment, and (2) Dominion Linseed Oil Company, making whole-oil flour.

Soybean oil: The chief outlets for soya bean oil are to the paint manufacturers and the packers (including Canada Packers), which use it for the production of shortening, or of a refined, bland salad or cooking oil. “It is understood that the Ford Motor Company is now using soya bean oil exclusively for its car enamels.”

Soybean flour: The Ford Motor Co., in co-operation with the Bakelite Co., has developed a successful plastic from soya bean meal. Soya bean flour is being used in England for making sausages; it is claimed to have the advantage of holding the meat juices and of acting as an antioxidant (preventing rancidity). Dr. Rabinovitch of Montreal is in favor of using soy “flour in sausages, especially in the low-grade type known as ‘hot dogs.’ Dr. Rabinovitch on his trip to the north last summer took considerable quantities of soya bean flour and oil for use of the Eskimo. Canada Packers think well of its use in sausages... Brown of Bradley Foulds

in England used soya flour for finishing light textiles with good results, but found that in the case of heavy goods and finishes the flour tends to produce a slimy feel on the goods. Experiments on the use of soya flour in water paints were made by the Sherwin-Williams Co., Montreal. The objection was raised, however, that the solutions stank. In experiments in England in this connection the chief point stressed was the difficulty of getting the flour into solution... Experiments are in progress in Canada on the use of soya flour in the manufacture of explosives, presumably after nitration. Soya bean flour used as a glue in the manufacture of plywood from soft wood has the advantage of being more waterproof than any other glue known. On account of this property it was used for all walls and floors exposed to the weather at the Century of Progress Exhibition in Chicago [Illinois]. Soya bean glue is being made in Canada by the Hercules Glue Company and a small quantity by the Bulldog Grip Cement Co.”

“Mr. Calkin’s experience with Ontario beans has been that they have often been contaminated with shells, small stones, clay, etc. Furthermore, U.S. beans could be bought for 90¢–\$1.00 a bushel at a time when \$1.50 was being asked for Ontario Beans.

“The Co-operative Soya Bean plant in Ontario (at Milton) in which the Archer Daniels Midland Company is also interested is not now apparently operating. It appears that the secretary of the Co-operative decamped with the funds.”

Also describes (p. B5-10) several experiments conducted by J.B. Phillips, MSc, PhD (July 1933 in Montreal) on “beating experiments with sulphite pulp and soya flour” using Dominion Soya Powder as a filler and size for paper. And “Utilization of Dominion Soya in coatings for papers.” Address: Dominion Soya Products Company, Montreal, Quebec, Canada.

65. Breedlove, L.B. 1936. Soy bean—The magic plant: Industrial uses already manifold with more in prospect. Article XV. *Chicago J. of Commerce and La Salle Street Journal*. July 7. p. 11.

• **Summary:** Introduction: Casein and soy bean glues. Lecithin from new plants. Use in ice cream and soup tablets (as well as linoleum, printing inks, and lubricating oils). Industrial forms using soy beans. New laboratory to study uses (regional laboratory in Illinois).

Casein is widely used to make glue. The casein (about 18% by weight) is used with borax water and glycerine in a state of hydrophilic solution to form the highly cohesive jellies called glues.

“The fir and plywood industry of the Pacific coast now uses extensively glue made with soy bean casein. Over half of the box shock plywood industry-cut boxes made for assembly at the shipper’s plant—in the southern and eastern part of this country recently has adopted soy bean glue in

preference to other glues. Tests by chemists of the plywood industry have proven that glue made from soy bean oil will not dissolve in water. The total consumption of soy bean glue for various uses in the wood working industries of this country is nearly 1,500 tons per month.

“Lecithin from new plants: Lecithin is used to give chocolate candy a gloss. Gumdrops manufacturers put in a drop of this substance to prevent hardening in storage. Cotton textile plants produce a soft, supple finish to their goods by the use of lecithin. Tanneries want their chrome leather to take up plenty of grease and lecithin has been found to be the best agent to increase the absorption.

“During the last decade mills for commercial extraction of lecithin from soy beans were successfully operated in Germany and Denmark, and, according to [Bruno] Rewald, over one million pounds are used annually in the German margarine industry. For a number of years soy bean lecithin was imported into the United States in competition with the lecithin extracted from eggs, but recently two mills were constructed in this country to supply the domestic demand. Lecithin is used in margarine to secure a better distribution of the fat.

“A solid made by vulcanization of soy bean oil with sulphur, known as factice, a compounding ingredient for the rubber manufacturer, was introduced last year... This brown compounder is used to increase the aging, curing, strength and wear resisting qualities of automobile tires and other heavy rubber products,....”

The following is a partial list of firms which buy soy beans and make industrial [non-food, non-feed] products from them: Archer-Daniels-Midland Company, Milwaukee, Wisconsin makes refined oils and kindred products. Armstrong Cork Company, Lancaster, Pennsylvania makes cork coverings and linoleum. Armstrong Paint and Varnish Works, Chicago, Illinois makes soaps and paints. The Blanton Companies, St. Louis, Missouri makes soaps. Davies-Young Soap Company, Dayton, Ohio makes soaps. Detroit Graphite Company, Detroit, Michigan makes soy bean oil varnish. E.I. duPont de Nemours and Company, Wilmington, Delaware makes paints, Duco finishes, plastics. Ford Motor Company, Dearborn, Michigan makes plastic automobile parts. Fischer’s Surfa-Saver, Inc., Cincinnati, Ohio makes soft soap. Funk Brothers Seed Company, Bloomington, Illinois makes oil meal feeds. The Glidden Company, Chicago, Illinois makes paints, varnishes, lacquers. I.F. Laucks, Inc., Seattle, Washington, and Portsmouth, Virginia makes glues. Paintcraft Company, Galesburg, Illinois makes paint. Peterson Core Oil and Manufacturing Company, Chicago, Illinois makes core oils. Procter and Gamble, Cincinnati, Ohio makes soaps. Purina Mills, St. Louis, Missouri, makes oil meal feeds. Sherwin-Williams Company, Chicago, Illinois makes paints, varnishes, lacquers. A.E. Staley Manufacturing Company, Decatur, Illinois makes refined oils and kindred products.

Stamford Rubber Company, Stamford, Connecticut makes rubber compounders. Woolsey Paint and Color Company, Jersey City, New Jersey makes paints and varnishes.

The Bankhead-Jones Act of 29 June 1935 authorizes the USDA to establish several specialized laboratories in the major agricultural regions of this country. The department last month designated the College of Agriculture of the University of Illinois as the regional government research laboratory to serve the 12 north central states. The 3 objectives of the laboratory are discussed. "It is expected that twenty research men will soon be at work in the 6,000 square feet of space that the new laboratory will occupy." Address: Staff member, Chicago Journal of Commerce.

66. *Williamsburg Journal Tribune (Williamsburg, Iowa)*. 1936. On motion the following Domestic Animal Claims were allowed... July 30. p. 7, col. 6.

• **Summary:** "Honeyamead Prod., supp Co Home-\$129.50."

Note: The meaning of this entry is unclear except that it shows Honeyamead Prod. to exist on this date.

67. Plambeck, Herbert. 1936. Perfect system for speeding up work: bins, racks and tracks do job in 10 minutes. Clinton County man finds overhead storage bunks big aid. *Quad City Times (Davenport, Iowa)*. Sept. 20. p. 34, col. 1-2.

• **Summary:** "While corn or other grains are running into the movable feed device from above, pellet-size Honeyamead supplement can be shoveled into the hopper from the side."

68. Archer-Daniels-Midland Co. 1936. New process soybean oil meal (Ad). *Proceedings of the American Soybean Association* p. 30.

• **Summary:** Note: This same full-page ad, slightly modified, was published in the 1935 issue of these Proceedings (p. 22).

The company now has soybean mills at Chicago, Illinois; Toledo, Ohio; Minneapolis, Minnesota; Milwaukee, Wisconsin; Buffalo, New York.

This same full-page ad was published again in the 1937 edition (p. 70). Address: Minneapolis, Minnesota.

69. **Product Name:** Soy Bean Oil, and Soy Bean Oil Meal.

**Manufacturer's Name:** Archer-Daniels-Midland Co.

**Manufacturer's Address:** Buffalo, New York.

**Date of Introduction:** 1936 September.

**Ingredients:** Soybeans.

**New Product-Documentation:** Ad in *Proceedings of the American Soybean Assoc.* 1936. [Sept.] p. 30. "New process soybean oil meal." The company now has soybean mills at Chicago, Illinois; Toledo, Ohio; Minneapolis, Minnesota; Milwaukee, Wisconsin; Buffalo, New York.

70. Bohstedt, G. 1936. Feeding soybeans and soybean oil meal. *Proceedings of the American Soybean Association* p. 25-26, 28. 16th annual meeting. Held 14-16 Sept. in Iowa. [1

ref]

• **Summary:** "One of the most amazing things in the world of feeding stuffs has been the increase in soybeans and soybean oil meal. The protein of these feeds is, or can be made to be, very high grade protein with respect to its biological value for certain classes of livestock..."

Whole soybeans, ground or unground, work well in the rations of cattle and sheep. "Soybeans are not used at all extensively for horses, although when fed in limited amounts or as a minor part of the concentrated ration they have proved satisfactory. For pigs, soybeans whether raw or cooked or otherwise heat treated, should be used with great caution on account of the tendency of soybeans to produce soft pork." Pigs "fed in dry lot should not have the ration balanced with soybeans until the pigs weigh about 125 pounds. Pigs on pasture, that do not need anywhere near as much protein feed to balance their ration, may be fed soybeans beginning at a lighter weight." Raw soybeans are poorly utilized by young pigs. "Cooked or toasted soybeans, to be sure, are very much more palatable and efficient from the standpoint of producing gains, but the high oil content of cooked soybeans naturally produces soft or oily pork.

"Soybean oil meal in rations of pigs and poultry: For several years a nutritional research program with soybean oil meal has been conducted at the University of Wisconsin, which project has been supported by Allied Mills, Inc. This work was conducted on an industrial fellowship basis, where Dr. J.W. Hayward, during two years, was the research worker or industrial fellow who had immediate supervision of the work, and where Dr. H.J. Deobald has succeeded" [after Dr. Hayward left to work for ADM]. It was found that soybean oil meal must be heated at the proper temperature for the correct time in order to provide the best nutritional value. Address: PhD, Univ. of Wisconsin.

71. Hayward, J.W.; Steenbock, H.; Bohstedt, G. 1936. The effect of cystine and casein supplements upon the nutritive value of the protein of raw and heated soy beans. *J. of Nutrition* 12(3):275-83. Sept. [18 ref]

• **Summary:** "Several investigators have analyzed the soy bean to determine the completeness of its protein." A list of the four earliest is given, starting with Osborne and Clapp (1907). They have shown "that the protein of the soy bean contains in quantity all of the essential amino acids with the possible exception of cystine. Mitchell and Smuts (1932) and Shrewsbury and Bratzler (1933) claimed a quantitative deficiency of the amino acid, cystine," in soy bean protein.

The addition of 0.3% l-cystine to raw soy beans or the application of sufficient moist heat "practically doubled the nutritive value of the protein."

The summary ends: "Since heating of the soy bean gave its protein a nutritive value practically equal to the nutritive value of the protein of the raw soy bean when supplemented with cystine, it appears that heating the soy bean caused the

cystine fraction of the protein to become available.” Address: Depts. of Agricultural Chemistry & Animal Husbandry, Univ. of Wisconsin, Madison.

72. Hayward, J.W. 1936. The nutritive value of soybean meal as affected by the method of processing soybeans. *Proceedings of the American Soybean Association* p. 29, 31-32, 34-35. 16th annual meeting. Held 14-16 Sept. in Iowa. [1 ref]

• **Summary:** The “solvent meal is spoken of as ‘New Process’ soybean oil meal and the hydraulic and expeller meals as “Old Process” soybean oil meal. Gives details on the process and temperatures used in solvent extracted, hydraulic pressed, and expeller pressed meals. In solvent extraction, the “soybeans are cracked and heated to about 140°F. for about 10 minutes before going to grinding rolls which form them into thin flakes. This cracking, pre-heating, and grinding step is a continuous one. The temperature of the flakes drops to about drops to about 113°F before they are conveyed to the extracting tower.” The hexane extraction takes place at about 113°F.

Expeller pressed soybeans are first cracked then dried to 2% moisture. They are then held in a tempering apparatus at temperatures ranging from 212° to 240°F. for about 10-15 minutes—before expelling the oil.

Research published in the March issue of the *Journal of Nutrition* showed that properly heated meals “contained proteins which had about twice the nutritive value of the raw soy beans or low temperature meals.”

Note: This is the earliest document seen (March 2006) that uses the term “expeller pressed” (or “press” or “presses” or “pressing”) in connection with mechanical pressing of the oil from soybeans. Address: PhD, Director of Nutritional Research, Archer-Daniels-Midland Co., Milwaukee, Wisconsin.

73. *Chicago Daily Tribune*. 1936. Grain board begins trade in soy beans. Oct. 6. p. 29.

• **Summary:** “Trading in soy beans for future delivery was inaugurated yesterday [Oct. 5] on the Chicago Board of Trade. It was estimated 300,000 bushels were traded during the day, and the bulk of the purchase and sales was credited to processors.” A section of the corn pit was reserved for trading soy bean futures; it was crowded when the market opened yesterday.

The opening price of No. 2 yellow soy beans, the “contract grade,” for delivery during December in Chicago public elevators was \$1.20 a bushel. Austin D. Sturtevant of the Bartlett-Frazier company bought 5,000 bushels at that price from F.S. Lewis, who represented Archer-Daniels-Midland company. A photo (p. 31) shows Sturtevant and J.M. Chilton, of ADM’s grain department, looking at the Board’s ticker tape for the first quotation on soy bean futures. “Chilton [or was it F.M. Lewis] sold the first lot, 5,000

bushels, to Sturtevant at \$1.20 a bushel.”

Fluctuation in the price of soy beans is limited to 4 cents per day above or below the average closing price of the previous day. “Commission rates are ¼ cent per bushel.”

74. *Time*. 1936. “Little honorable plant.” Oct. 12. p. 76, 78, 80. [1 ref]

• **Summary:** “Last year ‘the little honorable plant’ put \$35,000,000 into the pockets of U.S. farmers, outranking in value rye and barley. Soybean trading had grown so active that the [Chicago] Board of Trade could no longer overlook it as a potential source of commissions. First futures transaction in soybeans in the Pit this week was 5,000 bu. sold by Archer-Daniels-Midland Co. to Bartlett-Frazier Co. at \$1.20 per bu...

“A Yankee shipmaster brought the first soybeans to the U.S. in 1804... Yet no more than 500,000 acres were planted to soybean in the U.S. in any one year until 1917.”

“In the U.S. some 600,000 farmers grow soybeans in 27 states.” Illinois produced more than half the total U.S. crop last year.

“Food. Soybeans are ideal for diabetics because they contain little sugar, no starch. They do, however, contain more than three times the protein of wheat or eggs, more than twice that of lean meat. Soybean vitamins are A, B-1, B-2, D, E. For vegetarians and diabetics, the bean is converted into cheese, soup, butter, salad oil, macaroni, breakfast food milk (from grinding the beans in water). To bakers soybeans mean a new bread which is expected to break sales records. Last year vegetable shortenings and other lard substitutes required no less than 52,450,000 lb. of soybean oil, compared to a 1934 consumption of 2,735,000 lb.”

“Factory. Each ton of soybeans yields 30 gallons of oil and 1,600 lb of meal. Industry takes the oil and the meal, uses one or both to make glue, paints, combs, candles, radios, buttons, axlegrease, paper size, explosives, linoleum, oilcloth, printer’s ink, billiard balls, rubber substitutes, cigaret holders, Christmas tree ornaments. Last year U.S. manufacturers consumed 91,166,000 lb. of soybean oil, of which 2,550,000 lb. went into soaps, 4,800,00 lb. into linoleum and oilcloth, 13,000,000 lb. into paints and varnishes.”

“Ford & Future... The number 1 U.S. soybean man is Henry Ford. His reason: ‘If we want the farmer to be our customer, we must find a way to be his customer.’ Henry Ford began investigating the beans in 1930, spent more than \$1,000,000 in the next few years growing them, finding out how they could be used. Few months ago the River Rouge works got a \$5,000,000 addition in the shape of a soybean processing plant. Into Ford cars at present go the product of some 60,000 acres of soybeans. The oil goes into glycerine for shock-absorbers, enamel for body finishes [paints], binder for foundry cores. The meal, turned into plastics,

rolls off the assembly line as horn buttons, gearshift knobs, window-trims, distributor cases.

“Said Mr. Ford few months ago: ‘You will see the time when a good many automobile parts will be grown.’”

A portrait photo shows Henry Ford with the caption, “Motormaker Ford. A bean’s best friend.”

Note: This is the earliest document seen (Nov. 2013) that mentions the “assembly line” in connection with Henry Ford. Mass production was pioneered on the Ford moving assembly line in April 1913 at the Highland Park plant—and with it began the rise of the consumer economy.

75. LeClerc, J.A. 1936. Partial list of manufacturers of soybean flour. Washington, DC: Food Research Div., Bureau of Chemistry and Soils, USDA. 1 p. Oct. 19. First ed, Oct. 1933. Unpublished manuscript.

• **Summary:** The following are listed: 1. Funk Brothers, Bloomington, Illinois. 2. A.E. Staley Manufacturing Co., Decatur, Illinois. 3. Shellabarger Grain Products Company, Decatur, Illinois. 4. Soya Millers, Inc., Seattle, Washington. 5. American Soya Products Corp., Evansville, Indiana. 6. Fearn Soya Food Products, 355 W. Ontario Street, Chicago, Illinois. 7. Allied Mills, Inc., Peoria, Illinois. 8. The Glidden Co., Union Trust Bldg., Cleveland, Ohio. 9. Archer-Daniels-Midland Company, Chicago, Illinois. 10. Madison Foods, Madison, Tennessee. 11. Battle Creek Food Factory, Battle Creek, Michigan. 12. Cereo Company, Tappan, New York. 13. LaSierra [La Sierra] Industries, Ontario, California. 14. MacDowell Brothers, Brookville [sic, Brockville], Ontario [Canada]. 15. The Dietetic Supply House, Inc., 1750 W. Van Buren St., Chicago, Illinois. 16. Hilcrest Health Products, 120 Carroll Ave., Takoma Park, Maryland. 17. The Wilbur-Gardner Company, Glendale, California. 18. General Soya Corp., 120 Broadway, New York, New York. 19. Soybean Products Company, 4900 W. Flournoy Street, Chicago, Illinois. 20. El Molino Mills, 5604 Valley Blvd., Los Angeles, California. 21. Mitchell Milling Co., 5613 Lexington Ave., Los Angeles, California.

Note: This is the earliest document seen (Sept. 2009) concerning El Molino Mills and soy. Address: Washington, DC.

76. Bohstedt, G. 1936. Feeding soybeans and soybean oil meal. *Flour & Feed* 37(6):18, 19. Nov.

• **Summary:** “For several years a nutritional research program with soybean oil meal has been conducted at the University of Wisconsin, which project has been supported by Allied Mills, Inc. This work was conducted on an industrial fellowship basis, where Dr. J.W. Hayward, during two years, was the research worker or industrial fellow who had immediate supervision of the work, and where Dr. H.J. Deobald has succeeded him...”

“One of the main objects has been the effect of varying degrees and duration of temperature employed in the process

of manufacturing expeller soybean oil meal, and along with it hydraulic and solvent soybean oil meal. Pigs, poultry and laboratory rats were used for experimental animals...” Address: Univ. of Wisconsin.

77. Finley, John T. Assignor to Archer-Daniels-Midland Company (A corporation of Delaware). 1936. Soybean compound for aging grain distillate. *U.S. Patent* 2,066,263. Dec. 29. 2 p. Application filed 21 Dec. 1933.

• **Summary:** “The present invention relates to the production of a dehydrated pure food compound, to be used in whiskey, grain distillate, rum or brandy as an aging compound, and has particular reference to an improved type of compound comprising soy bean products and method of making the same.”

“It has been my discovery that when alcohol or strong alcoholic solutions are brought in contact with a substance of a high protein and organic mineral character, and these permitted to lager therewith during a short course of time, the raw taste and ethanol odor of new alcohol distillates will be removed and a smooth taste of somewhat aged character imparted thereto, whether the protein substance and organic mineral crude or refined continues to remain in the alcoholic solutions or is removed therefrom...” Address: Chicago, Illinois.

78. **Product Name:** Soybean Oil [Clarified Raw, Excelsior Non-Break, Superb Varnish, Snow Flake Heavy Bodied, Amber Raw, Scientific Pale Boiled, XX Refined, ZYMO, Ink Oil, or Soybean Fatty Acids].

**Manufacturer’s Name:** Archer-Daniels-Midland Co.

**Manufacturer’s Address:** Box 603, Milwaukee, Wisconsin.

**Date of Introduction:** 1936.

**New Product–Documentation:** Gray. 1936. All About the Soya Bean. p. 121. International Inst. of Agriculture. 1936. *Le Soja dans le Monde* [The Soybean in the World]. See: Manufacturers of edible soy products. p. 205. “Refined soy oil.” Letter from Dick Wallace of ADM. 1981. Sept. To William Shurtleff at Soyfoods Center. ADM started producing edible soy oils in 1930.

79. Gray, George Douglas. 1936. All about the soya bean: In agriculture, industry and commerce. London: John Bale, Sons & Danielsson Ltd. ix + 144 p. Introduction by James L. North. Late curator, Royal Botanic Gardens, Regent’s Park, London. Index. 28 cm. [19 ref]

• **Summary:** A comprehensive, early work on the soybean. Gray was a Scotch physician. Contents: 1. Introducing the soya bean. 2. The soya bean plant and its cultivation. 3. The soya bean as food: Dietetics, immature green beans, mature dried beans, soya bean coffee, soya bean chocolate, soya bean sprouts, soya bean milk, soya bean flour (incl. Berczeller flour, Soyvita bread made by Messrs. Wm. Beattie, Ltd., Glasgow), bean curd [tofu], soy (also called

# ALL ABOUT THE SOYA BEAN

IN AGRICULTURE, INDUSTRY  
AND COMMERCE

BY

**GEO. DOUGLAS GRAY, M.D., C.B.E.,**  
*Late Medical Officer to H.B.M. Legation, Peking, China*  
*Lieut.-Colonel, Retired*

WITH AN

INTRODUCTORY CHAPTER

BY

**JAMES L. NORTH**  
*Late Curator, Royal Botanic Gardens,*  
*Regent's Park, London*

LONDON

**JOHN BALE, SONS & DANIELSSON, LTD.**  
83-91, GREAT TITCHFIELD STREET, W.1

1936

soya bean sauce, Chinese bean sauce, or shoyu), miso, fermented bean curd (p. 66-67). 4. Soya bean oil. 5. Soya bean trade. 6. The soya bean in agriculture.

Addenda: Soya bean products in the USA. Dieting and recipes. Statistics. India. Bibliography.

In the chapter on "Soya bean oil" we read (p. 75): "In England, the bean oil trade is carried on by the following firms:—The British Oil and Cake Mills Ltd., the ordinary shares of which are held by Lever Bros., Ltd., so that they are a branch of Unilever, Ltd.

"The Hull Oil Manufacturing Co., Ltd., Hull, now merged in the foregoing concern.

"The Premier Oil Extracting Mills, Ltd., Hull.

"Messrs. Wray Sanderson & Co., Hull.

"The Medina Refinery Ltd., Deptford, London.

"Messrs. J. Bibby & Sons Ltd., Liverpool.

"The Erith Oil Works Ltd., Erith" [Kent].

The first addendum, titled "Soybean products exhibited by the American Soybean Association" (at Washington, DC, p. 120-24) lists the following companies and each of the soy products that they manufacture: American Lecithin Corp.

(Atlanta, Georgia), Archer-Daniels-Midland Co. (Milwaukee, Wisconsin), Armstrong Paint and Varnish Works (Chicago, Illinois), Battle Creek [Food] Factory (Battle Creek, Michigan), The Blanton Co. (St. Louis, Missouri), Cereo Co. (Tappan, New York), The Davies-Young Soap Co. (Dayton, Ohio), Detroit Graphite Co. (Detroit, Michigan), Eastern Health Food Stores Association (Washington, DC), Funk Brothers Seed Company (Bloomington, Illinois), Harshaw Essential Foods, Inc. (Cleveland, Ohio), Keystone Macaroni Mfg. Co. (Lebanon, Pennsylvania), Kloss, Jethro (Takoma Park, Maryland: Fresh [soybean] milk. Pumpkin pie [soybean milk and soybean flour]. Soybean cheese. Soybean bread [20% soybean flour]. Soybean buns. Soybean sprouts. Soybean cake), Laucks, I.F., Inc. (Bloomington, Illinois—home office, Seattle, Washington), Madison Food Company (Madison, Tennessee; Vigorost, Cheese [Tofu], Soybeans canned with Tomato, Soybeans canned plain, Dixie Fruit Crackers), Mead Johnson and Co. (Evansville, Indiana; Makes Sobee [Infant Formula]), Oriental Show-You Co. (Columbia City, Indiana), Paintcraft Co. (Galesburg, Illinois), Prince Macaroni Mfg. Co. (Boston, Massachusetts), Purina Mills (St. Louis, Missouri; makes Cresol disinfectant, Purina turkey and growing fattening chow, Purina lay chow, Purina egg chowder, Purina breeder egg chowder, Purina fitting chow, Purina rabbit chow, Purina chick Growena chow, Purina 34% cow chow, Purina chowder, Purina bulky cow chow, Purina 24% cow chow, Purina pig and hog chow, Protena all mash starting and growing food), Shellabarger Grain Products Company (Decatur, Illinois), Soyex Company, Inc. (Nutley, New Jersey), Staley Sales Corporation (Decatur, Illinois), The Stamford Rubber Supply Company (Stamford, Connecticut), Dr. Roy Monier, President, Board of Managers, State Hospitals (Jefferson City, Missouri), United Drug Company (Boston, Massachusetts), Vi-tone Company (Hamilton, Canada), Woolsey Paint and Color Co., C.A. (Jersey City, New Jersey), Bureau of Chemistry and Soils, Department of Agriculture (Washington, D.C.). Page 120 adds: "The exhibit also contained some 200 soybean products, mostly foods, brought from the Orient by Mr. W.J. Morse, Senior Agronomist, Department of Agriculture, Washington, DC, U.S.A." Note 1. Morse and P.H. Dorsett were in East Asia from 1929 to 1931, when they collected many samples of soybeans and soyfoods.

In the second addendum, recipes, the author notes that soy flour is widely used in diabetic diets. Two leading firms who make soy flour in England and who also incorporate it in various products are: Soya Foods, Ltd., Rickmansworth, Herts, and Dietetic Foods Ltd. 124 Victoria St., London, S.W. 1. "The former specialize in Soyolk which is flour prepared on the principles laid down by Professor Berczeller; it is a mealy powder, fatty to the touch. The latter firm are the sole distributors in Great Britain of the well-known 'Heudebert' Dietetic Food products, a French concern which

makes different kinds of diabetic breads.” The following recipes are then given; \* = Calls for Soyolk soy flour: Soybeans, southern style. Soybean salad. Roasted soybeans [like dry-roasted peanuts]. Soybean croquettes. Soybean soufflé. Stuffing for baked fish\*. White sponge pudding\*. Shortbread\*. Madeira cake\*. Soya soup à la Reine (uses Heudebert soya flour). Soya chocolate (with soya flour). Soya vegetable soup (with soya flour). Soya bean sprout salad.

Note 2. This is the earliest English-language document seen (Jan. 2013) that uses the term “soya bean sprouts” to refer to these sprouts. Address: M.D. (Scotch physician), C.B.E., England. Late medical officer to H.B.M. Legation, Peking, China. Lieut.-Colonel, Retired.

80. *Chicago Daily Tribune*. 1937. Investors’ guide: Archer-Daniels-Midland. Jan. 30. p. 24.

• **Summary:** “Archer-Daniels-Midland company is a leading producer of linseed oil of all varieties. In recent years it has diversified activities somewhat, turning out soy bean oil and meal and various vegetable oils.” Then detailed financial information about the company is given.

81. Hayward, J.W.; Halpin, J.G.; Holmes, C.E.; Bohstedt, G.; Hart, E.B. 1937. Soybean oil meal prepared at different temperatures as a feed for poultry. *Poultry Science* 16(1):3-14. Jan. [15 ref]

• **Summary:** The authors reported that soybean oil meal as the sole protein supplement to grain rations fed to hens was unsatisfactory for the production of hatching eggs. They also found that the hatchability of eggs was improved when small amounts of dried milk and meat scraps were added to the rations.

These studies were made possible by a fellowship supported by Allied Mills, Inc. Address: Depts. of Poultry Husbandry, Animal Husbandry, and Agricultural Chemistry, Univ. of Wisconsin, Madison.

82. Johnson, E.F. “Soybean.” 1937. Is the soybean over-exploited? *Grain & Feed Review* 26(5):14-18. Jan.

• **Summary:** The author, a supporter of the soybean for 25 years, feels the potential for industrial uses of the soybean is being exaggerated.

Contents: Introduction. Soybean flour. Green vegetable soybeans. Lecithin. Soybean oil. Soybean oil vs. linseed oil. Soybean oil vs. cottonseed oil. Soybean oilmeal. Foreign competition. Industrial use of soybean oilmeal: I.F. Laucks and glue, The Glidden Company and paper sizing, Archer-Daniels-Midland Company and soybean flakes used to build a larger and firmer head on a glass of beer. Soybean oilmeal in semi-plastics (not much is used). Industrial exploitation of cornstalks. Soybean crop and equipment increase (Four major factors have contributed to the rapid rise in soybean production: (1) Net return per acre for soybeans compared

with oats and other farm crops; (2) The peculiar resistance of soybeans to drouth and insect damage, especially chinch bugs; (3) The benefits from growing the crop, both related to crop rotation and soil fertility. And the government’s attempt to control surpluses of other crops. Farmers have been paid from \$6 to \$12 to grow soybeans instead. In response to these, soybean “processing plants have sprung up like mushrooms everywhere”).

Investments and crushing capacity. The soybean is still a youngster. Misleading advertisements (by industrial manufacturers). Processors not over-exploiting. Southern soybean expansion.

A photo shows S.F. “Soybean” Johnson. Address: Associated with Ralston Purina, St. Louis, Missouri. Chairman, Statistical Committee, National Soybean Processors Assoc.

83. *Revista de Agricultura (Cuba)*. 1937. La pequena planta honorable [Little honorable plant]. 20(2):67-69. Feb. [1 ref. Spa]

• **Summary:** This is a translation by Prof. Miquel A. Valdiva of the *Time* magazine article of 12 Oct. 1936. Discusses the value of the soybean crop to the United States, the increasing acreage planted in soybeans, their uses as food, and in the factory, and the utilization of the beans in the Ford Motor Co. plant. Address: Chicago, Illinois, USA.

84. Thomas, F.E. 1937. Pioneers. Robert Kennedy Duncan. *Arkady Review (Manchester, England)* 14(2):37-40. April.

• **Summary:** A detailed history, with a photo, of the American man from whom the trade name Arkady was derived (from R.K.D.). Of Irish stock, he was born on 1 Nov. 1868 and died in Pittsburgh, Pennsylvania, on 18 Feb. 1914. He developed Industrial Fellowships, working with the Mellon brothers of Pittsburgh. Duncan was a scientist to whom Mr. George S. Ward brought his bakery problems for solution, with the happy result that the Arkady formula was worked out.

85. *Chicago Daily Tribune*. 1937. Match maker earns million in half a year. Sept. 2. p. 23.

• **Summary:** Starts with an unrelated discussion of Diamond Match company. Then: Archer-Daniels-Midland earned a net profit of \$2,967,295 for the fiscal year ended June 30. This equaled \$5.10 per share on its common stock. These results were up almost 57% from the previous year, when the company earned a net profit of \$1,891,612, or \$3.05 a share. “The company manufactures linseed and soy bean products.”

86. Archer-Daniels-Midland Co. 1937. New process soybean oil meal (Ad). *Proceedings of the American Soybean Association* p. 70.

• **Summary:** A full-page black-and-white ad. The company now has soybean mills at Chicago, Illinois; Toledo, Ohio;

Minneapolis, Minnesota; Milwaukee, Wisconsin; Buffalo, New York. "Browned new process meal and toasted new process flakes are available at the same price as regular meal." Address: Minneapolis, Minnesota.

87. Hayward, J.W. 1937. The nutritive value of soybean oil meal prepared by the different methods of oil extraction. *Oil and Soap* 14(12):317-21. Dec. [16 ref]

• **Summary:** A review of the literature. Address: Dep. of Nutritional Research, Archer-Daniels-Midland Co., Minneapolis, Minnesota.

88. Archer-Daniels-Midland Co., Soybean Div. 1937? 44% protein. New process soybean oil meal and soybean flakes. Milwaukee, Wisconsin: ADM. Bulletin No. 5. 6 p. \*

• **Summary:** This 6-page booklet discusses the feeding value of soybean oil meal.

89. *Gazette (The) (Cedar Rapids, Iowa)*. 1938. Claims allowed. Jan. 9. p. 31, col. 3.

• **Summary:** "Andreas & Son, R.P., grading \$28.12."

Note: We are unable to find any records for "Reuben & Sons" or for "Andreas & Sons" in [www.newspapers.com](http://www.newspapers.com) (July 2020).

90. National Farm Chemurgic Council, Inc. 1938. Official program—Fourth Annual Chemurgic Conference of Agriculture, Industry and Science. New York, New York. 8 p. 18 cm.

• **Summary:** On the cover: The conference will be held at the "Hotel Fontenele, Omaha, Nebraska. April 25, 26, 27, 1938. Purpose: To advance the industrial use of American farm products through applied science."

"Tuesday, April 26. 9:15 A.M. Soybean section: Planning a soybean agenda for next year. Presiding: Edward J. Dies, Chairman, Soybean Committee. 'Soybean oil,' H.R. Kraybill (Purdue Univ., West Lafayette, Indiana), Lamar Kishlar (Ralston Purina Co., St. Louis, Missouri), E.E. Ware (Sherwin-Williams Co., Cleveland, Ohio). 'Soybean oilmeal,' J.W. Hayward (Archer-Daniels-Midland Co., Minneapolis, Minnesota), E.S. Dyas (Iowa State College, Ames, Iowa). 'Solving problems of southern soybean growers,' C.O. Eddy (State Experiment Station, Baton Rouge, Louisiana), Jacob Hartz (Stuttgart, Arkansas), Walter Godchaux (New Orleans, Louisiana).

"General soybean section. Presiding: Eugene D. Funk, Bloomington, Illinois. 'Work of the U.S. Regional Soybean Industrial Laboratory,' O.E. May, Director, U.S. Regional Soybean Industrial Laboratory, Urbana, Illinois. 'Value of recent developments in soybean oil to technical trades,' M.F. Taggart, (O'Brien Varnish Co., South Bend, Indiana). 'The story of soybean glue,' Hugh F. Armstrong, (I.F. Laucks, Inc., Portsmouth, Virginia). 'Past and future prospects for utilization of soybean products,' E.F. Johnson, (President,

National Soybean Processors Association). Address: R.A. Boyer (Ford Motor Co., Dearborn, Michigan). General discussion.

The conference also included four luncheons, an agrol session (agricultural alcohol), a chemurgic banquet, a closing general section, an open form near the end, with Wheeler McMillen (President, National Farm Chemurgic Council) presiding. Address: 654 Madison Ave., New York, N.Y.

91. *Mt. Vernon Hawkeye-Record & Lisbon Herald (Iowa)*. 1938. Mrs. Andreas taken on Mother's Day. May 12. p. 1, col. 7.

• **Summary:** Mrs. R.P. Andreas [born Lydia Barbara Stoltz; the wife of Reuben Peter Andreas and mother of Dwayne and Lowell Andreas, etc.]. This front-page article begins with a portrait photo of Mrs. Andreas.

"Mother's day, this year of 1938, removed Lydia Barbara Andreas from a wonderful influence to a radiant memory. After a year of illness her spirit rests in the eternal and her deeds do follow her and remain to bless.

"Hers was a life of gladness wrapped in kindness, sympathy and helpfulness which wove itself into the life of the community and lives of the people. Out of her unusually happy disposition she knit the fabric of beauty that encircled all who knew her and took form in uplift and helpfulness.

"The virtues of her life were beautiful little secrets that went out in words of sympathy and gifts that lifted. Many a youth will long remember her as a beautiful fairy that in time of need was present and when little hills of difficulty came in the way, she almost miraculously appeared and lifted them over. These fine virtues are known in many a life and are not absent in various societies.

"Her life in charity and philanthropies was the beauty of silent silences and secret secrets. Her joy was doing the needed helpful thing and her life is indeed a jeweled remembrance.

"Mrs. Andreas' life had its inception Nov. 13, 1882 in Sterling, Illinois, the daughter of Bernard and Margaret Hummel Stoltz. She was educated in the schools of Sterling and early became a member of the Evangelical church, She was naturally a Christian in deed as well as fact. Hers was an applied Christian life, ever helpful and gentle.

"Her marriage to R.P. Andreas took place Nov. 27, 1902 in Sterling, where they had their home until moving to Worthington, Minnesota. In 1922 they came to Lisbon. Beside the husband, she is mourned by six children, Osborne S., Albert M., Glenn M., and Dwayne O., all of Cedar Rapids; Mrs. Lenore J. Sober and Lowell W. of Lisbon; three grandchildren, Perry Andreas of Oak Park, Illinois, Betty Jo Ann Andreas and Sharon Lee Sober; her father Bernard Stoltz; four sisters, Mrs. Kathryn Jameson of St. Paul, Minnesota, Mrs. Pauline Herrick of Cedar Rapids; Mrs. Margaret Hey of Dixon, Illinois, and Mrs. Marie McKenzie of Crystal Lake, Illinois, and one brother, Albert Stoltz of

Mount Vernon.

“Funeral Services were held at the home Tuesday afternoon with Rev. G.A. Stauffacher of the First Evangelical Church in Cedar Rapids, assisted by Rev. Philip Brunn. Mrs. Dora Wiles of Sterling, Illinois, sang two numbers accompanied by Miss Daisy Burd. Pallbearers were the five sons and son-in-law Harlan Sober. Interment is was in the Lisbon cemetery.

“Out of town relatives were Mrs. Paul Jameson of St. Paul, Minnesota, Mrs. Marjory Jameson of Mt. Lake, Minnesota, Mr. and Mrs. Harold Jameson of Jefferson; Mr. and Mrs. Fay McKenzie of Crystal Lake, Illinois. Miss Marion Duffy of Chicago; Mr. and Mrs. Henry Hey, Dean and Beukah, Bernard Stoltz and Mrs. Dora Boynton of Dixon, Illinois, Perry Andreas of Oak Park, Illinois, Mr. and Mrs. Albert Stoltz of Mount Vernon, Mr. and Mrs. Paul Herrick of Cedar Rapids; Mr. and Mrs. Walter Hummel of Polo, Illinois, Mr. and Mrs. Elmer LeFevre, Mrs. Ida LeFevre, Mrs. Verna Enright, Mr. and Mrs. Ben LeFevre, Charles and Howard, Mrs. Anna Mellinger, Mrs. Margaret Clark, Mr. and Mrs. Carl Thomas, Mrs. Fanny Meyers and Mr. and Mrs. Will Hummell all of Sterling, Illinois.

“Card of Thanks

“For all the kind deeds, the words and expressions of sympathy tendered us in our sorrow we express our hearty appreciation and thanks.

“R.P. Andreas and family.”

92. Milner, R.T. 1938. Report of the Soybean Analysis Committee of the American Oil Chemists' Society. *Oil and Soap* 15(8):214. Aug.

• **Summary:** Millner is the committee chairman. Members include C.H. Cox, M.M. Durkee, T.L. Rettger, S.O. Sorensen, K.L. McKinney, and N.F. Kruse. Address: U.S. Regional Soybean Industrial Products Lab., Urbana, Illinois.

93. Archer-Daniels-Midland Co. 1938. A-D-M leads: Others follow. A-D-M improved new process soybean oil meal (Ad). *Proceedings of the American Soybean Association* p. 66.

• **Summary:** This full-page ad states: “We are pleased to offer to the trade A-D-M 44% Protein Improved New Process Soybean Oil Meal. As one of the pioneers in the soybean industry in America, we have utilized the facilities of our well-equipped technical department in a constant endeavor to improve our products, and we regard the development of A-D-M Improved New Process Soybean Oil Meal as one of the outstanding achievements in the history of the industry. By an entirely unique process (patent applied for), we have modified the physical properties of our New Process Meal to enable us to offer a product superior to any meal on the market.

“A few noteworthy features of this new product are:

“Non-dusting properties—A-D-M Improved New Process

Meal is a granular dustless product which can be handled equally well in bulk or in bags.

“Color and taste—A-D-M Improved New Process Meal has a golden color and a pleasant taste, but for those who may prefer a darker product with a toasted flavor, we offer our Brownd Improved Meal at no additional premium.

“Mixability with molasses—A-D-M Improved New Process Meal mixes more readily with molasses than do other types of meal, resulting in a uniform and attractive mixed feed. The Improved Meal likewise has a water absorption, 30 to 40% greater than regular market grades of Soybean Oil Meal, and this has a practical application in mixed feeds, particularly poultry mashes and dog food.

“Nutritional properties—Feeding tests with the A-D-M Improved New Process Meal show that we have maintained the same high feeding value in this new product as has been repeatedly demonstrated in experimental work on New Process Meal.

“Price—A-D-M Improved New Process Meal, both Regular and Brownd, is available at the same price as our old style meal and flakes.”

The company has soybean mills at Chicago, Illinois; Toledo, Ohio; Minneapolis, Minnesota; Milwaukee, Wisconsin; and Buffalo, New York. Address: Minneapolis, Minnesota.

94. Hayward, J.W. 1938. The proteins of soybeans and soybean oil meal. In: Soybean Nutritional Research Council, ed. 1938. The Composition and Nutritive Properties of Soybeans and Soybean Oil Meal; A Literature Review. Chicago: SNRC. 62 p. See p. 12-21. Oct. [41 ref]

• **Summary:** Contents: Amount of protein in soybeans and soybean oil meal and factors affecting same (Varieties: Manchu, Dunfield, Mandarin, Illini, Peking, Mukden, Illinois T 117, F.P.I. 54563-3, Scioto). Types of protein in soybeans and soybean oil meal. Amino acid content of the proteins in soybeans and soybean oil meal. Nutritive value of the proteins of soybeans and soybean oil meal. Effect of storage on soybean protein. Industrial uses of soybean protein: Glue, adhesive and sizing materials, plastics, water paint, foundry cores, artificial wool, whipping flours.

“Amount of Protein in Soybeans and Soybean Oil Meal and Factors Affecting Same: Soybeans available in this country and in other countries exhibit a wide variation in protein content, this variation being due to several factors. In the first place, soybeans grown in a single locality show a marked varietal difference in protein content. Piper and Morse (1) state that the principal varieties in the United States may vary from 34.1% to 46.9% in this respect. Carter and Milner (2) of the U.S. Regional Soybean Industrial Products Laboratory at Urbana, whose extensive investigations of the composition of soybeans are still in progress, have reported the following analysis of soybeans to indicate the variation with change of variety [table 1]:

Manchu 45.99%  
 Dunfield \* 43.95%  
 Mandarin 45.54%  
 Illini 44.48%  
 Peking 43.68%  
 Mukden 6.31%  
 Dunfield \*\* 42.07%  
 Illinois T 117 43.20%  
 F.P.I. 54563-3 44.63%  
 Scioto 3.73%

\* Seed from Illinois Experiment Station.

\*\* Seed from Purdue Experiment Station [Indiana].

“An individual variety grown in a single location may also vary considerably from year to year. O’Kelly and Gieger (3) found that the Laredo and Mammoth Yellow varieties analyzed for protein as follows over a period of several years (from 1925 to 1932; table 2):

Laredo ranged from 35.55% to 40.67% protein

Mammoth Yellow ranged from 39.91% to 44.64% protein

A given variety will also vary considerably in protein content from one locality to another. Webster and Kiltz (4) list the following results for four varieties of soybeans grown in different places in Oklahoma in 1931 [table 3]:

The variety Chiquita contained 42.50% protein in Craig County but 46.56% in Stillwater Co.

The variety Dixie contained 43.13% protein in Craig County but 46.82% in Stillwater Co.

The variety Virginia contained 40.00% protein in Craig County but 44.06% in Stillwater Co.

The variety Laredo contained 35.00% protein in Craig County but 47.50% in Stillwater Co. This latter variation is probably closely associated with the influence of varying environmental conditions, such as climate (including rainfall), soil type, fertilizer applied, etc. It has been stated (5) that soybeans grown in Manchuria and the United States are richer in protein than those grown in Germany, and further, that application of phosphatic fertilizers likewise favors protein formation. Inoculation of the soil may have a profound effect. For instance, a 16% increase in the protein content of soybeans grown on inoculated areas over those grown on uninoculated soil has been reported by Smith and Robison (6) who obtained the following results [table 4]:

Ogemaw, not inoculated had 8.08% moisture and 35.39% protein

Ogemaw, inoculated had 8.88% moisture and 42.20% protein

Medium Green, not inoculated had 8.12% moisture and 31.23% protein

Medium Green, inoculated had 8.80% moisture and 36.45% protein

“There is apparently (7) a relationship between the quantity of rainfall and the protein content of soybeans, the lower rainfall tending to produce a higher protein content. After a certain stage in the maturation process, soybean

seeds (3) decline in protein content, but this change is due to decomposition of nitrogen free extract rather than a decrease in the absolute quantity of protein. Likewise, decayed or damaged beans show a higher protein content. There is also some indication (8) of an inverse relationship between the oil content and the protein content of soybeans.

“The amount of protein in soybean oil meal will naturally depend upon the protein content of the soybeans used in processing, but in general the bulk of the soybeans that are processed in this country consist of only a few varieties, grown principally in the Corn Belt States. When these soybeans are all pooled together, the processor finds that the soybeans do not vary a great deal in protein content from one pressing to another. There is, however, a slight difference in protein content between the New Process [solvent] and Old Process soybean oil meals. In fact, the processors employing the solvent method of oil extraction (New Process) have found it possible to safely guarantee 44% of protein in their soybean oil meal; whereas 41% has been the usual guarantee for hydraulic or expeller (Old Process) soybean oil meal (9). Types of Protein in Soybeans and Soybean Oil Meal:

“Osborne and Campbell (10) proposed the name of glycinin for one of the globulin types of protein they obtained from soybeans. They considered it the principal protein, making up about 80 to 90% of the total crude protein contained in soybeans. They also isolated a more soluble globulin which resembled phaseolin in composition and, as far as they could ascertain, it was similar to phaseolin in reaction. They obtained an albumin-like proteid which they termed legumelin, and they estimated it made up about 1.5% of the total protein of the soybean. In addition to these proteins, they isolated a small quantity of proteose. Some of these proteins are listed below with their average composition [table 5]:

Jones and Csonka (11) obtained five protein fractions from soybeans by fractional precipitation at definite concentrations of ammonium sulfate within a range of 33 to 70% of saturation. In order to determine which fraction represented glycinin, a salt extract of soybean meal was dialyzed. From the protein fraction which precipitated, two globulins were separated. One was precipitated from a 10% salt (NaCl) solution by ammonium sulfate at 55% of saturation and did not coagulate even at boiling temperatures. This fraction was called glycinin since its properties agreed with those given by Osborne and Campbell for glycinin.

“Amino Acid Content of the Proteins in Soybeans and Soybean Oil Meal: Osborne and Clapp (12) in their analyses of glycinin, the principal protein of the soybeans, found the content of amino acids was similar to the values reported for casein, the principal protein of milk. Csonka and Jones (13) analyzed the chief protein (glycinin) from seeds of several varieties of soybeans and found them to differ considerably in amino acid content with the greatest variations occurring

in cystine content (a low value of .74% for the Illini variety and a high value of 1.45% for the Manchu soybean). Csonka and Jones (14) were the first investigators to report on some of the amino acids contained in the whole (non protein extracted) defatted soybean oil meal. Again cystine was found to be the most variable amino acid for the various varieties tested. Values ranged from .287% for the Illini up to .491% for the Herman variety. However, these investigators did not believe we needed to fear a quantitative deficiency of cystine in any of the common varieties of soybeans or in the meal made from these varieties. Hamilton, et al. (15), Nollau (16) and Mashino (17) give figures on their determination of the nitrogen distribution of soybean protein using the Van Slyke method.

“We have listed below for comparison the amino acids of the chief soybean protein, glycinin, and the amino acids of casein, the principal protein of milk:” [table 6].

“\*We refer you to the second edition (1934) of *Fundamentals of Dairy Science* by L.A. Rogers and others, for literature references covering all but one of the above values on amino acids in casein. Nutritive Value of Proteins of Soybeans and Soybean Oil Meal:

“Osborne and Mendel (19), Vestal and Shrewsbury (20), Shrewsbury, Vestal, and Hauge (21), Hayward, Steenbock, and Bohstedt (22) found that raw soybeans when fed to rats as the sole or principal source of protein in an otherwise complete ration did not support appreciable growth. However, normal growth resulted when they fed soybeans which had been previously cooked. Vestal and Shrewsbury (20), Shrewsbury, Vestal, and Hauge (21), and Robison (23) reported similar results with pigs. Mitchell and Villegas (24), Mitchell and Smuts (25), and McCollum, Simmonds, and Parsons (26) reported experimental evidence in support of the fact that the raw soybean contains a protein of low nutritive value. Mitchell and Smuts (25) and Shrewsbury and Bratzler (27) claimed that the low nutritive value of the protein of raw soybeans was due to a deficiency of the amino acid cystine.” Continued. Address: USA.

95. Hayward, J.W. 1938. Feeding soybeans and soybean oil meal to dairy cattle. In: Soybean Nutritional Research Council, ed. 1938. *The Composition and Nutritive Properties of Soybeans and Soybean Oil Meal; A Literature Review*. Chicago: SNRC. 62 p. See p. 38-43. Oct. [30 ref]

• **Summary:** “Dairy Calves: Investigators at Cornell University have found that a properly cooked soybean oil meal can be successfully substituted for at least a part of the dried skimmilk in their calf starter ration. The soybean oil meal ration which gave satisfactory results in their experiments is as follows:”

Ground yellow corn 33.25%  
 Rolled oats (oat meal) 28.00%  
 Wheat bran 10.00%  
 Linseed meal 5.00%

White fish meal 3.00%  
 Dried skim milk 10.00%  
 Soybean oil meal 9.00%  
 Steamed bone meal 0.5%  
 Ground limestone 0.5%  
 Salt 0.5%  
 Cod-liver oil concentrate 0.25%

At Purdue University [Indiana], in two trials lasting 360 and 330 days respectively, Hilton, Wilbur, and Hauge (2) fed eight calves on alfalfa hay and a grain ration containing linseed meal, and eight calves on a comparable ration in which ground raw soybeans were used in place of linseed meal as a protein supplement. It was concluded from these experiments that ground raw soybeans were equal to linseed meal as a protein supplement in the grain ration for growing heifer calves fed alfalfa hay. It seems logical to conclude, however, that this experiment did not represent a critical test of the growth promoting properties of the raw soybeans and linseed meal. Later, these investigators (3) reported that a ration consisting of clover hay, corn silage, and grain was equally efficient in promoting growth of calves as a similar ration supplemented with raw or roasted ground soybeans.

“Shoptaw (4) in a 70 day feeding experiment using eight calves, compared the merits of cow’s milk with soybean milk for use in rations for dairy calves. The soybean milk was prepared by mixing one part of soybean flour with nine parts of water. Grain and hay were fed ad libitum. The soybean milk was found to be less efficient than the cow’s milk in this particular experiment.

“Following extensive feeding experiments with several protein supplements, Hunt (5) of the Virginia Agricultural Experiment Station concludes the following: ‘Soybean (oil) meal is rich in protein and therms net energy, palatable and slightly laxative, tends to promote a sleek, oily coat, and makes an excellent concentrate to supplement corn silage for wintering dairy heifers, ranking first of the concentrates used. This is a concentrate that should become very popular with dairymen.’

“Dairy Cows-Milk Production: Early experiments (6, 7) in this country to determine the feeding value of soybeans for dairy cows compared the soybeans with cottonseed meal. The results of these tests seemed to indicate that ground soybeans were equal to cottonseed meal for milk production. Moore and Cowser (8) reported that ground soybeans were superior to both cottonseed meal and soybean meal for the production of butter fat.

“Gilchrist (9) of Armstrong College, England, found soybean cake (soybean oil meal) slightly superior to cottonseed cake for milk production. Six cows were fed for six weeks on each protein supplement. The basal ration consisted of hay, oatstraw, crushed oats, and roots.

“Hansen (10) of the Royal Agricultural Academy of Germany found soybean cake and linseed cake practically equal in feed value for milk production when added to a

basal ration of hay, bran, and sugar beet chips. No ill effects resulted although four to seven pounds of soybean cake were fed daily.

“Several investigators (11, 12, 13, 14, 15) in this country have reported that cracked or ground soybeans are practically equal or slightly superior to linseed oil meal when used as a protein supplement in the grain ration for milking cows. The feeding periods for these tests were from 28 to 40 days. In most cases the double reversal system of feeding was used and the data collected during the first week, or in some cases the first two weeks, following the exchange of rations were discarded in the hope of avoiding the carry-over effects of the previous ration.

“The workers (12) at Purdue University reported that soybean oil meal was\_ at least equal to linseed meal for milk and fat production, whereas ground soybeans gave better results than either soybean oil meal or linseed meal. Hayden and Perkins (14) and McCandlish and Weaver (16) reported similar results for soybean oil meal vs. linseed meal, but the results at the Ohio Station (14) did not point to any clear-cut advantage for ground soybeans over soybean oil meal.

“Tomhave (17) of the Delaware Agricultural Experiment Station concluded following feeding experiments with dairy cows that soybean oil meal, due to its higher protein content, had a higher value per ton than peanut meal. He also reported for similar reasons that soybean oil meal has a higher value per ton than ground soybeans. Experiments at the Virginia Agricultural Experiment Station (18), designed to measure protein efficiency of certain feedstuffs, showed peanut meal to be superior to soybean oil meal in protein efficiency and soybean oil meal superior to cottonseed meal in these regards. Attention is called to the fact that at least up to the time the above experiments were conducted with dairy cows, the soybean processors were not generally aware of the importance of heat in producing a high quality soybean oil meal, and therefore it is possible that much of the soybean oil meal used did not contain protein with a maximum feeding value.

“In many cases the previously cited investigators reporting a rather satisfactory feeding value for soybeans have failed to give serious consideration to the effect that soybeans have upon the composition of milk and butter due to the high content of a ‘soft-fat producing’ oil in the soybeans. However, it has been pointed out by certain workers (13, 14, 19, 20, 21, 22, 23, 24) that the feeding of soybeans or soybean oil in any appreciable quantity to dairy cows causes the body of the butter produced to be noticeably soft.

Nevens (22) of the Illinois Station summarizes the situation very well in the following remarks: ‘When ground soybeans formed 10 to 25 per cent of the grain mixture and clover hay the roughage, the flavor of the products was not affected, but when the higher proportions of beans were fed, the body of the butter was slightly gummy. This lowered the

score of the butter one to two points, which, of course, is an objection from the commercial standpoint.’

“Horn and Muhl (23) have made similar observations and have considered in addition the effect of solvent extracted soybean oil meal upon yield of milk and fat and the effect upon butter quality. The results of their investigations have been summarized as follows: ‘In two period experiments with 5 and 3 cows, in which soya beans were substituted for not more than 35 per cent of the total concentrates, a small increase in the yield of milk and fat was recorded. Percentage of fat and the general composition of the milk were unaffected, but the butter made from it was soft and soya-like in aroma. This defect was eliminated when 30 per cent palm kernel cake was also fed. Similar effects on yields of milk and fat were obtained with extracted soya meal, in this case without detriment to the quality of the butter.’

“Sheehy (25) of the University College of Dublin reported on the results of feeding experiments extending over a period of three years (1928-1931), intended to determine the effect of dietary fat (or oil) on the fat content of cow’s milk. These experiments differed from those frequently reported in that the observations on variations of milk fat were made under conditions where the milk yield was held as constant as possible. These tests showed that the feeding of 10 ounces of soybean oil daily for nine days, in addition to the roughage and grain ration, did not cause any increase in the butter fat produced. It is interesting to note that these results were obtained when the grain ration contained only 1.8 per cent of fat. In consequence of this observation and similar ones where other oils were fed, it was concluded that a production ration containing 1.8 per cent of fat supplied a diet which was capable of supporting the maximum yield of butter fat in milk.

“There is another serious objection to the feeding of ground or whole soybeans to cattle that has been frequently overlooked and that is the tendency of soybeans, because of their high oil or fat content, to produce scours in cattle when fed in any large quantities especially if the silage part of the ration is restricted appreciably (26). This objection to soybeans should not apply to soybean oil meal due to the fact that in its manufacture most, or in some cases practically all, of the soybean oil or fat has been removed.

“Effect of Feeding Soybeans and Soybean Oil Meal Upon the Vitamin A Value of Butter: Wilbur, Hilton, and Hauge (27) of Purdue University reported after preliminary investigations that the inclusion of soybeans in rations for dairy cows resulted in an inhibition of the transference of vitamin A from the feed to the butter produced. This suppressing factor present in the beans was apparently thermostable since roasted soybeans had virtually the same effect as raw soybeans. Butters of fairly high vitamin A value, however, could be produced even when soybeans were used providing roughage of high vitamin A content was also

fed. Since the substitution of soybean hay for alfalfa hay in the ration resulted in butter of slightly lower vitamin A value, these investigators later (28) studied the effect the maturity of the plants at harvest, had upon the vitamin A content of the butter. They found young plants had no suppressing action whatsoever, but those harvested after the beans were well formed in the pods were significantly guilty. Apparently, then, the beans alone contained this suppressing factor. In a more recent publication (29), these workers reported on their attempt to determine which particular fraction of the bean carried it. They stated that in the removal of the oil, the greater portion of this factor followed the oil, but a small amount remained in the residue. They concluded from this that the inhibition of the transference of vitamin A was not due to the presence of the oil itself in the soybean. In these experiments, the cattle were fed a roughage of alfalfa hay and corn silage with a grain mixture containing 400 pounds of ground white corn and 200 pounds of ground oats which they supplemented with various protein concentrates. The results they obtained expressed in vitamin A units per gram of butter are as follows:" A complex table gives the results. Later (3) these investigators attempted to remove the vitamin A suppressing factor from soybean oil by adsorbents. They found that activated carbon would remove a good portion of this factor.

"These investigations are of theoretical interest, but it is doubtful that the suppressing action of soybeans would have much practical significance." Address: USA.

96. Hayward, J.W. 1938. The proteins of soybeans and soybean oil meal (Continued—Document part II). In: Soybean Nutritional Research Council, ed. 1938. The Composition and Nutritive Properties of Soybeans and Soybean Oil Meal; A Literature Review. Chicago: SNRC. 62 p. See p. 12-21. Oct. [41 ref]

• **Summary:** (Continued): "Although it was common knowledge that the soybean was heated in all the commercial methods of oil extraction (solvent or New Process, expeller and hydraulic or Old Process methods), little attention had been given to the effect the different amounts of heat used had upon the nutritive value of the protein in the soybean oil meals previous to investigations conducted at the University of Wisconsin. From the results of this work, reported by Hayward, Steenbock, and Bohstedt (22) it can be concluded that a most satisfactory soybean oil meal in terms of protein efficiency and all-round feeding properties, can be produced by each of the three methods of oil extraction. Some of the principal points of interest are contained in the following excerpt from their first article:

"Raw soy beans were found to contain protein of low nutritive value as determined by the grams of growth per grain of protein eaten. Commercial soy bean oil meals such as the expeller meal processed at low temperatures, 105°C. for 2 minutes or the hydraulic meal cooked at 82°C. for 90

minutes contained proteins similar in nutritive value to the raw soy beans. On the other hand, commercial soy bean oil meals which had been prepared at medium and high temperatures such as expeller meals processed at 112 to 130 and 140 to 150°C. for 2½ minutes or hydraulic meals cooked at 105 and 121°C. for 90 minutes contained proteins which had about twice the nutritive value of the raw soybeans or low temperature meals... Heating the extracted soy beans at 98°C. for 15 minutes, as in the commercial solvent method of oil extraction, was also found to be an effective method of heat treatment..."

"These investigators also conducted metabolism trials and found that heating the raw soybean to a high temperature in the expeller method of oil extraction caused an increase in the digestibility and biological value of the protein. In one set of metabolism trials the values for digestibility and biological values of the protein were corrected for endogenous nitrogen with the following results:" [table 7].

Raw soybeans: Coefficient of digestibility of protein: 85%, Biological value of protein: 41%.

High temperature Expeller pressed soybean oil meal: Coefficient of digestibility of protein: 87%, Biological value of protein: 51%.

"It should be appreciated that experimental diets used in the metabolism trials at the University of Wisconsin contained the soybean and soybean oil meal proteins at approximately an 18 per cent level, and therefore the results are not directly comparable with those obtained on soybeans when fed at a protein level of about 10 per cent as reported by Mitchell and Villegas (24); nor are they comparable with the reported biological values of the proteins in many foods and feedstuffs where the material was tested at 5 to 10 per cent levels of protein.

"The results reported for the growth and metabolism trials at the University of Wisconsin suggested that the application of heat to the raw soybean caused an increase in availability of certain fractions of the protein molecule. After experimentation with such supplements as casein and the amino acid, l-cystine, Hayward, Steenbock, and Bohstedt (28) concluded in their second paper that heating of the soybean caused such a phenomenal increase in the biological value of its protein largely because the heat caused the methionine-cystine fraction of the protein to become available.

"Investigators at Cornell University conducted a long series of metabolism trials with chicks to determine the relative protein efficiency of the many feeding materials available for use in poultry rations. In their first paper, Wilgus, Norris, and Heuser (29) reported values of 89 and 85 for the relative protein efficiency of expeller and hydraulic soybean oil meals which were of unknown temperature history. These workers later secured samples of the different kinds of soybean oil meals with known temperature histories and samples of the respective soybeans from investigators at

the University of Wisconsin.

Wilgus, Norris, and Heuser (30) have reported the following relative protein efficiency values for these soybean materials" [table 8]:

This table shows that for Expeller, hydraulic, and solvent extracted soybean oil meal, a longer temperature and time, generally gives a higher relative protein efficiency. Solvent extraction gives the highest relative protein efficiency: 92.

"The following chart summarizing the relative protein efficiency values for various feedstuffs as reported by Wilgus, Norris, and Heuser (29, 30), indicates that a properly cooked soybean oil meal is superior to many commonly used supplements in protein efficiency [and it is often less expensive]:

The supplements with the highest relative protein efficiency are:

- Casein 100%
- Dried skim milk 100%
- White fish meal 104%
- Sardine fish meal 98%
- Soybean oil meal (expeller) 92%
- Menhaden fish meal 91%
- Meat scraps 82%.

"It was also at Cornell University that Turk, Morrison, and Maynard (31) conducted metabolism trials with lambs to determine the nutritive value of the protein in corn gluten meal, linseed meal, and soybean oil meal. They reported that the average coefficients of apparent digestibility of the proteins were 67% for soybean oil meal, 66.3% for corn gluten meal, and 63.3% for linseed meal.

"The lambs were more efficient in storing protein from the soybean oil meal ration than from either of the other rations. The average percentage of protein intake stored was 33.8 for soybean oil meal, 26.5 for corn gluten meal, and 26.7 for linseed meal. The biological values obtained were slightly but significantly in favor of the soybean oil meal proteins. They were 72.8 for soybean oil meal, 65.7 for corn gluten meal, and 67.7 for linseed meal. These investigators concluded that the proteins of soybean oil meal were superior to the proteins of linseed meal and corn gluten meal.

"A great deal has been written and said (5) indicating that the proteins of soybeans and soybean products are of exceptionally high order in human nutrition. These statements have been made in most cases following observations of racial habit rather than on the basis of any scientifically controlled feeding experiments. We do find, however, that Kung and Fang (32) have conducted nitrogen metabolism trials with preschool children comparing the proteins of soybeans to the proteins of cow's milk. The results of their experiments showed no marked difference for the children studied in the protein utilization of mixed diets when supplemented with soybean milk or cow's milk.

"Since we have spoken of the value of soybean protein in the human diet, it may be of interest to review some of

the results of experiments with the protein of soybean flour when blended with the proteins of some of our common foodstuffs. Johns and Finks (33) reported the following from experiments on rats:

"1. Bread made with a mixture of 25 parts of soybean flour and 75 parts of wheat flour contained a protein mixture and water soluble vitamins adequate for normal growth. A similar bread containing 15 parts of soybean flour and 85 parts of wheat flour likewise furnished adequate proteins and water soluble vitamins for normal growth.

"2. These mixtures of the soybean and wheat proteins were found two or three times more efficient than the proteins from wheat alone."

"Kon and Markuze (34) in their experimental studies on the effect of soya-wheat and wheat-rye bread on growth, came to the conclusion that a supplementary relationship exists between proteins of white wheat flour and soya bean flour; also that there is a strong indication that a supplementary relationship exists between the proteins of rye flour and of soybean flour.

"For further references on the value of soybeans in human nutrition, the reader is referred to the article of Horvath (35) on this subject."

"Industrial Uses of Soybean Protein: Considerable interest has been manifest in this country relating to the uses of specially prepared soybean oil meal or flour for products of industry. In most cases, these uses depend primarily upon a protein contained in the meal or flour. Some of the industrial uses frequently mentioned for the soybean oil meal or flours and isolated soybean protein are as follows:

1. Glue (37)
2. Adhesive and Sizing Materials (38; Bowden 1937)
3. Plastics (39; Boyer 1938)
4. Water Paint (39)
5. Foundry Cores (39)
6. Artificial Wool (39)
7. Whipping Flours (40)

"For those interested in a review and bibliography on this subject, we refer you to the recent publication by Horvath" (41). Address: USA.

97. Hunter, J.E. 1938. The place of soybean oil meal in poultry feeding. In: Soybean Nutritional Research Council, ed. 1938. The Composition and Nutritive Properties of Soybeans and Soybean Oil Meal; A Literature Review. Chicago: SNRC. 62 p. See p. 53-56. Oct. [20 ref]

• **Summary:** "For maximum performance of poultry from the standpoints of growth and egg production it is essential that cereal grains and their by-products be supplemented with feeds high in protein. Certain concentrates from animal and vegetable sources have been found to be valuable for this purpose. Properly cooked soybean oil meal has been shown to be highly efficient in this respect. Because the soybean is a high protein seed, a number of attempts have been made

to use it as a supplement for cereals in poultry feeding. Such attempts have not been generally successful.

“Philips and Hauge (1) report that whole soybeans were as satisfactory as soybean oil meal, replacing tankage in the laying mash, provided that a mineral supplement was used. In trials in South Dakota (2), ground soybeans ranked third in cost of feed to produce a dozen eggs, in comparison with five other high protein feeds. Kempster (3) found that ground soybeans, even though supplemented with minerals were not an adequate protein for laying birds. Tomhave (4) reports that ground soybeans replacing meat scraps in the laying ration for pullets, in part or in all, reduced egg production per pullet. This decrease is important above levels of 6.8% of soybeans in the laying ration. Tomhave and Mumford (5) report unsatisfactory growth and high feed requirements for chicks fed on raw soybeans. Osborne and Mendel (6), and Vestal and Shrewsbury (7) reported that the cooking of soybeans causes an increase in their growth promoting properties for rats. Robison (8) and Vestal and Shrewsbury (9) report similar results for swine.

“When Purdue (10) University workers fed raw soybeans plus minerals to baby chicks, the results were not as satisfactory as when soybean oil meal plus minerals were fed. Hayward, Steenbock, and Bohstedt (11) found that the heating of the soybean to medium and high temperatures in the commercial methods of oil extraction, practically doubled the nutritive value of the protein. Raw, beany tasting soybean oil meal prepared at a low temperature gave about the same nutritive value for protein as raw soybeans. Wilgus, Norris, and Heuser (12) determined the relative protein efficiency of various supplements, and found that the protein of ground raw soybeans and soybean oil meal was 55 to 88% respectively as efficient as casein. They have assumed that the increased protein efficiency was due to heat treatment in the process of oil extraction.

“In another report, Wilgus, Norris, and Heuser (13) show ‘The Effect of Heat on the Nutritive Properties of Soybean Oil Meal.’ They conclude that ‘Soybean oil meals which are satisfactory as sources of high-quality protein for feeding poultry may be produced by the expeller, hydraulic, and solvent processes by the application of a sufficient amount of heat. The optimum temperature found in this study for the expeller method was 140° to 150°C for 2 minutes in the expeller, and for the hydraulic method was 105°C. for 90 minutes in the cooker. A solvent-process meal produced at 98°C. for 15 minutes (the usual commercial procedure) was excellent in protein efficiency.

“The vitamin G content of the soybeans studied was low and was not affected to any measurable extent by the manufacturing processes. The color and flavor of the meals were not infallible criteria of their nutritive value, but a raw, beany flavor was indicative of an insufficient application of heat and a resulting inferior protein efficiency.

“Sloan (14) reports soybean oil meal as a good protein

supplement for poultry, and states that when supplemented with sufficient minerals is about equal to meat scraps and fish meal, and somewhat better than tankage, gluten feed, cotton seed meal, and not quite so good as dry milk products. He reports the feeding of ground soybeans not as satisfactory as the feeding of soybean oil meal. He also states that soybean oil meal has an advantage over some other vegetable protein supplements in apparently not affecting the yolk color of eggs.

“The Wisconsin (15) Station reports ‘because soybean oil meal is about the best of the plant protein feeds, it has, during recent years, become popular as a substitute for milk and meat scraps in poultry rations. Research at this station has shown that good soybean oil meal serves very well for this purpose so long as it is used to replace only part of the animal protein.’ The Wisconsin workers report lowered hatchability when soybean oil meal is the only protein supplement in the ration. They find that as little as 2% meat scrap, and 2% dried milk fed in combination with soybean oil meal, results in markedly improved hatchability. This reduced hatchability may be due to a deficiency of some part of the vitamin B complex, possibly flavine. Soybean oil meal is not considered a rich source of flavine, but does contain appreciable quantities of this factor as shown by Norris, Wilgus, Ringrose, Heiman, and Heuser (16), who report that soybean oil meal contains three units of vitamin G per gram.

“Soybean oil meal can easily be supplemented with vitamin G carrying materials and optimum results obtained.

“Byerly, Titus, Ellis, and Nestler (17) found that when soybean oil meal was used as a sole protein concentrate and fed at a level of 20%, a drop in winter hatchability resulted. The replacement of part of the soybean oil meal with beef scraps gave satisfactory results. This study further emphasizes the fact that soybean oil meal should not be used as the sole protein supplement in the poultry ration, but should be used in connection with animal protein concentrates. The proper blending of soybean oil meal with animal protein carriers results in a ration that will give satisfactory performance at a low cost.

“Hayward, Halpin, Holmes, and Hart (18), studying the effect of soybean oil meal prepared at different temperatures as a feed for poultry, state that ‘High temperature expeller soybean oil meal (processed at 140-150° for 2½ minutes), medium and high temperature hydraulic soybean oil meal (cooked at 105° and 121°C. for 90 minutes), and solvent extracted soybean oil meal (cooked at 98°C. for 15 minutes) resulted in chicks weighing about twice as much, with less feed required per unit of gain, as the chicks fed ground raw soybeans and low temperature expeller soybean oil meal (processed at 105°C. for 2 minutes) in feeding trials conducted for eight weeks.

“The medium and high temperature hydraulic soybean oil meals were definitely superior, in growth produced and feed required, to the low temperature hydraulic soybean oil

meal (cooked at 82°C. for 90 minutes). However, this low temperature hydraulic meal was not so decidedly lacking in growth promoting properties as were the ground raw soybeans and low temperature expeller soybean oil meal.

“The chicks fed a ration containing 16 parts soybean oil meal and minerals, or a combination consisting of 12 parts soybean oil meal, 2 parts meat scraps, and 2 parts dried milk plus minerals, did not equal in average weight at eight weeks or in feed required per unit of gain the chicks fed a protein supplement consisting of 8 parts meat scraps and 8 parts of dried milk, regardless of the soybean oil meal that was used.

“As for the chicks fed the soybean oil meals which have been designated as properly heated, 12 parts soybean oil meal, 2 parts meat scraps and 2 parts dried milk plus minerals was superior in results obtained in these eight-week feeding trials to 16 parts soybean oil meal plus mineral.

“The combination of 12 parts high temperature expeller soybean oil meal, 2 parts meat scraps, and 2 parts dried milk plus minerals surpassed 16 parts of soybean oil meal plus minerals and approximately equalled the combination of 8 parts soybean oil meal, 4 parts meat scraps, and 4 parts dried milk plus minerals or the all animal protein supplement consisting of 8 parts meat scraps and 8 parts dried milk in weight of pullets and feed required per unit of gain at 20 weeks in two feeding trials. This combination of 12 parts high temperature expeller soybean oil meal, 2 parts meat scraps, and 2 parts dried milk plus minerals also proved highly efficient in comparison to other supplements tested in producing eggs in one 11-month trial reported for pullets.’

“The feeding of cotton seed meal to hens has long been known to cause difficulty in storage eggs. Work at the Missouri station (19) shows that no ill effects were obtained with eggs in storage when either soybean oil meal or ground soybeans were fed to the hens.

Hunter, Marble, and Knandel (20), studying vegetable proteins in turkey feeding, found they could use as much as 14% of soybean oil meal in turkey rations replacing a portion of protein from meat scrap, fish meal and milk, and obtain as good growth as when all animal protein products were used.

“The uses of soybean oil meal in combination with animal protein concentrates produces rations of high biological efficiency at low cost.” Address: USA.

**98. Product Name:** Soybean Oil, and Soybean Oil Meal (Named Double Diamond Soybean Oil Meal by 1952).

**Manufacturer’s Name:** Toronto Elevators Ltd. Renamed Maple Leaf Mills in 1964.

**Manufacturer’s Address:** Queens Quay, Toronto, ONT, Canada.

**Date of Introduction:** 1938.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** Ontario Retail Feed Dealers’ Association. 1946. Year Book, 1944-45. On page 11

is a full-page ad for Toronto Elevators Limited, stating that they make soy bean meal.

Soybean Blue Book. 1947. p. 64. “Processors of soybeans–Canada: Toronto–Toronto Elevators Ltd., Queen’s Quay.”

*Soybean Digest*. 1951. Oct. p. 35. Canada’s pioneer in the soybean crushing industry, Toronto Elevators Ltd. has been actively engaged in this field since 1938.

Soybean Blue Book. 1952. p. 94. 8 expellers, capacity 150 tons. N. Hexane solvent, capacity 150 tons. Storage capacity: 2,000,000 bushels. “Master” mixed feeds and pellets. Served by CN, CP RR [Canadian Pacific Railroad].

Soybean Blue Book. 1964. p. 94. The entry now reads: “Toronto, Ont.–Maple Leaf Mills, Ltd., vegetable oil division, 417 Queens Quay W. Phone 362-7131. Chairman of board, J.D. Leitch; asst. chairman of board, C.E. Soward... 8 expellers, capacity 150 tons; hexane solvent, capacity 150 tons. Storage capacity 4,000,000 bushels. “Double Diamond” soybean meal; “Master” mixed feeds and pellets. Note: This is the earliest document seen that mentions Maple Leaf Mills, Ltd.

Soybean Blue Book. 1968. p. 96.

Soybean Digest Blue Book. 1978. June. p. 118. Address: 365 Evans Ave., Toronto M82 5W7, Ontario.

Talk with Dave Bутtenham, executive V.P. of Ontario Grain & Feed Assoc. 1997. Feb. 20. His association began publishing a trade directory/yearbook in 1944-45. In the first issue is an ad from Toronto Elevators Ltd. stating that they make linseed oil and meal and soybean oil and meal. He has a history from the Canadian Feed Industry Association that may discuss the early history of Toronto Elevators Ltd. The two main newspapers in Toronto in the late 1930s were the *Toronto Telegram* (probably the main newspaper then but no longer in existence; the University of Toronto library may have back issues) and the *Globe and Mail* (very active today). He will try to talk with several elderly men who were active in the Association in the early days. He also knows some people who were top people in Maple Leaf Mills. He thinks Maple Leaf Monarch was the oilseed division of Maple Leaf Mills.

Note: This is the earliest document seen (Sept. 2000) concerning ADM Agri-Industries or its ancestors in Canada.

**99. British Arkady Co. Ltd. 1938.** Arkady: A collection of articles treating mainly of scientific research in pursuit of the “Better Loaf,” contributed by various investigators and reprinted from “The Arkady Review.” Skerton Rd., Old Trafford, Manchester, England. 385 p.

• **Summary:** Preface: “The word ‘Arkady’ was coined by Mr. Geo. Ward of The Ward Baking Company, New York, as a lasting tribute to the memory of Robert Kennedy Duncan—his initials R.K.D. suggesting the name. Why a tribute? Was it necessary? The answer is the world-wide reputation of Arkady, the most skillful and complete piece

of research undertaken or completed for the baking industry. This work was undertaken and carried out by the staff of the Mellon Institute under the directorship of R.K. Duncan. War conditions gave Arkady its greatest opportunity in the U.S.A. and it played its part both in the U.S.A. and on the French front.

“It was, however, not until 1920 that the manufacture of Arkady in this country began in a tiny section of the Willesden Works of Baker Perkins Ltd. Being in need of more space, in July 1923 the first building was completed and occupied in Manchester. In 1929 the size of the works was doubled, and in 1936 redoubling became necessary.”  
Address: Manchester, England.

100. *Decatur Herald (Illinois)*. 1939. 5,000,000 bushel soybean plant to be built here: Begin building immediately. 600 men to rush buildings for completion July 1. Jan. 11. p. 1. Wednesday morning.

• **Summary:** With the announcement “today that the Archer-Daniels Midland company of Minneapolis [Minnesota] would build a five-million bushel grain elevator, head house and soybean plant here, Decatur took its place at the top of the soybean processing industry.

“Whitney H. Eastman of Milwaukee, vice president in charge of the soybean division of the company, said that construction of the huge plant would be started immediately and it would probably be ready for use by July 1 in time to handle the wheat and oats crop.

“Three Big Processors: The new plant will give Decatur three of the largest soybean processors in the world with the A.E. Staley company and the Spencer Kellogg company already operating here.

“The company [ADM] now operates soybean processing plants in Chicago [Illinois], Toledo [Ohio], Buffalo, New York, Milwaukee [Wisconsin] and Minneapolis.

“The new industry will create a gigantic market for soybeans and other grain products grown in Central and other parts of Illinois.”

“The plant will be constructed on the Rowe farm located near Faries park northeast of the city...”

“Mr. Eastman told a representative of the Herald early this morning, that he had mailed last night details of the project to Secretary H.H. Bolz of the Association of Commerce.”

101. Associated Press (AP). 1939. Archer-Daniels to build huge grain elevator. *Chicago Daily Tribune*. Jan. 12. p. 27.

• **Summary:** Archer-Daniels-Midland company plans to construct a 5,000,000 bushel grain elevator, headhouse, and soy bean processing plant at Decatur, Illinois. Whitney H. Eastman, vice president in charge of the company’s soy bean division, made the announcement on Jan. 10 in Milwaukee. He said construction would start immediately and the elevator would probably “be ready for use by next July 1, in

time to handle wheat and oat crops.”

The company now operates soy bean processing plants in Milwaukee (Wisconsin), Chicago (Illinois), Toledo (Ohio), Buffalo (New York), and Minneapolis (Minnesota).

102. *Decatur Herald (Illinois)*. 1939. The vision becomes reality. Jan. 12. p. 4. Morning. Editorials.

• **Summary:** “Decatur yesterday put a block under the title: Soybean Capital of the World!

“Three basic reasons influenced the decision of the Archer-Daniels-Midland company to acquire 96 acres of ground here upon which to erect an elevator and soybean processing plant at a cost of between one at two million dollars. The reasons are: Location near the center of America’s soybean producing section, good transportation facilities and rate structures favorable to grain merchandising and processing, and adequate water supply.

“Decatur citizens have created these favorable conditions.” Foremost among the pioneers was A.E. Staley. The community “built Lake Decatur, largely for the needs of the Staley company, when impounded lakes were more of a novelty than now.”

Major soybean processors in Decatur now include A.E. Staley company, Spencer-Kellogg company, and now Archer-Daniels-Midland company.

Note: The phrase “soybean capital” appears in more than 20 issues of Decatur newspapers in 1939.

103. *Wall Street Journal*. 1939. Archer-Daniels-Midland. Jan. 13. p. 6.

• **Summary:** “Milwaukee [Wisconsin]–Archer-Daniels-Midland Co. will erect a 5,000,000 bushel grain elevator and soy bean processing plant at Decatur, Illinois, Construction will start this month.”

104. Hayward, J.W. 1939. Report on soybean flour in foods. *J. of the Association of Official Agricultural Chemists* 22(3):552-54. Aug. (Chem. Abst. 33:8321). [4 ref]

• **Summary:** Determining the quantity of soybean flour in sausage by a nitrogen-free extract method and immunological method. Address: Archer-Daniels-Midland Co., Minneapolis, Minnesota.

105. *Wall Street Journal*. 1939. Archer-Daniels-Midland Company and subsidiaries. Sept. 8. p. 7.

• **Summary:** Shows the Archer-Daniels-Midland Co. consolidated balance sheet on June 30, 1939.

106. Archer-Daniels-Midland Co. 1939. Archer brand: The mark of quality soybean products (Ad). *Proceedings of the American Soybean Association* p. 9.

• **Summary:** This full-page ad states that the company now makes and sells “44% soybean oil meal, 44% soybean pellets, 41% soybean oil meal.” It has soybean mills at



## The Mark Of Quality Soybean Products

44% SOYBEAN OIL MEAL

44% SOYBEAN PELLETS

41% SOYBEAN OIL MEAL

## ARCHER-DANIELS-MIDLAND COMPANY Minneapolis, Minn.

*Soybean Mills at CHICAGO, TOLEDO, MILWAUKEE,  
BUFFALO, and MINNEAPOLIS*

AND

Ready for Operation This Fall THE WORLD'S LARGEST.  
SOLVENT EXTRACTION UNIT at DECATUR, ILLINOIS

Chicago, Illinois; Toledo, Ohio; Milwaukee, Wisconsin; Buffalo, New York; and Minneapolis, Minnesota. "And ready for operation this fall the world's largest solvent extraction unit at Decatur, Illinois."

Note: This is the earliest English-language document seen (Sept. 2016) that contains the term "soybean pellets." Address: Minneapolis, Minnesota.

107. **Product Name:** Archer brand 44% soybean oil meal, 44% soybean pellets, or 41% soybean oil meal.

**Manufacturer's Name:** Archer-Daniels-Midland Co.

**Manufacturer's Address:** Minneapolis, Minnesota.

**Date of Introduction:** 1939 September.

**New Product–Documentation:** Ad in *Proceedings of the American Soybean Assoc.* 1939. p. 9. "Archer brand: The mark of quality soybean products."

108. **Product Name:** Soybean Oil, and Soybean Oil Meal.

**Manufacturer's Name:** Archer-Daniels-Midland Company.

**Manufacturer's Address:** Decatur, Illinois.

**Date of Introduction:** 1939 September.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** Associated Press. 1939. "Archer-Daniels to build huge grain elevator." Illinois. *Chicago Daily Tribune*. Jan. 12. p. 27. Archer-Daniels-Midland company plans to construct a 5,000,000 bushel grain elevator, headhouse, and soy bean processing plant at Decatur, Illinois. The elevator is expected to be ready by July 1.

Ad in *Proceedings of the American Soybean Assoc.* 1939. Sept. p. 9 "And ready for operation this fall the world's largest solvent extraction unit at Decatur, Illinois."

USDA Northern Regional Research Laboratory. 1943. "Soybean processing mills in the United States." *USDA Bureau of Agricultural and Industrial Chemistry*. AIC-26. 10 p. Nov. See p. 1. Decatur, Illinois: "Archer-Daniels-Midland Company." (Large = capacity over 200 tons/day of soybeans). Solvent extraction plant.

*Soybean Digest*. 1949. Dec. p. 36. "Grits and flakes... Archer-Daniels-Midland Co's. new soybean oil refinery at Decatur, Illinois, was ready to go into production Oct. 30. The refinery will use raw oil from the company's new solvent plant at Decatur which went into production last summer. Plans have been announced for a new pilot plant in Minneapolis."

109. Halpin, J.G. 1939. Soybean meal for growing chicks. *Proceedings of the American Soybean Association* p. 18-21. 19th annual meeting. Held 11-12 Sept. at Madison, Wisconsin. [3 ref]

• **Summary:** "We get a good many letters asking for information about feeding soybeans to poultry. Twenty-five years ago we reported that baked soybeans gave better egg production than raw soybeans. The beans were baked daily and fed mixed with mash. The raw beans were ground and mixed with the mash for the second group.

"Osborne and Mendel (1917) and Vestal and Shrewsbury (1932) reported that cooking the soybeans caused a very significant increase in its growth promoting properties

for white rats. Hayward, Steenbock and Bohstedt (1936) found in experiments with rats that heating the soybean to medium and high temperature in the commercial methods of oil extraction practically doubles the nutritive value of the protein (grams of growth per gram of protein eaten). Raw beany tasting soybean oil meal prepared at a low temperature gave about the same nutritive value for the protein as raw soybeans.

“Hayward, Halpin, Holmes, Bohstedt and Hart (1987) reported feeding trials with growing chicks and laying pullets. In these trials soybean oil meals rendered at different temperatures and raw soybeans were substituted for a part of the milk and meat scrap in the Wisconsin Number 2 chick mash. In these trials, when 14 pounds of ground raw soybeans were substituted for six pounds of meat scrap and six pounds of dried milk in the chick ration, very slow growth was experienced. The chicks on the Wisconsin Number 2 (eight pounds of meat scrap and eight pounds of dried milk) averaged to weigh 658 grams at eight weeks while the raw soybean group (fourteen pounds raw soybeans, two pounds of dried milk and two pounds of meat scraps) weighed only 278 grams each.

“On the other hand a ration made using an expeller soybean oil meal (Exp. S.B.O.M.–140 degrees-150 degrees, 2½ minutes) twelve pounds; meat scrap, two pounds; and dried milk, two pounds; averaged to weigh 560 grams at eight weeks. That is, slightly twice as heavy as the raw soybean group. In another trial when low temperature expeller soybean oil meal (105 degrees C.-2 minutes) was substituted for the meat scrap and dried milk, unsatisfactory growth was experienced (281 grams at eight weeks) but when high temperature expeller meal (140 degrees to 150. degrees C.-2½ minutes) was used the chicks were decidedly better (468 grams at eight weeks) but not equal to the positive control (eight pounds of meat scrap and eight pounds of dried milk) as this lot averaged to weigh 684 grams in eight weeks.

“In another trial using four pounds of meat scrap, four pounds of dried milk and eight pounds of high temperature soybean oil meal, we produced 533 gram chicks at eight weeks and 1660 gram pullets at twenty weeks. While a ration containing two pounds of meat scrap, two pounds of dried milk and twelve pounds of high temperature expeller soybean oil meal produced 518 gram chicks at eight weeks and 1578 gram pullets at twenty weeks. These chicks compared favorably with the positive control (eight pounds of dried milk and eight pounds of meat scrap) that weighed 616 grams at eight weeks and pullets that weighed 1668 grams at twenty weeks.

“Numerous trials then have shown that a good sample of high temperature soybean oil meal can be used to replace all or a part of the dried milk and meat scrap in a chick starter mash. When soybean oil meal is used to replace all of the animal protein, slightly slower growth is experienced but

very satisfactory pullets can be produced.

“That milk, meat and fish products contain some growth promoting factors not contained in soybean oil meal has been shown in a number of trials.

“Milk, fish meal and meat scrap have shown in a number of trials to increase the growth rate when substituted into the soybean oil meal ration. On the other hand linseed meal and gluten meal addition have not improved the ration. In fact 16 pounds of soybean oil meal has been found to be superior to combination of the soybean meal with either linseed meal or corn gluten meal. Special feeds such as liver meal have given splendid results in some trials. In the 1936 trials a combination of soybean oil meal, 13; dried milk, 2; and liver meal, 1; gave chicks that averaged 642 grams at eight weeks compared with chicks on Wisconsin Number 2 that weighed 603 grams and 531 grams for chicks on the soybean oil meal.

“Increasing the amount of soybean oil meal to raise the protein level has not given satisfactory results. For instance in 1939 a group of Single Comb White Leghorn chicks getting Expeller soybean oil meal in the amount of sixteen pounds, averaged 398 grams at eight weeks. A similar group, getting twenty pounds, of the soybean oil meal averaged 399 grams and a third group getting twenty-four pounds of soybean oil meal averaged almost the same 410 grams. In the same series, chicks getting eight pounds of meat scrap and eight pounds of dried milk averaged 607 grams and chicks getting Wisconsin Number 44 (four pounds each of dried milk, meat scrap, fish meal and soybean oil meal) averaged 646 grams at eight weeks.

“In the second trial the group getting sixteen pounds of soybean oil meal averaged 386 grams; the group getting twenty-four pounds of soybean oil meal averaged 388 grams; and the group getting twenty pounds of soybean oil meal averaged 380 grams while the lot on Wisconsin Number 2 averaged 492 grams. Those on Wisconsin Number 44 averaged 520 grams. That additional protein of the right kind will result in faster growth is shown by the lot getting Wisconsin Number 45 which averaged to weigh 623 grams at eight weeks.

“For practical conditions, Wisconsin Number 44, containing four per cent of good quality soy bean oil meal seems to be a very desirable combination for general farm use. When broilers are produced, Wisconsin Number 45 containing five per cent each of dried milk, meat scrap, fish meal and soybean oil meal, appears to be satisfactory. Adding still more protein, that is six pounds each of dried milk, meat scrap, fish meal and soybean oil meal, results in still slightly faster growth for the first eight or ten weeks.

“That adding soybean oil meal to the Wisconsin Number 2 ration would increase the speed of growth was shown by replacing sixteen pounds of the basal (corn, bran, etc.) in the Wisconsin Number 2 chick starter by using soybean oil meal. In that case the chicks on the Wisconsin Number 2 weighed 616 grams at eight weeks while the chicks getting

the soybean oil meal addition weighed 688 grams. This latter group was still heavier than the control at twenty weeks (Control–1668 grams–Soybean oil meal addition–1771 grams).

“Egg Production and Hatchability: Many trials have shown fairly satisfactory number of eggs produced on the soybean oil meal ration. The egg production has been improved however when animal protein feeds were combined with the soybean oil meal.

“Hatchability has not been satisfactory during the winter in the soy bean oil meal groups. On the other hand spring hatches have been satisfactory. Shortly after the hens are allowed out on the wire sun porches the hatchability begins to improve and on the average, the number of chicks produced per hundred eggs and the quality of chicks has compared favorably with the control group after the breeding hens have been exposed to the warm spring sunshine.

“The addition of manganese to the soybean oil meal ration has resulted in improved winter hatchability in two trials (Mn So ¼ pound per ton). The addition of flavon [sic] has also resulted in improved winter hatchability. Why the addition of the mineral in the one case and a vitamin in the other have both improved winter hatchability is one of the many problems that needs further study.

“In the brief time allotted I have been able to hit only a few of the high places in our soybean oil meal studies. I wish to make special acknowledgement to my colleagues; Dr. C.E. Holmes and Mr. Windsor Cravens; to Professor Hart for his excellent council and also to Industrial Fellows; J.W. Hayward, H.J. Deobald and James Christiansen; who have assisted with various phases of this project; and last, but not least to the Allied Mills, Inc. whose financial assistance has made many of these studies possible.

A large table shows: “Supplemental value of certain ‘High Protein’ feeds. Address: [Univ. of Wisconsin, Madison].

110. *Decatur Herald (Decatur, Illinois)*. 1939. Special Soybean Issue. Spencer Kellogg will triple elevators in million dollar expansion of Decatur plant: construction to begin in spring to include other buildings. Dec. 31. p. 1-96. Sunday.

• **Summary:** This entire issue of the newspaper is sometimes cited as “Special Soybean Issue,” for it has major stories about soybeans on many pages. And many of the large display ads mention soybeans and Decatur. Note that 31 Dec. 1939 is during the Great Depression and the last day of the decade.

Section I Page 2: “Decatur’s giant industry is saluted by Decatur’s oldest department store”–Linn & Scruggs, since 1869 (full-page ad).

Page 3: “Special soybean section tells drama of industry.” “There are 72 pages in today’s Herald and Review. Although this is a larger Sunday paper than we usually print,

mere bulk is not important. Others have published larger editions.

“We have attempted to catch the upsurge in agriculture and industry that has made Decatur the soybean capital of the world. This boast is not lightly made.”

Page 4: “Iowa soybean production in rapid growth, by

Page 4: “Chicago Board of Trade soybean pit” (photo with caption).

Page 4: “Million bushels are processed in Taylorville.”

Page 7: “Greetings: To soybean producers. To soybean processors.” (ad from J.C. Penny Co. Inc.).

Page 9: “A toast–to those whose vision and aggressiveness have given Decatur a great new industry, and made it the soybean capital of the world” (ad from Decatur Dry Goods Co.).

Page 10: Editorials–“Hail to the bean!”

Page 11: “1922, 1926, 1939–Years that are milestones in Decatur’s progress. In 1922 A.E. Staley Sr., pioneered in Decatur the processing of soybeans. Little did the citizens of Decatur at that time realize the tremendous importance of this act. Soybeans? What member of the bean family was this? Was the soybean a new creation of the Great [Luther] Burbank? Was it edible?... (ad from Block and Kuhl Co., a large retailer).

Page 13: Sports news. Rose Bowl story.

Page 14: More sports news. “Congratulations to the Soybean Industry” (ad from Hill’s Bowling Alleys).

Page 15: “On top of the world. Decatur ‘The soybean capital.’ Decatur, Center of activities in the soybean industry” (ad from Frede Chevrolet Co.).

Page 16: 10-year map of the world (major political, military, and economic events portrayed on the huge map, with many individual maps, such as: Growth of Greater Germany. Changes in boundaries of Europe. Growth of Japan. Italy takes Ethiopia).

Section II. Society. II Page 5. “Woman’s Council invites all to hear talk on soybeans.” Dr. R.E. Greenfield, assistant superintendent of the A.E. Staley Mfg. Co. will be the speaker.

II Page 6: “Decatur ‘The soybean capital of the world’” (ad for Benson’s Blue Ribbon Butter). “Decatur ‘The soybean capital of the world’” (ad from Norman Laundry and Dry Cleaning).

II Page 7: Movies. Ice cream store ads.

II Page 8-9: “1939–A year of outstanding new developments in the city.” One is “Archer-Daniels-Midland silos completed.”

II Page 10: “Decatur ‘The soybean capital of the world’” (ad from The F&B Bottling Co.).

II Page 11: “Farmlands get first of snow.” But winter crops were affected little. The farm value of soybeans ranks second only to corn in the state. “Dec. 1 production shows the Illinois [soybean] crop at 45,423,000 bushels, or over half of the total production in the United States, which was

87,409,000 bushels.”

II Page 13: Financial: “Soybean prices up two cents.” “Chicago Board of Trade Quotations” including soybeans.

II Page 14-15. Classified ads. “We are glad to live in the soybean capital of the world” (large ad from Union Dairy). “Decatur ‘The soybean capital of the world’” (ad from Metzler & Sons, distributors of Churngold Margarine).

Section III: Comics in color.

Section IV: On page 7 is a tribute to ADM (see separate entry).

111. *Decatur Herald (Decatur, Illinois)*. 1939. Special Soybean Issue. A colossus of chemistry. Dec. 31. Part IV. p. 7, 10. Sunday.

• **Summary:** This entire issue of the newspaper is sometimes cited as “Special Soybean Issue,” for it has major stories about soybeans on many pages. And many of the large display ads mention soybeans and Decatur. Note that 31 Dec. 1939 is during the Great Depression and the last day of the decade.

The long subtitle reads: “Archer-Daniels-Midland Co. is the official name of a company that may be described only in superlatives—world leader in making vegetable drying oils—builder in Decatur of the world’s largest solvent-process soybean mill. The construction job itself was record making. Its present properties here are but a foretaste of a greater future.”

The article gives a good overview of ADM and its history. The solvent extraction plant here was imported from Germany.

A photo bears this caption: “In charge of A-D-M’s plant and elevator operations are these four men. Left to right they are: Norman Nelson, elevator superintendent; Vern Bloomquist, plant control chemist; Phil A. Breitengross, shipping superintendent, and Robert S. White, superintendent in charge of plant operations. Page 7: An aerial photo shows the ADM solvent plant and its elevators.

“The Daniels Linseed Co. was built by John W. Daniels at Minneapolis, Minnesota, in 1902.

“George A. Archer joined with Mr. Daniels in 1903 and the Archer-Daniels Linseed Co. was organized and started operations at Minneapolis.”

The present “corporate structure was formed in May, 1923, under the laws of Delaware,... as a successor to the Archer-Daniels Linseed Co.”

“The company’s credit rating with banks is as high as any firm in the country and on its loans the interest rates are extremely low.

“This situation is explained simply—In all of the 100 years of its history, the present company and its forerunners claims never to have had a losing year.

“The record of the Archer and Daniels families, as far as can be determined is spot-clean of a financial blemish. In no year is a loss noted—a record few companies in America can

equal or boast.”

112. Christiansen, J.B.; Halpin, J.G.; Hart, E.B. 1940. Studies on the nature of the effective supplements for soybean oil meal in rations for the production of hatching eggs. *Poultry Science* 19(1):55-60. Jan. [4 ref]

• **Summary:** The authors reported very poor hatchability of hen’s eggs when the diets of the hens consisted of substantial levels of soybean oil meal. They improved the hatchability by the use of several supplements and concluded that at least the winter slump in hatchability could be completely eliminated by the addition of manganese or riboflavin.

Address: Depts. of Biochemistry and Poultry Husbandry, College of Agriculture, Univ. of Wisconsin, Madison.

113. **Product Name:** Soybean Oil, Soybean Oil Meal.

**Manufacturer’s Name:** Galesburg Soy Products Co. Renamed Galesburg Soya Products Company by Nov. 1943.

**Manufacturer’s Address:** Galesburg, Illinois.

**Date of Introduction:** 1940 February.

**Ingredients:** Soybeans.

**New Product—Documentation:** *Decatur Herald* (Illinois). 1940. Feb. 15. p. 3. “Bean Business shifted here following fire.” “As a result of a \$150,000 fire which destroyed the soybean mill and elevator of the Illinois Soy Products Co. in Springfield, Wednesday, business of the firm will be shifted temporarily to Decatur. The Decatur Soy Products Co. at Gault street and the Illinois Central railroad, is a branch of the Springfield company of which I.D. Sinaiko is president.”

National Soybean Processors Association. 1941. *Year Book, 1941-1942*. A printed page to be inserted [p. 18A], titled “New members added since publication of the Trading Rules Book” [in about Sept. 1941], includes: Galesburg Soy Products Co., Galesburg, Illinois (Max Albert).

*Soybean Digest*. 1942. “Feed more protein.” Aug. p. 13. This page of patriotic and commercial information is apparently sponsored by five small soybean crushers, including Galesburg Soy Products Company (Galesburg, Illinois). Note: This company was founded by Max Albert.

Ad in *Soybean Digest*. 1942. Nov. Back cover. A list of soybean processors includes Galesburg Soy Products Company at this location.

USDA Northern Regional Research Laboratory. 1943. “Soybean processing mills in the United States.” *USDA Bureau of Agricultural and Industrial Chemistry*. AIC-26. 10 p. Nov. See p. 1. Galesburg, Illinois: “Galesburg Soya Products Company.” (Medium = capacity between 50 and 200 tons/day of soybeans).

*Decatur Herald* (Illinois). 1945. June 27. p. 12.

“Galesburg plant burns.” Galesburg, Ill., June 26. (AP) “A fire of uncertain origin destroyed a large processing unit of the Galesburg Soy Products Co., late today.” Max Albert, president of the company, said the loss might run as high as \$400,000. The company, which processes about 1.25 million

bushels of soybeans each year, also suffered a disastrous fire in Oct. 1942.

“Summary of Archer-Daniels-Midland business activity” (in Pho 2002, p. 64). Sept. 1965–Galesburg Soy Products acquired by ADM for cash.

114. Return of marriage to clerk of district court [marriage certificate]. 1940. Dubuque County, Iowa. 1 p.

• **Summary:** “1. Full name of Groom: Reuben Peter Andreas

“2. Place of residence: Cedar Rapids, Iowa

“3. Occupation: Merchant

“4. Age next birthday: 59 years. Color: white. Race:

Caucasian

“5. Place of birth: Sterling, Illinois

“6. Father’s name: Martin Andreas

“7. Mother’s maiden name: Mary Rutt [1851-1907]

“8. Number of groom’s marriage: 2nd marriage

“9. Full name of Bride: Pauline Margaret Herrick

“Maiden name if a widow: Pauline Margaret Stoltz

“10. Place of residence: Chicago, Illinois

“11. Age next birthday: 52 years. Color: white. Race:

Caucasian

“12. Place of Birth: Woonsocket, South Dakota

“13. Father’s name: Bernard Stoltz

“14. Mother’s name: Margaret Hummel

“15. Number of bride’s marriage: 2nd marriage

“16. Witnesses to marriage: Lowell W. Andreas, Mrs.

Russel J. Jones

“August 10, 1940

“We Hereby Certify, That the information above given is correct, to the best of our knowledge and belief

“R.P. Andreas, Groom

“Mrs. Pauline Herrick Andreas, Bride

“I hereby certify that the above is a correct return of a marriage solemnized by me:

“At Dubuque, Iowa. Rev. Laurence E. Murphy

“this 10 day August 1940 Minister Summit Church”

A separate photo shows the couple in fell wedding attire. Address: Dubuque County, Iowa.

115. Burlison, W.L. 1940. Importance of soybeans to American agriculture (With some notes on soybean research). *Proceedings of the American Soybean Association* p. 27-30, 34-35. 20th annual meeting. Held 18-20 Aug. at Dearborn, Michigan.

• **Summary:** Contents: List of 11 things that the future of the soybean as an important Illinois crop is dependent upon—according to G.L. Jordan, Dep. of Agricultural Economics, Univ. of Illinois. Where do we go from here in soybean production? Table 1—Annual production of soybeans in five leading countries from 1925-1939: USA, Manchuria, Chosen [Korea], Japan, Netherland India. Table 2—World production of soybeans in 1,000 bushels (excluding China) from 1925-1939, including percentage increase each year over 1925. These figures include, in addition to the countries shown in Table 1, Kwantung, Taiwan, U.S.S.R., Rumania, Bulgaria, Yugoslavia, and certain other small countries in Europe. U.S. soybean production as a percentage of world production. Why this rapid increase in U.S. soybean production? Rapid increase in U.S. soybean production during the past 6 years. Research leads the way: List of typical research projects at larger corn belt agricultural experiment stations.

Extracts from letters on the future of soybeans in Illinois from thoughtful observers: H.G. Atwood, Allied Mills, Inc., 26 Dec. 1939. G.G. McIlroy, President, American Soybean Association, 7 Dec. 1939. W.J. O’Brien, The Glidden Co.,

8 Dec. 1939 (use of oil in paints). N.P. Noble, Swift and Company Soybean Mill, 8 Dec. 1939 (Swift has now built soybean mills at Cairo, Illinois; Des Moines, Iowa; and Fostoria, Ohio. Swift is using larger quantities of soybean oil in their various products). Edward J. Dies, National Soybean Processors Assn., 14 Dec. 1939. D.F. Christy, Acting Director, USDA Office of Foreign Agricultural Relations, 17 Feb. 1940. E.F. Johnson, Ralston-Purina Company, 21 Dec. 1939. H.P. Rusk, Dean and Director, Illinois Experiment Station, 22 May 1940. J.W. Hayward, Archer-



Daniels-Midland Company, 24 May 1940.

Growth in the number of soybean crushing mills in the USA from about 10 in 1925 to approximately 75 in 1939. Increase in soybean yields in Illinois from 13.5 bushels/acre in 1925 to 24.5 bushels/acre in 1939. Growing industrial utilization of soybeans. Conclusion: "The importance of soybeans to American agriculture is bound to be of greater significance as the years go by."

Concerning research: "Our research program on soybeans in this country is nothing less than remarkable. In 1937 a list of soybean projects was published by H.M. Steece, Specialist in Agronomy, Office of Experiment Stations, U.S. Department of Agriculture." In 1937 some 53 agricultural experiment stations were conducting 258 separate investigations on soybeans. "By far the largest number of these have to do with the varieties and methods of production." A photo (p. 29) shows a tractor pulling a combine harvesting soybeans in Indiana.

Note: This is the earliest English-language document seen (March 2003) that uses the term "soybean research" (see subtitle) to refer to research on soybean production. Address: Head, Dep. of Agronomy, Univ. of Illinois.

116. Hayward, J.W. 1940. Soybean oil meal: Its current consumption. *Proceedings of the American Soybean Association* p. 21-23. 20th annual meeting. Held 18-20 Aug. at Dearborn, Michigan.

• **Summary:** The soybean arrived in America in 1804. During the past ten years the production of soybean oil meal as such has increased in the United States from about 39,000 tons to approximately 1,250,000 tons. Practically all of this production has been used as a feed for livestock and poultry.

For the past several years production of soy flour has held between 11,000 and 15,000 tons. "Before leaving this subject on food, I do wish to give credit to the increasing popularity of edible green soybeans, many specialty soybean products and special health foods, such as soy milk, etc."

Properly processed soybean oil meal is a better feed than raw uncooked soybeans. "In most cases, I think you will find that protein can be purchased cheaper in soybean oil meal than it can be supplied by feeding soybeans at market prices even though they were raised on your own farm." Several calculations are given to prove this point.

Note: This is the earliest English-language document seen (June 2009) that uses the term "edible green soybeans" to refer to green vegetable soybeans. Address: Chairman, Soybean Nutritional Research Council.

117. Hayward, J.W.; Hayward, Mrs. J.W. 1940. Little soybean who are you? *Proceedings of the American Soybean Association* p. 6. 20th annual meeting. Held 18-20 Aug. at Dearborn, Michigan.

• **Summary:** This poem, written and submitted by Dr. and Mrs. J.W. Hayward reads: "Little Soybean who are you /

From far off China where you grew? / I am wheels to steer your cars, / I make cups to hold cigars. / I make doggies nice and fat / And glue and feathers on your hat. / I am very good to eat, / I am cheese and milk and meat. / I am soap to wash your dishes, / I am oil to fry your fishes, / I am paint to trim your houses, / I am buttons on your blouses. / You can eat me from the pod, / I put pep back in the sod. / If by chance you're diabetic / The things I do are just prophetic. / I'm most everything you've seen / And still I'm just a little bean." Address: I. PhD.

118. Taggart, M.F. 1940. Progress in soybean oil paint. *Proceedings of the American Soybean Association* p. 24-26. 20th annual meeting. Held 18-20 Aug. at Dearborn, Michigan.

• **Summary:** "Upon the occasion of this twentieth anniversary of the organization of the American Soybean Association, it is surely quite fitting that the agenda should include such a lay subject as Soya Oil Paint.

"It is not my privilege to know what is going on in other paint laboratories and you can bet your bottom dollar that I do not care, because we have found it just good horse sense to tend to our own rat killing.

"In these times of political, economic and even social unrest, it is often a bit difficult for us to focus our attention upon the more prosaic things of our everyday life. Paint for example.

"This assemblage seems to be permeated with the aroma of Soya Beans. The very presence of such missionaries as Messrs. McIlroy, Johnson, Hayward, Milner, Burlison, Beeson, Boyer and others testifies to the interest in Soybeans throughout the country.

"You are all conversant with the phenomenal rise in importance of Soya Beans as a farm crop. If you will but lend an ear to the other program colleagues, you will be impressed with the versatility of that once lowly but now mighty Soybean.

"Your slaving program officials have asked me to speak upon the Progress of Soybean Oil Paint. Had that subject wordage been phrased, Progress in Oil Paint, I would have centered my expression around Soya Bean Oil. Had the subject been stated Progress in Varnish, I would have necessarily put the spot light upon Soya Bean Oil. So anyway you word my subject, you will receive the same response, so long as you use that first word Progress. | Now Progress works like a window shade—up and down—and again like a window shade it's the pull that counts, not the push. Try pushing up a window shade some day and see how well you get along.

"Now, just how many people are pulling for Soya Paints?

"For some years, this American Soybean Association, the National Farm Chemurgic Council, the Processors and others have been trying to pull the paint formulating chemists

into using greater amounts of Soy Bean Oil in surface coatings and if we are to believe the statements attributed to Otto Eisenschiml and Dr. Holly in a recent issue of *Paint, Oil and Chemical Review*, the party is over. You proponents of Soy Bean Oil in paint might just as well pick up your doll rags and go home. It seems that Soya Bean Oil has to have some other oil carry the load. Perilla Oil, Tung Oil, Linseed Oil or what have you. Some off-breed resin might help.

“Personally, I do not believe such statements are factorial. I hope the two men have been misquoted.

“Permit me to go out on that celebrated limb.

“In 1935, the O’Brien Varnish Company used the insignificant amount of 100 gallons of Soya Bean Oil entirely experimental, because their chemists did not then know how to make good use of the oil and I was in charge of the work. Upon the goading of your Soy Bean Missionaries, the chemists were spurred on to more intensive effort. Let us advance the date now and raise the curtain on a scene of 1940 in the same paint and varnish plant. There you will be amazed, or at least pleasantly surprised, to discover that over 800,000 pounds of Soya Bean Oil will be used this year alone. There are those who will shout derisively, ‘Shame on such chemists.’ ‘The very idea of putting Soya Bean Oil in paint.’ ‘Why, it won’t dry.’ ‘It is too soft, it is an adulterant.’ And so on far into the night.

“Chemists, generally speaking, are self centered folks. Usually going on about their business with but little care for what the general public says or thinks. Being concerned more in accomplishing something, and incidentally have a lot of mental fun, chemists have made great strides, forward toward the goal of Soya Oil Paints.

“Witness the jump in one plant, above mentioned, from a mere hundred gallons to 800,000 pounds in but five years of virgin research. I wonder what others are doing? I’ll bet they are doing plenty with Tung Oil out of sight in price and Perilla Oil recently off the market entirely.

“Let us get at the Progress in Soya Bean Oil Paints more concretely. Here is a panel showing a white enamel as fine a piece of goods as your wife or mine would ask for, for her household use. The product is long in oil, will stay white, has a beautiful luster, is washable, easy to apply, dries fine, get that—I said dries fine, and the oil constituent is all Soya Bean Oil. True, the oil is not just any old Soya Bean Oil that may be laying around the plant in some leaky drum. The oil has received a rather specialized treatment as yet not patented nor even applied for, but the treatment is as different as night and day, and does do the job. Believe it or not, Soya Bean Oil by this treatment is so re-orientated internally as to chemical structure that the pure oil without driers, without added resins or other oils, will dry in a reasonable time to a film quite satisfactory for use in paint products. That, folks, is progress.

“Again resorting to panel display, this treated Soya Bean Oil may be incorporated into various types of varnishes

which are highly resistant to water spotting. That is progress. Dr. Milner may elaborate upon that phase of his work and I will not encroach upon his sphere of activity because of my respect for his efforts and because I like him personally.

“I mentioned this window shade business as a simile earlier in my remarks. Let’s get back to that. We have found that Soya Oil Paints merchandize themselves in those geographical areas where the good word has been spoken. Noised around a bit as it were. First hand experience with a well made Soya Paint will quickly sell the user upon the high quality of Soya Paint. So you see what I mean when I allude to the window shade episode. Good Soya Paints are pulling converts down the middle aisle to the altar of paint quality, and that is my idea of Progress.

“From all directions, you are hearing that first quality paint products can be and are now regularly produced from Soya Bean Oil. Now, why is it that such fact is not reflected in your statistics resume. Here’s the reason: When the urban painter has become confirmed to the religion of more for his dollar, when the farmer insists upon better quality via Soya Bean paints, when in short the gospel has been well preached by sincere pastors of your Church of the Soya Bean—then, there will be a real meaning to Progress in Soya Bean Paints.

“There has been great progress, there will be great progress further, but there is an undercurrent of adverse apathy toward Soya Oil Paints. Wonderful products are regularly made using Soya Bean Oil and we are very happy over the net results but we have noticed that Soya basis paints receive wide acclaim by their own virtues of quality most surely when we make no mention of the presence of Soya Oil. The paints or enamels unto themselves are extra fine top graders, but we dare not tell the whole truth because of certain insidious carpet-bag gossip behind the scenes.

“A definite curse unjustly has been hung onto Soya Bean Oil Paints. Possibly, it is another case of the sins of early youth cropping out, but the curse is there, sin or no sin, either in innocence or ignorance.

“Here is a worth-while opportunity for your publicity committee to do you some real good. Make an independent investigation. Determine the facts.

“Call out the guard, sound off, and you will have progress.

“It is OK by me if I am accused of having spoken rather militantly. I admit it. When I know that such fine folks as the Central Soya Company of Decatur, Indiana, are in there pitching for Soya Oil paint progress, I believe in mentioning it.

“Now brace yourself. The bull’s coming.

“I am sick and tired of hearing what all is wrong with Soya Bean Oil, and I am not interested in picking specks out of rotten apples. However, I am aroused by certain progress in rust inhibitive properties of a new Soya Bean Oil Paint. Here it is or may I say, ‘Here she be.’ That panel was just an old rusty piece of iron. Upon this area over the

rust, we applied good red lead and oil. Admittedly a honey for structural steel maintenance. Underneath that film, the rust is still there as you can determine by merely scratching. Upon this other area, we applied a new Soya Bean coating—right over the rusty surface. By similarly scratching the surface, you may note that the rust is no longer there and the structural iron body is protected. Now that is all I am going to tell you about it. But the general public can suck on their thumb for the rest of the story. We are going to town on it.” Address: Director of Research, O’Brien Varnish Co., South Bend, Indiana.

119. *Minneapolis Star Journal (Minneapolis, Minnesota)*. 1940. FTC charges are denied by 6 firms. Sept. 28. p. 15.  
 • **Summary:** “Washington—Federal trade commission charges of a combination in restraint of trade were denied by American Lecithin company; Glidden company, Cleveland; Archer-Daniels-Midland company, Minneapolis; Ross & Rowe, Inc., New York; Hansa-Muehle, a German corporation, and Aarhus Oliefabrik, a Danish corporation.

“In their answers to the FTC complaint, the firms explained the [American] Lecithin company was formed to make available in this country patents held by the European firms. Lecithin is used in manufacture of candy, paints and other products.”

Note: ADM was apparently making lecithin at this time.

120. Archer-Daniels-Midland Co. 1940. Archer brand: The mark of quality soybean products (Ad). *Proceedings of the American Soybean Association* p. 12.

• **Summary:** A full-page ad. The company now makes and sells 44% protein soybean oil meal, flakes & pellets, and 41% protein soybean oil meal. It has soybean processing plants strategically located at Chicago, Illinois; Toledo, Ohio; Milwaukee, Wisconsin; Minneapolis, Minnesota; Buffalo, New York; and Decatur, Illinois. “Ready for operation October 1st. The largest soybean processing plant in the United States.” A large, bold illustration shows the company’s “Archer brand” logo. Address: Minneapolis, Minnesota.

121. Hayward, J.W. 1940. Soybean oil meal processing: Various systems employed by leading oil meal manufacturers. *Flour & Feed* 41(4):24. Sept.

• **Summary:** “Processes now used for the manufacture of soybean oil meal are: the solvent extraction process, resulting in 44 per cent protein or New Process soybean oil meal, and the hydraulic and expeller processes producing 41 per cent or Old Process soybean oil meal.

“Our company [ADM] was the first to install the approved continuous method of solvent extraction for soybeans in this country. This installation was made in Chicago in 1934. Since this time the Glidden Co. has installed two similar solvent extraction units—Central Soya

Co., Inc., installed a very large unit of a little different design but the same continuous principle a couple of years ago at Decatur, Indiana, and the Clinton Co. of Clinton, Iowa, also put up a continuous solvent extraction unit a few years ago. Three small extraction units of the Henry Ford design are operating in Michigan not far from Dearborn. The Drackett Co. of Cincinnati, Ohio, is processing soybeans by the solvent extraction method and the Honeymead Co. is using a solvent extraction unit of the Allis-Chalmers Manufacturing Co. design in processing soybeans at their plant in Cedar Rapids. Then too, just last year we put up the largest continuous extraction unit in this country of the same design as Central Soya’s. This installation of ours was made at Decatur, Illinois, and has a capacity of better than 400 tons of soybeans per day. We began operating this soybean plant at Decatur in November, 1939.”

Note: This is the earliest document seen (Oct. 2018) that mentions “Honeymead” or the “Honeymead Co.” in connection with ADM. Address: ADM, Minneapolis, Minnesota.

122. McBride, Gordon W. 1940. Chemical engineering advances in soybean processing. *Chemical and Metallurgical Engineering* 47(9):614-18. Sept. [2 ref]

• **Summary:** A photo (p. 1) shows the new Archer-Daniels-Midland Co. solvent extraction plant at Decatur, Illinois. “Meal used in plastics: Although considerable discussion has been heard of the use of soybean meal in plastics, there has not been a great amount actually used. The meal corresponds to a filler, though in part it does react with formaldehyde to form a low-quality plastic. A superior molding compound has been achieved by the use of this meal with phenol-formaldehyde plastic. This has been publicized to a considerable extent by the Ford Motor Co.”

Industrial proteins “find application in the manufacture of paper sizings, adhesives, laminated fiber board, water paints, and miscellaneous coatings. Small molded parts are also being produced from preparations containing phenolic or urea molding compositions in admixture with varying amounts of purified soybean protein pre-hardened with formaldehyde.”

“One large potential outlet for the meal is in the manufacture of a protein fiber by techniques comparable to those of other synthetic fibers already well known.” Address: Chemical engineer, Washington, DC.

123. McBride, Gordon W. 1940. What’s happening with soybeans? *Food Industries* 12(10):55-57. Oct.

• **Summary:** “Greatly increased production, with accompanying increase in soybean oil output and wider utilization of other soybean products, is influencing all food industries.” Discusses, with many statistics, the utilization of soybeans in the USA, including the amount used for oil (crude and refined; nonfood and food), meal, industrial

proteins, and foods. An interesting table on page 56 states that the following foods “are made from soybeans” [sic, many contain soybeans plus other ingredients]: bean powder, bean curd, soy sauce, soy milk, breakfast food, invalid foods, soy flour, infant foods, ice cream, baked goods, macaroni, and sausage. Whole soybeans are used to make sprouts, cooked beans, soy sauce, confections, breakfast foods, meat substitutes, and coffee substitutes. Either whole soybeans or soy flour are used to make “fresh vegetable milk,” which can be further processed to make condensed milk, dried milk, confections, cheese, or casein.

“In addition to the increasing quantities of soybeans that are brought to the market as a fresh green vegetable, larger quantities of the green beans are being canned each year. One unofficial estimate placed the 1939 pack at 15,000 cases (24 one-pound cans each).”

A photo shows the soybean products plant of Archer-Daniels-Midland Co. recently erected at Decatur, Illinois. Address: Chemical Engineer, Washington, DC.

124. McBride, Gordon W. 1940. What’s happening with soybeans? Greatly increased production, with accompanying increase in soybean oil output and wider utilization of other soybean products, is influencing all food industries. *Food Industries* 12(10):55-57. Oct.

• **Summary:** A wide-ranging discussion of soybean production and utilization in the USA.

A large photo shows an aerial view of the Archer Daniels Midland Co, soybean products plant, recently erected at Decatur, Illinois. A table gives “Salient soybean statistics.” A diagram (p. 56) shows the many different food products made from soybeans, with estimated output of the major products in 1939.

Bar charts show: (1) The uses of soybean oil made in the USA each year from 1931 to 1939 (Source: USDA, based on Bureau of Census data). The three uses are: Food products, drying industries, and soap + miscellaneous and loss including foots. The total and the percentage used in food products increased dramatically after 1934, so that in 1939 about 83% was used in food products.

(2) Production, utilization, and average farm price of soybeans in the United States, 1924-1939. The price of soybeans fell steadily from 1924 (\$2.50 per bushel) until 1931 (\$0.50 per bushel) then it rose gradually to about \$0.80 a bushel in 1939. The bar for each year shows the total production, amount used for seed and feed, crushed by domestic mills, and exported. Soybeans were exported in 1931, 1932, 1935, and 1937-39. Address: Chemical Engineer, Washington, DC.

125. Archer-Daniels-Midland Company. 1940. Archer brand: The mark of quality soybean products (Ad). *Soybean Digest*. Nov. p. 10.

• **Summary:** A large photo shows “The largest soybean

processing plant in the United States, located at Decatur, Illinois.” Other soybean processing plants are strategically located at Chicago [Illinois], Toledo [Ohio], Milwaukee [Wisconsin], and Buffalo [New York].

“Our recently enlarged facilities at Decatur permit us to offer the best of service on straight or mixed cars of 44% and 41% soybean products... meal, flakes and pellets.”

The “Archer Brand” logo shows an archer, within a circle, pulling his bow. Above him, in a larger circle, is the word “Archer” and below the word “Brand.”

Note: During the period 1940-1942 ADM has many ads in *Soybean Digest* but mostly only for soybean meal—rarely for soybean oil. Address: Minneapolis, Minnesota.

126. *Decatur Daily Review (Illinois)*. 1940. Staley’s career given praise by business chiefs: His passing certain to be felt widely here. Dec. 27. p. 16.

• **Summary:** “Leaders of Decatur business and industry joined today with grain officials from widely-scattered parts of the country in paying tribute to A.E. Staley, Sr. Their comments follow:” Comments are given by:

“W.R. McGaughey, president of the Milliken National Bank... He had the rare quality of liking people and they in turn liked him.”

“H.R. Gregory, president of the National Bank of Decatur.”

Shreve M. Archer, of the Archer-Daniels-Midland Co... His life is an example of what may be accomplished by hard work and courage and should be a bright beacon to those who follow.

“Frank L. Evans, of the Evans Elevator Co.: Mr. Staley was a truly great man with unlimited vision and the rare ability to make those visions come true. His human kindness and understanding made every visit a pleasant memory. His going is a greater personal loss to more individuals than any man I ever knew.

“Emil F. Kull, of the Baldwin Elevator Co.: Mr. Staley was one of the grandest men I ever had the privilege to know. Not only was he a genius as a builder of big industry but also a genius in inspiring people with whom he came in contact. His great personality and charm was always present regardless of where you met him. His memory will always remain with all who knew him.

“W. Everett Mueller, president of the Mueller Co.: We will miss him tremendously. Mr. Staley did a great deal for the development of Decatur and the state of Illinois, particularly in his work in building up the soybean industry. The marvelous organization he directed here is a great credit to this city.

“C.C. LeForgee, of the law firm of LeForgee, Samuels & Miller, and general counsel for the A.E. Staley Mfg. Co.: Mr. Staley was truly a great man, more so than most people realized. He had the power to visualize and, what is equally important, the power to put his visions in concrete form. He

had a genuine feeling of sympathy for everyone, and the doors of his office were never closed to the workmen in his plant. When Mr. Staley came quietly to Decatur he visualized a great industry here, and it is comforting to know he saw his dream come true.

“W.L. Shellabarger, manager of the soybean division of Spencer Kellogg & Co.: Decatur lost one of its greatest men in its history with Mr. Staley’s death. He was a great builder and an understanding friend of all, from the highest to the lowest ranking.

Mayor Charles E. Lee of Decatur: Mr. Staley exerted a tremendous influence on the growth and development of Decatur, just how much it is impossible to tell. The city has lost one of its best citizens.

“F.M. Lindsay of the Decatur Herald & Review and president of the Community Chest: Mr. Staley has been the Community Chest’s finest friend, its greatest giver and greatest inspiration. He knew that institutions and communities are built by men and he always did a great part in giving both financial and community leadership.

“E.K. Scheiter, vice president of the Staley company: I will always remember Mr. Staley as a great builder. He built dreams into practical realities. He inspired men by his own indomitable will to do worthwhile things. He has been the single greatest influence in my life and the lives of many others. A.E. Staley was a genius.

Howard File, chief chemist at the Staley plant: Mr. Staley has been an inspiration to me ever since I left school in 1912 to work for him. We all admired his leadership, his ability to make you see things straight. He had imagination. After talking to him you couldn’t help getting ideas. Everyone in the plant knew him and he was never too busy to talk to any of his employees.

Glenn A. Moran, president of the Staley Fellowship Club: In behalf of all the members of the Staley Fellowship club I wish to extend my deepest sympathy to the family of Mr. Staley. They have lost a wonderful father. He was a humanitarian in the true sense of the word. He was always ready and willing to help the Fellowship club in any way possible. He was a great and good man, and the membership of the Fellowship club feel a personal grief in his passing.

“Charles A. Keck, pipe fitter foreman at the Staley plant: Mr. Staley was one of the grandest men I’ve ever worked for. I’ve worked for him for 29 years. His office was open to everybody anytime you wanted to go in. If any of his employees needed help or advice, he could always get it from Mr. Staley.”

“A.H. Hansen, assistant millwright foreman at the Staley plant:... Mr. Staley was the best man I ever worked for. He treated his employees well and often asked our opinions on things. He always wanted ideas on working conditions in the plant. I’ve been at Staley’s 22 years and he has always been the same.”

127. **Product Name:** Granose Protose (Formerly named Nutmeat).

**Manufacturer’s Name:** Granose Foods Ltd.

**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1940.

**Ingredients:** Wheat protein, cashew nuts, peanuts, wheat flour, soya flour, yeast, salt, hydrolysed vegetable protein.

**New Product–Documentation:** Manufacturer’s catalog. 1980. April.

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by Granose, was introduced in 1940. It has been discontinued.

128. Hayward, J.W.; Hafner, F.H. 1941. The supplementary effect of cystine and methionine upon the protein of raw and cooked soybeans as determined with chicks and rats. *Poultry Science* 20(2):139-50. March. [31 ref]

• **Summary:** This article begins: “The exact nature of the change that occurs in the protein of the soybean as a result of cooking has been a subject of study for many years.

“Osborne and Mendel (1917) described experiments with rats which showed that the protein of raw soybeans would not support appreciable growth. Cooking ground raw soybeans was effective in converting the protein into a form that stimulated normal gains.”

This is the earliest study to show that cystine and methionine are important amino acids in improving soy protein quality as determined by feeding both raw and cooked soybeans to rats and chicks.

Homocystine, choline and/or lecithin may also be part of the explanation. Address: Dep. of Nutritional Research, Archer-Daniels-Midland Co., Minneapolis, Minnesota.

129. Goss, W.H. 1941. Modern practice in solvent extraction. *Chemical and Metallurgical Engineering* 48(4):80-84. April.

• **Summary:** The American soybean processing industry uses hydrocarbons “to solvent-extract about 350,000 tons of beans per year, i.e., over 20% of its operations.”

“Solvent extraction of soybeans, as we know it, did not originate in the U.S. Its reduction to practice occurred in the twenties and early thirties and was the natural result of the requirements of Germany and the Low Countries for supplies of edible oils and of protein feeds for their livestock. In Europe, a soybean extraction industry evolved quite logically as a result of (1) the ability of the German trade program to make available plentiful supplies of Manchurian beans, (2) the necessity for recovering the utmost yield of oil in order to meet domestic deficiencies, and (3) the unique adaptability of soybeans to solvent extraction.”

“As far back as the early twenties, efforts were made to solvent-extract soybeans in this country. A Bollman [Bollmann] type of extractor at Norfolk, Virginia [owned by the Eastern Cotton Oil Co.], ran local soybeans in 1924-

1925 and attempted to process imported flaxseed, but the project was unsuccessful. Another Norfolk plant used Scott rotary extractors on a variety of oil-bearing seeds, including soybeans and copra, during the same period. About a year earlier, a batch solvent system at Monticello, Illinois, also failed. The first successful large-scale operations were those of the Archer-Daniels-Midland and the Glidden companies who installed Hildebrandt type extractors in Chicago during 1934 and 1935. The Glidden plant was destroyed by an explosion in 1935 but was immediately rebuilt with a doubled capacity.”

“At present, there are 5 solvent systems used in large-scale soybean extraction in this country, 2 of them being of German and 3 of American origin. These are installed in 8 large (over 50 tons of beans per day) and 2 small plants. At least one other system is operated on a relatively small scale” (see table 2).

An extractor of the Allis-Chalmers type processes soybeans at Cedar Rapids, Iowa. Until recently, another processed soybeans at Evansville, Indiana (probably for American Soya Products Corp.).

“The enthusiasm which ran high in the early 1930’s for the ‘industrialized barn’ type of soybean extractor has become more rationalized, and at least 2 technically satisfactory types of extractors have resulted. The Ford Motor Co. developed one consisting of an inclined tube housing an internal screw which conveys beans upward against a countercurrent solvent flow. It is now being used in one large and 2 small plants, all owned and operated by Ford.

“There has evolved, from work done by Iowa State College and by the R. & H. Chemicals Department of E.I. du Pont de Nemours & Co., an extraction system which, in simple terms, might be described as a Ford extractor running backwards. It is designed for solvents heavier than soybean oil, specifically trichloroethylene; hence it operates with an upward flow of solvent and downward flow of soybeans in the main extraction tube. There are no commercial installations at present.”

“Apparently there is only one commercial soybean extraction plant in the world using any solvent other than a petroleum cut. The exception is the Manchuria Soybean Industry Co., in Dairen. Here, the so-called hot alcohol process is used with a battery of rotary extractors to process approximately 100 tons of soybeans per day. The solvent is 99.8% ethanol... Considerable research has been directed toward the use of methanol-benzene and ethanol-benzene mixtures for soybean extraction in cases where phosphatide recovery is of importance. In the late 1920’s, the plant of the Hansa-Muehle, A.G., at Hamburg operated for a short time using such mixtures.”

Tables show: (1) Soybeans (tons and percentage of total) processed annually in USA by expeller, solvent, and hydraulic methods (1936-39; in 1939 the percentages were 74.2, 20.2, and 5.4 respectively). (2) Estimated total

capacities of installations of the various types of continuous solvent extraction systems worldwide and in the USA (Basis: short tons of oilseeds or oilseed press cakes per 24 hours): Bollman (German): 3,100 / 750. Hildebrandt 2,200 / 430. Fauth (German): 800 / 0. Allis-Chalmers (American): 170 / 170. French (American) 130 / 130. Ford (American): 75 / 75.

Photos show: (1) Aerial view of Central Soya’s huge processing plant at Decatur, Indiana. It uses both a Bollman extraction system and expellers. (2) Ford Motor Company’s soybean mill at River Rouge plant (exterior view). (3) Two small soybean extractors in Ford’s soybean mill at Saline, Michigan. (4) The huge soybean mill of Hansa-Muehle, A.G., Hamburg, Germany, using the Bollman system. (5) Hildebrandt extractor. (6) Experimental extractor built by the R. & H. Chemicals Department of E.I. duPont de Nemours & Co., Niagara Falls, New York. Address: U.S. Regional Soybean Industrial Products Lab., Urbana, Illinois.

130. U.S. Federal Trade Commission. 1941. In the matter of American Lecithin Company, Inc., et al. *Federal Register* 6(98):2478-80. May 20.

• **Summary:** This ruling is in “Docket No. 4173. Part III–Digest of Cease and Digest Orders.”

Page 2479: In the Matter of American Lecithin Company, Inc., a Corporation, Its Officers, Joseph Eichberg, President, Armand May, Vice-President, Whitney D. Eastman, Vice-President, Clifton M. Kolb, Secretary, Richard H. Horsburg, Treasurer, Its Directors, Adrien Joyce, Chairman, Ross & Rowe, Inc.; The Glidden Company, a Corporation; Archer-Daniels-Midland Company, a Corporation, Its President, Shreve Archer; Hansa-Muehle, a German Corporation; Aarhus Oliefabrik, a Danish Corporation; and American Lecithin Corporation.

These entities are ordered to cease and desist from using patents to discourage free competition in selling lecithin. Address: Washington, DC.

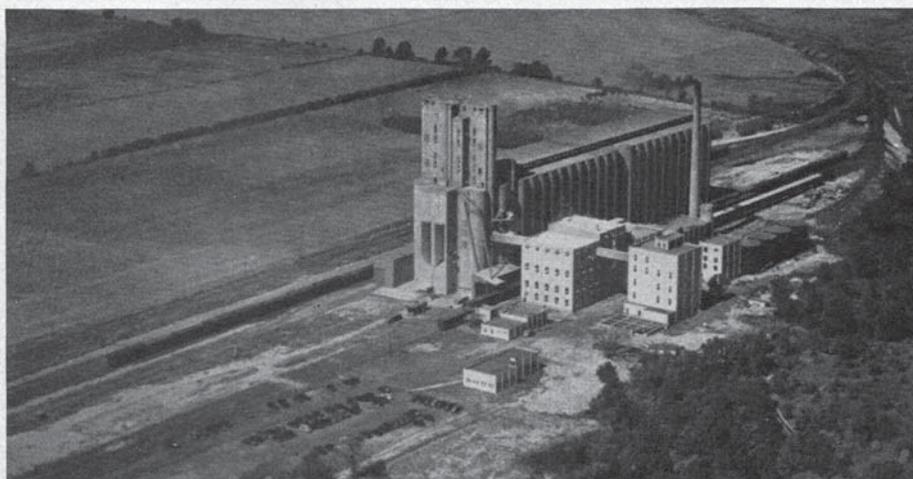
131. Archer-Daniels-Midland Company. 1941. Archer brand: The mark of quality soybean products. What is good-will? (Ad). *Soybean Digest*. May. p. 9.

• **Summary:** See next page. A large photo shows an “A.D.M. soybean processing plant. Located at Decatur, Illinois.” Other soybean processing plants are strategically located at Chicago [Illinois], Toledo [Ohio], Milwaukee [Wisconsin], and Buffalo [New York].

“Good-will is the disposition of a satisfied customer to return to the place where he has been well treated.

“The Archer and Daniels families have been engaged in the Oil Milling Business for a century (1840-1940), and the good-will which has been built up during those hundred years in jealously guarded in every transaction.”

The “Archer Brand” logo shows an archer, within a circle, pulling his bow. Above him, in a larger circle, is the word “Archer” and below him the word “Brand.”



*A. D. M. Soybean Processing Plant . . . Located at Decatur, Illinois.*

Other Soybean Processing  
Plants Strategically  
Located at:

CHICAGO  
TOLEDO  
MILWAUKEE  
MINNEAPOLIS  
BUFFALO

*The Mark of*



*Quality Soybean Products*

## WHAT IS GOOD-WILL?

Good-Will is the disposition of a satisfied customer to return to the place where he has been well treated.

The Archer and Daniels families have been engaged in the Oil Milling business for a century (1840-1940), and the good-will which has been built up during those hundred years is jealously guarded in every transaction.

**ARCHER-DANIELS-MIDLAND COMPANY**  
MINNEAPOLIS, MINN.

This ad also appears in the July 1941 issue (inside back cover). Address: Minneapolis, Minnesota.

132. National Soybean Processors Association. 1941. Year book, 1941-1942 (Association year). Chicago, Illinois. 53 p.  
• **Summary:** See next page. Contents: Constitution and by-laws (as amended Oct. 13, 1941; incl. committees, code of ethics). Officers, directors and committees for 1941-42. Membership of the National Soybean Processors Association. Trading rules governing the purchase and sale of soybean oil meal (First adopted 18 Oct. 1933). Appendix to trading rules on soybean oil meal. Trading rules on soybean oil. Appendix to trading rules on soybean oil—Official testing methods.

Article IX, Committees, lists and describes each.

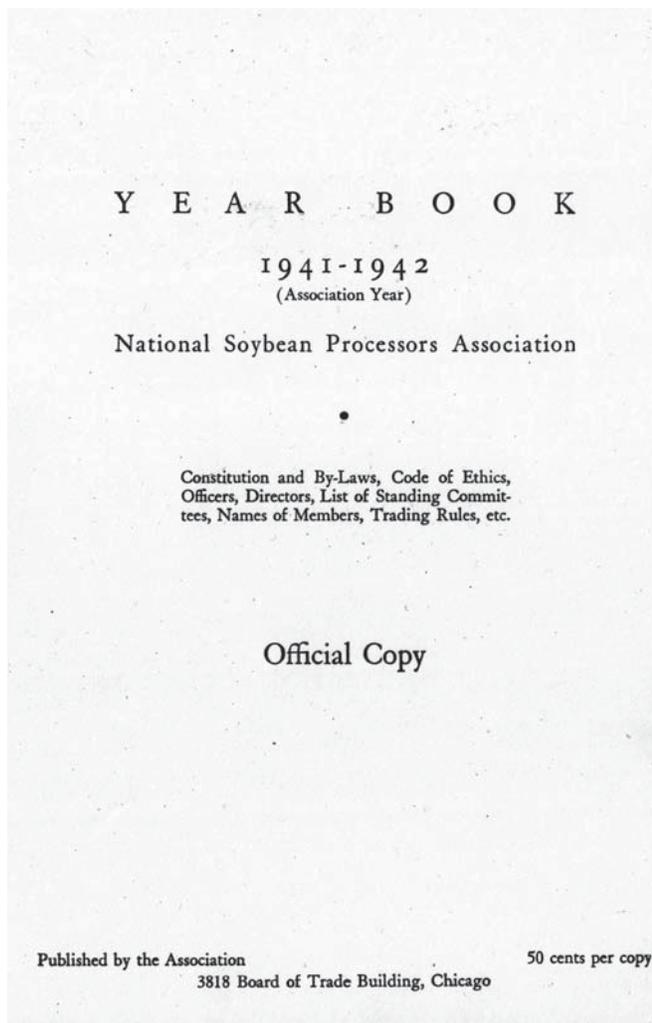
The section titled "Officers, directors, and committees" (p. 14-16) states: President: Edward J. Dies. V.P., Chairman Executive Committee: E.K. Scheiter. Secretary: E.D. Funk, Jr. Treasurer: W.G. Dickinson. Ass't. Treasurer: F.G. Duncanson. Executive Committee: E.K. Scheiter, Chairman—

J.B. DeHaven, E.D. Funk, Jr., W.H. Knapp, W.G. Dickinson, Roy Hall -> D.J. Bunnell, C.T. Prideville, W.H. Eastman, E.F. Johnson, W.E. Flumerfelt, Howard Kellogg, Jr.

Board of Directors: A.M. Andreas, W.E. Flumerfelt, C.T. Prideville, J.H. Caldwell, E.D. Funk, Jr., E.K. Scheiter, J.B. DeHaven, Roy Hall -> D.J. Bunnell, H.R. Schultz, W.G. Dickinson, Howard Kellogg, Jr., I.D. Sinaiko, Roger Drackett, W.H. Knapp, Ralph Wells, W.H. Eastman, J.H. Mitchell.

Standing committees: For each committee, the names of all members (with the chairman designated), with the company and company address of each are given—Traffic and transportation. Research. Finished materials standards. Soybean grades and contracts. Trading rules—oil. Trading rules—meal. Soy flour. Crop improvement. Soybean nutritional research council. Trade development. Edible soybean.

The following companies and organizations are members of NSPA: Allied Mills, Inc., Board of Trade Bldg., Chicago, Illinois (J.B. DeHaven). Archer-Daniels- Midland



Co., Box 839, Minneapolis, Minnesota (W.H. Eastman). Berea Milling Co. (The), Berea, Ohio (H.E. Carpenter). Buckeye Cotton Oil Co. (The), Cincinnati, Ohio (W.H. Knapp). Cairo Meal & Cake Co., Cairo, Illinois (A.T. Madra). Central Soya Co., Inc., Fort Wayne, Indiana (Roy Hall). Clinton Co., Clinton, Iowa (E.W. Meyers). Drackett Co. (The), Cincinnati, Ohio (Roger Drackett). Durkee Famous Foods, Chicago. Elevators & Mills, Inc., Windfall, Indiana (J.H. Mitchell). Funk Bros. Seed Co., Bloomington, Illinois (E.D. Funk, Jr.). Glidden Co. (The), Chicago, Illinois (W.G. Dickinson). Honeymead Products Co., Cedar Rapids, Iowa (A.M. Andreas). Illinois Soy Products Co., Springfield, Illinois (I.D. Sinaiko). Iowa Milling Co., Cedar Rapids, Iowa (Jos. Sinaiko). Laucks (I.F.), Inc., Portsmouth, Virginia (H.F. Armstrong). Old Fort Mills, Inc., Marion, Ohio (P. Turner -> Hugo Melo). Plymouth Processing Mills, Fort Dodge, Iowa (C.J. Simmons). Quincy Soybean Products Co., Quincy, Illinois (Irving Rosen). Ralston Purina Co., St. Louis, Missouri (J.H. Caldwell). Simonsen Brothers, Quimby, Iowa (W.E. Simonsen). Southern Cotton Oil Co. (The), Goldsboro, North Carolina (C.S. Ragan). Soya Processing Co., Wooster,

Ohio (H.H. Heeman). Soy Bean Processing Co., Waterloo, Iowa (W.E. Flumerfelt). Spencer Kellogg & Sons, Buffalo, New York (Howard Kellogg, Jr.). Staley (A.E.) Mfg. Co., Decatur, Illinois (E.K. Scheiter). Standard Soy Bean Mills, Centerville, Iowa (H.R. Schultz). Swift & Co., Chicago, Illinois (C.T. Prindeville). Terminal Oil Mill Co., Oklahoma City, Oklahoma (S.T. Davenport -> O.K. Winterringer). Wells (Ralph) & Co., Monmouth, Illinois (Ralph Wells).

Organizations represented on committees: American Soybean Association, Hudson, Iowa (George Strayer, D.G. Wing). Illinois College of Agriculture, Urbana, Illinois (Dr. W.L. Burlison, J.W. Lloyd). U.S. Regional Soybean Laboratory, Urbana, Illinois (Dr. H.T. Hopper, Donald H. Wheeler).

Insert: New members added since publication of the Trading Rules Book—Bell (Wilbur) Mill, Fayette, Iowa (Wilbur Bell). Central Iowa Bean Mill, Gladbrook, Iowa (Paul K. Klinefelter). Dannen Grain and Milling Co., St. Joseph, Missouri (Dwight L. Dannen). Decatur Soy Products Co., Decatur, Illinois (Joseph Giovanna). Galesburg Soy Products Co., Galesburg, Illinois (Max Albert). Hoosier Soybean Mills, Marion, Indiana (J.H. Caldwell, Jr.). Mankato Soybean Products, Inc., Mankato, Minnesota (Frank J. Berman). Marr (Pete) Soybean Mills, Fremont, Nebraska (Pete Marr). Toledo Soybean Products, Toledo, Ohio (J.H. Brown).

Note 1. This is the earliest document seen (July 2005) that mentions Honeymead in Iowa.

Note 2. This is the earliest document seen (Sept. 2005) that mentions Quincy Soybean Products Co. (Quincy, Illinois) or Irving Rosen. Address: 3818 Board of Trade Building, Chicago, Illinois.

133. *Gazette (The) (Cedar Rapids, Iowa)*. 1941. Honeymead honors salesmen. Nov. 3. p. 12, cols. 5-6.

• **Summary:** “Star salesmen of the Honeymead Products company attended the Iowa-Indiana game Saturday as guests of R.P. Andreas, president of the company. Chartering an interurban car, the group of more than 50 persons went to the game and then returned for a dinner dance at the Roosevelt hotel. D.O. Andreas, salesmanager of the concern, presented gold buttons with a diamond setting to the 12 highest salesmen in the organization. Men who received the awards were... Glen Herrick L. Stoltz...”

134. *Year Book and Trading Rules*. 1941-1988. Serial/periodical. National Soybean Processors Association. Annual. First volume titled Year Book, 1947-48. 68 pages. Published in Chicago. Later published in Washington, DC.

• **Summary:** Succeeded by Yearbook and Trading Rules. The first issue of this periodical, for 1941-42, was titled “Year Book.” Issued annually to all members of the association in about October of each year. The 1981-82 Yearbook, for example, was spiral bound and 23 cm high. Address: 1800

M. St., N.W., Washington, DC 20036.

135. Hayward, J.H. 1941. Soybean flakes for brewing: A promising adjunct. *Western Brewing World* 49(5):7-8, 26. \*  
 • **Summary:** Discusses the use of solvent-extracted soybean flakes as a brewing adjunct. These specially processed flakes are apparently prepared without subjecting the soybeans or flakes to excessive temperatures prior to extraction of the oil and by removal of the solvent from the extracted flakes at low temperatures. Address: ADM.

136. Hayward, J.W. 1942. For better dairy cows. *Soybean Digest*. March. p. 6.  
 • **Summary:** “Some twenty years ago extensive experiments were conducted with several protein supplements as a feed for dairy heifers by the Virginia Agricultural Experiment Station. Excellent results were obtained with soybean oil meal. In a publication by that station in 1921, Prof. R.E. Hunt made the following prediction: “This (soybean oil meal) is a concentrate that should become very popular with dairymen.”

“This prophecy of Professor Hunt’s has already come true regardless of the fact that it has only been during the past few years that the production of soybean oil meal has been sufficiently large so that it was generally available to dairy farmers in this country. Numerous experiments since 1921 have confirmed the early findings at the Virginia Station. These results, together with satisfaction by increased users everywhere, have done a lot in establishing the present popularity of soybean oil meal.

“Virginia Work Continued: The Virginia Agricultural Experiment Station carried on with their studies and in 1925 reported soybean oil meal superior to cottonseed meal in protein efficiency for dairy cows. In 1927 the Delaware Agricultural Experiment Station concluded following feeding experiments with dairy cows, that soybean oil meal due to its high protein content had a higher value per ton than peanut meal and for the same reason a much higher value than ground soybeans, sometimes referred to as soybean meal. Similar tests have been repeated at numerous state institutions during more recent years and always with satisfactory results.

“Nutrition experts have not overlooked the merits of soybean oil meal for dairy animals of various ages. You now find soybean oil meal in practically every leading brand of calf starter meals, growing rations for calves and heifers, dairy feeds and in fitting rations for dairy animals.

“Merits Honors: The success of soybean oil meal in winning honors at experiment stations and in meeting the whole hearted approval of dairymen is probably due to a few of its many unique qualities. Soybean oil meal is unusually palatable to dairy cattle, it supplies protein at lowest cost, is highly digestible and its proteins are of excellent quality for growth, health, milk production and reproduction.” Address:

PhD, Research Director, Archer-Daniels-Midland.

137. Dies, Edward J. 1942. Soybeans: Gold from the soil. New York, NY: The Macmillan Co. 122 p. April. Index. 21 cm. Revised ed. March 1943. 122 p. Includes index, Illust., 22 cm. [205 ref]

• **Summary:** A landmark popular book and a good description of the pioneering period of soybean production and processing in the United States.

Contents: 1. A certain man of science (William Morse and Dr. C.V. Piper). 2. Vignette from antiquity (how the soybean vine saved a caravan in China besieged by bandits). 3. Birth of an industry (U.S. soybean crushing). 4. The big drive starts (A.E. Staley, Glidden, Central Soya, Buckeye Cotton Oil Co., Drackett Co., ADM, Allied Mills, Ralston Purina, Spencer Kellogg and Sons, Swift & Co., Shellabarger Grain Products Co. Standard Soybean Mills, Iowa Milling Co.). 5. Breeding new types (Burlison, Hackleman). 6. Scientists commend product (oil and meal). 7. Lakes of oil. 8. In the field of industry (U.S. Regional Soybean Industrial Products Laboratory, and Henry Ford). 9. Listening post for soy (NRRL at Peoria). 10. Whims and price turmoil. 11. Milk for the tots of China (Dr. Harry Miller). 12. Soys in the home garden (“the vegetable soybean for table use,” “garden varieties of soybeans,” “green soybeans,” “green vegetable soys,” “vegetable type soybeans,” “edible varieties”). 12. Americanizing soy foods (mainly about soy flour and improving its taste for use during World War II). 14. Little bean, what now? Appendix: Chronology of the soybean (27 entries). Bibliography. Dies was born in 1891.

Illustrations and diagrams show: (1) Principal centers of U.S. soybean production (p. 19, map). “Almost 90 per cent of all soybeans are harvested in Illinois, Iowa, Indiana, and Ohio. If three other states are included as shown on the map—Missouri, Michigan, and Virginia—the total is 97 per cent. (2) Principal centers of U.S. soybean processing (p. 20, map). Discs of different size show the various centers. Since Illinois produces 52% of the harvested soybeans, central Illinois is the center of soybean processing [crushing] in the USA. “Total processing capacity in late 1942 exceeded 100 million bushels for the regularly established soybean processing plants.” (3) Diagram of uses of the soybean (p. 68).

Chapter 2, “Vignette from antiquity” begins: “Even when the Pyramids were being built, three hundred years before the Tower of Babel, and twelve centuries before Solomon fashioned his temple, the soybean was hoary with age. The earliest writings on the subject go back to the period of the Pyramids.

“But of the science of soybean growing you will find no recorded beginnings in the musty tones [sic, tomes] of oriental history. No book reveals the name of the inquisitive oriental who in the misty long ago began sowing the seeds, harvesting the beans, pounding them into a mash for cooking

and eating, and probably boring his friends no end with tales of their merit. There is no record depicting this unsung hero's foresight in saving the seed of the magic plant against next year's hunger. Likely as not he was a crude dreamer who fumbled his hunches and accomplished little in a lifetime of wrestling with the problem of proper cultivation.

"Oriental literature of a later date contains much about the plant but of its origin as a food product again there are only legends.

"A choice vignette from antiquity on the initial use of soybeans runs something in this fashion. Long, long ago, far back in the dim past, a caravan pulled out of an eastern China town. It consisted of a number of merchants and their servants... The caravan was bound for a distant inland settlement intent upon disposing of its valuable wares." After trading in the north, the caravan headed home, "now laden with gold, silver, and choice furs received in payment for the merchandise. Suddenly at dusk on a day when the caravan was still far from home it was surrounded by bandits who had learned of the rich prize at hand. Merchants and servants took quick refuge in a rocky defile easy of defense. Here they were besieged day on day until their scanty provisions ran low and starvation seemed inevitable. At length a servant whispered to his master and pointed to a vinelike plant bearing some sort of legume. No one could recall having seen such a plant before but all were touched with the pinch of hunger. So with grave doubts the men pounded the beans into a thick flour, mixed it with water, and made coarse cakes. Upon these cakes the caravan survived, and with renewed strength fought off the foe until help arrived. And, so the legend goes, from that day forth the miracle bean became the staff of life in China." Note 1. This story of the caravan besieged by bandits in China is a longer and embellished version of the tale first dreamed up and told by H.W. Galley in *Soybean Digest* (Dec. 1940).

"True or false, the story has lived through the ages.

"For the first written record of the soybean one must turn to 'Materia Medica,' written by Emperor Shen-nung in 2838 B.C. It describes many plants of China including that of the soybean, but even the name is clouded with antiquity. In the early Chinese history the name 'Shi-yu' [sic] and the 'Ta-tou' were applied to the soybean. These names probably antedate the first authoritative records of the plant."

Dies then discusses Engelbert Kaempfer, Linnaeus, and Moench.

"Then in 1804 a Yankee Clipper ship in full sail glided down the coast of China searching for ports for a return cargo. Not sure of the length of the return journey, the captain ordered several bags of soybeans tossed into the hold as a reserve food supply. And thus did the first soybeans enter America. Little was done about the soybeans then.

Note 2. This is the earliest document seen (June 2003) that further embellishes the myth of the "clipper ship" with phrases like "glided down the coast of China" or

"ordered several bags of soybeans tossed into the hold"—all supposedly in connection with the introduction of the soybean to the United States. This is also the earliest document seen (Aug. 2000) that compares the age of the soybean with that of the pyramids (in Egypt; the oldest and largest was built for Khufu at Giza in the 26th century B.C.), the Tower of Babel (in Babylon [today's Iraq]), or Solomon's Temple (in today's Israel), arguing that the soybean was much older than all of them.

"James Mease of Pennsylvania first mentioned in American literature shortly after this importation that the soybean was adaptable to Pennsylvania and should be cultivated" (p. 9).

In Chapter 3 (p. 14) Dies notes: "The first soybeans processed in this country were imported from Manchuria in 1911 and sold to Herman Meyer who had a small crushing plant in Seattle, later called the Pacific Oil Mills. From the raw material he produced the two chief products—soybean oil meal for livestock feed and soybean oil, selling the latter locally for industrial use. The meal was advertised and sold as 'Proteina,' a high-protein feed. The venture did not last for any considerable period; a few years later Meyer passed away." Note 3. This is the earliest document seen (May 2010) that mentions Herman Meyer.

"Soybeans grown in this country were first processed by the Elizabeth City Oil and Fertilizer Company at Elizabeth City, North Carolina. W.T. Culpepper, now postmaster at Elizabeth City, was manager of the new mill, started in 1912. The first domestic soybeans were crushed for commercial purposes there in the late fall of 1915. It was a small operation."

Note 4. This is the earliest document seen (May 2010) that mentions W.T. Culpepper.

"At that time, most of the soybeans were grown in North Carolina, and the Winterville Cotton Oil Company at Winterville, North Carolina, purchased expellers for processing purposes, and these operated on soybeans for a limited period. Still another mill, operated by Havens Oil Company at Washington, North Carolina, crushed thirty thousand bushels of beans as an experiment in 1916"

"My uncle, Jonathan Havens,' says J. Havens Moss, 'was the first to plant soybeans in this section, devoting considerable acreage to the mammoth yellow [Mammoth Yellow] type which grew and matured splendidly from the very start. Its value to the land was obvious'" (p. 14-15).

Note 5. This is the earliest document seen (Aug. 2016) which mentions that Havens Oil Co. crushed soybeans as early as 1916.

Note 6. On the first page of the copy owned by Soyfoods Center is a signed inscription, in dark blue ink, which reads: "With kind regards to Russell East, who has done much on behalf of the soybean—Edward Jerome Dies."

Note 7. Only minor changes were made on about 13 pages of the revised edition published in March 1943. None

of the statistics in the many tables were been updated, and the bibliography was not changed. Address: USA.

138. Dies, Edward J. 1942. Americanizing soy foods (Document part). In: E.J. Dies. 1942. Soybeans: Gold from the Soil. New York, NY: The Macmillan Co. 122 p. See Chap. 13, p. 90-94. April. 21 cm.

• **Summary:** The soybean, used as a food, got off to a bad start during World War I. In those patriotic days of food substitutes, some misguided scientist ground whole soybeans into a flour and promoted its use as a replacement for wheat flour in bread. But the flavor was terrible and the flour got a bad reputation.

Later it was realized that the key to Americanizing soy flour was to remove its strong “beany” flavor. This was first achieved by removing the hulls then processing the dehulled soybeans with heat and steam to carry off the odors and leave the mild, nutty flavor of the flour intact. By 1926 soy flour was sold as a health food flour. By 1935 it was shown to be a truly acceptable product with a variety of food uses. The amount of soy flour made in the USA increased from about 25 million pounds a year before 1940 to about 100 million pounds in 1942—and growing.

Soy flour is used in a big way by Germany in its army rations and recipes—to extend the protein of meat and bread. German “field kitchens started into the war with more than two hundred soy recipes.”

The British, understanding the value of soy flour, promptly requested it from Lend-Lease. “American meat packers provided sausage for the British army containing 20 percent soy flour or grits to increase the protein content in the can and prevent the loss of fats fried away.”

Makers of soy flour in the United States include: (1) Allied Mills Inc., Chicago, Illinois. (2) Archer-Daniels-Midland Company, Minneapolis, Minnesota; (3) Central Soya, Inc., Fort Wayne, Indiana. (4) The Glidden Company, Chicago, Illinois. (5) I.F. Laucks, Inc., Portsmouth, Virginia. (6) Spencer Kellogg and Sons, Inc., Decatur, Illinois. (7) A.E. Staley Manufacturing Company, Decatur, Illinois.

Note 1. This is the earliest English-language document seen (Sept. 2011) with the term “soy foods” in the title; it is a book chapter.

Note 2. Most of these 7 companies are soybean crushers, and probably therefore make defatted soy flour for food use. Address: USA.

139. Dies, Edward J. 1942. Soybeans: Gold from the soil (Statistical tables and charts). New York, NY: The Macmillan Co. 122 p. April. Index. 21 cm. Revised ed. March 1943. 122 p. Includes index, Illust., 22 cm. [205 ref]

• **Summary:** Page 5: Soybean acreage and production, 1924-1941. United States crop. Soybean harvested for beans. Each crop year extends from Oct. 1 to Sept. 30. Acreage increased from 448,000 acres in 1924 to 5,855,000 acres in 1941.

Yield per acre rose from 11.0 bushels in 1924 to a peak of 20.7 bushels in 1939. Production increased from 4,947,000 bushels in 1924 to 106,712,000 bushels in 1941. Sources: (1) Crops and Markets, USDA. (2) Illinois Crop Statistics, Circular 440-441. (3) Latest government reports, 18 Dec. 1941.

Page 10: Soybeans: production in specified countries, and estimated world total, in thousand bushels, excluding China. Estimated world production rose from 163.000 million bushels in 1922 to 266.700 million bushels in 1940. China production rose from 210.038 million bu in 1931 to 231.302 million bu in 1937. Manchuria production rose from 113.469 million bu in 1922 to a peak of 196.949 million bu in 1930, falling to 149.435 million bu in 1939. United States production rose from 4.947 bu in 1924 to 106.712 million bu in 1941. Chosen [Korea] production rose from 13.017 million bu in 1910 to 18.333 million bu in 1938. Japan production decreased from 17.855 million bu in 1909 to 13.473 million bu in 1937. Netherlands India [today’s Indonesia] rose from 2.603 million bu in 1917 to 9.873 million bu in 1938. Kwantung production rose from 375 thousand bu in 1911 (with a gap between 1919 and 1924) to 650 thousand bu in 1937. Taiwan production decreased from 280 thousand bu in 1921 to 159 thousand bu in 1937. USSR rose from 2.060 million bu in 1936 to a peak of 10.384 million bu in 1932 falling to 2.504 million bu in 1934. Rumania production rose from 26,000 bu in 1934 to 2.572 million in 1939. Bulgaria production rose from 77,000 bu in 1934 to 827,000 bu in 1939. Yugoslavia production rose from 26,000 bu in 1934 to 213,000 bu in 1939. 1909-1941. Other European (Poland, Czechoslovakia, Austria) rose from 55,000 bu in 1932 to 60,000 bu in 1935. With many footnotes.

Page 19: Principal centers of soybean production in the USA. “Almost 90 per cent of all soybeans [in the USA] are harvested in Illinois, Iowa, Indiana, and Ohio. If three other states are included as shown on the map—Missouri, Michigan and Virginia—the total is 97 per cent. The size of the baskets is proportional to the volume produced.

Page 20: Principal centers of soybean processing [crushing] in the USA. “As Illinois produces about 52 per cent of the soybeans harvested for seed, Central Illinois is the center of soybean processing as shown on this map. The discs indicate relative importance of the processing centers. Total processing capacity in late 1941 probably exceeded 90 million bushels.

Page 25: Illinois acreage and production of soybeans for beans, 1919-1941. Acreage harvested increased from 3,000 acres in 1919 to 2.285 million acres in 1941. Yield, in bushels per acre, rose from 10.0 in 1919 to 21.5 in 1941. Production increased from 30,000 bu in 1919 to 49.128 million bu in 1941.

Pages 38-47: Soybeans: Origin and varietal characteristics. This excellent table contains 18 columns.

Variety. Origin (introduction from what country, selection, or cross). Year. Days to mature. Flower color. Pubescence color. Seed characteristics: coat color, germ color, hilum color, seed per pad (range), seed per pound, percent oil, percent protein. Use (green vegetable, grain, forage). The varieties are: Agate, A.K., Aksarben, Aoda, Arisoy, Arksoy, Avoyelles, Bansei, Barchet, Biloxi, Black Eyebrow, Cayuga, Chame, Charlee, Chief, Chernie, Chestnut, Chiquita, Chusei, Clemson, Columbia, Creole, Delnoshat, Delsta, Dixie, Dunfield, Easycook, Ebony, Elton, Emperor, Etum, Fuji, Funk Delicious, George Washington, Georgian, Giant Green, Goku, Habaro, Haberlandt, Hahto, Hakote, Harbinsoy, Hayseed, Herman, Higan, Hiro, Hokkaido, Hollybrook, Hong Kong, Hoosier, Hurrelbrink, Illini, Isoy, Imperial, Ito San, Jogun, Kanro, Kanum, Kingwa, Kura, Laredo, Lexington, Macoupin, Magnolia, Mamloxi, Mammoth Brown, Mammoth Yellow, Mamredo, Manchu, Mandarin, Mandell, Mansoy, Medium Green, Midwest, Mingo, Minsoy, Missoy, Monetta, Morse, Mount Carmel, Mukden, Nanda, Nanking, Norredo, Ogemaw, Old Dominion, Oloxi, Ontario, Osaya, Oootan, Ozark, Palmetto, Patoka, Pee Dee, Peking, Pine Dell Perfection, Pinpu, Richland, Rokusun, Sato, Scioto, Seminole, Seneca, Shiro, Sioux, Sooty, Sousei, Southern Green, Southern Prolific, Soysota, Suru, Tarheel Black, Tastee, Toku, Tokyo, Virginia, Waseda, Wea, White Biloxi, Willomi, Wilson, Wilson Five, Wisconsin Black, Wood's Yellow, Yelredo, Yokoten. Note: This long table "Specially prepared by the Division of Forage Crops and Diseases, Bureau of Plant Industry, U.S.D.A.

Page 53: "United States crop production of soybean oil meal and soybean oil, 1924-1940." This valuable table is poorly titled. It has 5 columns: (1) Year. (2) Production of soybeans. Increased from 4,947 bu in 1924 to 106.712 million bu in 1941. (3) Crushings [crushed]. Increased from 307,000 bu in 1924 to 64.180 million bu in 1941. (4) Production of meal. Increased from 7,400 tons in 1924 to 1.5369 million tons in 1941. (5) Production of oil. Increased from 2.269 million pounds in 1924 to 565.169 million pounds in 1941.

Page 58: Soybean oil imported and exported, 1912-1940. Imports rose from 24.959 million lb in 1912 to a peak of 335.984 million lb in 1918, decreasing to 4.848 million lb in 1940. Domestic and foreign oil exported decreased from 34.803 million lb in 1919 (For 6 months beginning July 1) to 15.953 million lb in 1940.

Page 61: Soybean oil: factory consumption by classes of products, 1931-1940. Compounds [shortening] and vegetable cooking fats rose from 10,869 lb in 1931 to 212.317 million lb in 1940. Oleomargarine rose from 623,000 lb in 1931 to 87.106 million lb in 1940. Other edible products rose from 180,000 lb in 1932 to 39.980 million lb in 1940. Soap rose from 3.816 million lb in 1931 to 17.612 million lb in 1940. Paint and varnish rose from 6.256 million lb in 1931 to 29.828 million lb. Linoleum and oilcloth rose from 2.612

million lb in 1931 to 29.828 million lb in 1940. Printing ink rose from 33,000 lb in 1931 to 82,000 lb in 1940. Miscellaneous rose from 2.051 million lb in 1931 to 16.538 million lb in 1940. Foots and loss rose from 1.625 million lb in 1931 to 20.924 million lb in 1940. The total of these uses for soybean oil rose from 27.885 million lb in 1931 to 431.641 million lb in 1940.

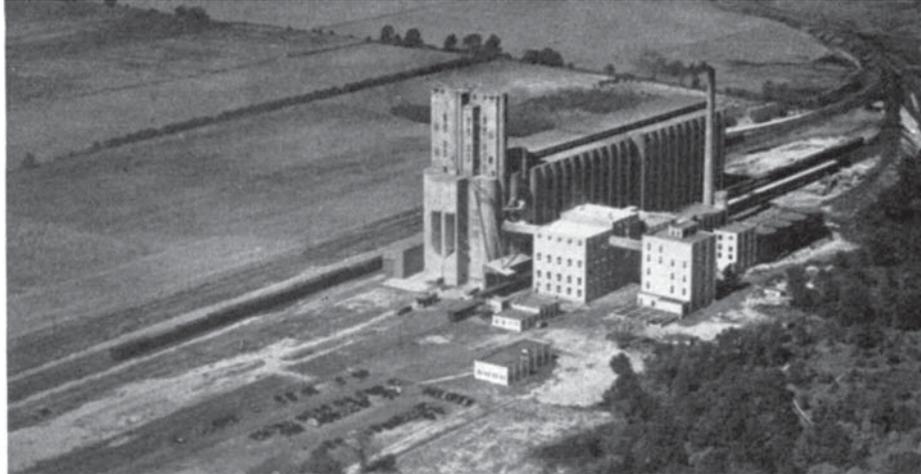
Page 68: Diagram of uses of the soybean. The major categories are: Green soybeans, used as fresh vegetables or in canned vegetable salads. Dry soybeans, used for seed or to make bean sprouts, soup, soy sauce, roasted soybeans, boiled soybeans, stock feeds, vegetable milk [soymilk] (used to make liquid milk products, dry soy milk products, bean curds, soy cheese), debittered soybeans (used to make full fat soy flour, soy coffee, soy butter, soy cereal). Soybean oil meal, soybean flour, soy lecithin, crude soybean oil (used to make fatty acids, alkyd resins, glycerine, core oils, soft soaps, hard soaps, insecticides, and many non-food products mentioned above). Refined soybean oil (used to make food products—vegetable shortening, margarine, salad dressing, edible oils, frying oils). Address: USA.

140. Archer-Daniels-Midland Company. 1942. What is good-will? (Ad). *Soybean Digest*. June. p. 11.



• **Summary:** This ½-page ad states: "Good-Will is the disposition of a satisfied customer to return to the place where he has been well treated. The Archer and Daniels families have been engaged in the Oil Milling business for a century (1840-1940), and the good-will which has been built up during these hundred years is jealously guarded in every transaction."

A large photo shows the "A.D.M. Soybean Processing Plant" located at Decatur, Illinois. Other soybean processing plants are strategically located at Chicago [Illinois], Toledo [Ohio], Milwaukee [Wisconsin], and Buffalo [New York]. The "Archer Brand" logo, "The Mark of Quality Soybean Products" is also shown.



Note: In 1942 Whitney Eastman was at ADM. Address: Minneapolis, Minnesota.

141. Hayward, J.W.; Hayward, Mrs. J.W. 1942. Soy bean serenade. *Cargill News* (Minneapolis, Minnesota). June. p. 32.

• **Summary:** This poem, well known by now, begins: “Little Soy Bean who are you / From far off China where you grew.” Cargill reprinted it from the *Wall Street Journal*. It first appeared in Aug. 1940 in the *Proceedings of the American Soybean Assoc.* (p. 6).

142. USDA Bureau of Plant Industry. Div. of Forage Crops and Diseases. 1942. Firms manufacturing or handling soybean food products. Washington, DC. 3 p. July. Mimeographed unpublished manuscript.

• **Summary:** The companies are listed alphabetically by state, and within state by city. Numbered codes after each company, keyed to a list of 35 soyfood types in the back, explain which foods are made by each company. Unfortunately, it is not clear from this list which companies are manufacturers and which are “handlers” (retailers or distributors).

California: Arlington (Loma Linda Foods), Berkeley (Golden Gate Food Products Co.), Glendale (Hygenic [Hygienic?] Food Co.), Los Angeles (El Molino Mills, Mrs. Hauser’s Soya Foods Co. {4617 Melrose Ave.}, Kevo Co., Klein Soup Co.), San Francisco (Radcliffe Soya Products {146 Fillmore St.}), Santa Cruz (Daglish Health Food Service). Delaware: Milton (Draper Canning Co.). Illinois: Bloomington (Funk Bros. Seed Co.), Chicago (Allied Mills, Armour & Co., Dewey Food Products Inc., Dietetic Supply House, Durkee Famous Foods, Fearn Soya Foods Co. {355 W. Ontario St.}, Glidden Co., Great China Foods Co., Griffith Laboratories {1415 W. 37th St.; handles soy flour and grits}, John F. Jelke Co., Soybean Products Co. {210 N. Carpenter St.}, Swift & Co.), Decatur (Spencer Kellogg and Sons, A.E. Staley Manufacturing Co.), Elgin (B.S. Pearsall Butter Co.), Urbana (Prehn’s Health Food Store).

Indiana: Columbia City (Oriental Show-You Co.), Decatur (Central Soya Co.), Indianapolis (Standard Margarine Co.). Iowa: Des Moines (Soy Products Co.). Maryland: Baltimore (J.H. Filbert, Inc., The Wm. Schluderberg–T.J. Kurdle Co.), Takoma Park (Hillcrest Health Products Co.). Massachusetts: Boston (Prince Macaroni Co.), Newton Centre (W.L. Cummings & Co.). Michigan: Battle Creek (Battle Creek Food Co.), Detroit (Shedd Products Co.). Minnesota: Minneapolis (Archer-Daniels-Midland Co.). Missouri: Kansas City (Harrow-Taylor Butter Co.), St. Louis (Blanton Co.). New Jersey: Vineland (George A. Mitchell). New York: Brooklyn (Agash Refining Corp., Cosmo Packing Co., Soy-Malt Co. {234-A Marion St.}), Elmhurst, Long Island (American Lecithin Co.), Glandale, Long Island (Beskor, Inc. Note: As of May 1997 there is no place named “Glandale”—or “Glendale”—on Long Island), New York City (Barrett & Eastwood, Borden Company, Enco Chemical Corporation, Franklin Mills Co., National Biscuit Co., Soya Corporation of America {Rockefeller Plaza}, Stein, Hall & Co.), Rochester (Vegetable Products Co.). North Carolina: Asheville (Judd’s Health Foods), Lexington (Vitro Nu Foods Corp.). Ohio: Cincinnati (The Churngold Corp., Miami Butterine Co.), Circleville (Winoor Canning Co.), Cleveland (Barton Nut & Candy Co., Pfaffman Egg & Noodle Co.), Columbus (Capital City Products Co.), Greenville (O’Brien Milling Co.), Mount Vernon (International Nutrition Laboratory [Dr. Harry Miller]), Worthington (Special Foods, Inc.). Pennsylvania: Paoli (Great Valley Mills), Philadelphia (J.S. Ivins’ Son, Inc., C.F. Simonin & Sons, Taste Soy Foods), Williamsport (Penna Soya Products Co.). Tennessee: Madison College (Madison Foods). Wisconsin: Hortonville (Fox Valley Canning Co.), Oostburg (Oostburg Canning Co.), Owen (Owen Canning Co.).

The soy food types are: “1. Albumin or protein. 2. Beans—baked. 3. Beans—canned green. 4. Beans—roasted. 5. Breakfast foods. 6. Butter—soy. 7. Candies. 8. Chips or meats. 9. Chocolate. 10. Chocolate and other beverages. 11. Coffee substitute. 12. Crackers, wafers, cookies, puddings, etc. 13. Curd or cheese. 14. Diabetic foods. 15. Flakes.

16. Flavorings. 17. Flour. 18. Flour–prepared. 19. Grits. 20. Health foods. 21. Ice cream powder. 22. Infant foods. 23. Lecithin. 24. Macaroni products. 25. Malted products. 26. Meat-like products. 27. Milk. 28. Molasses–bean. 29. Oil. 30. Puffs. 31. Sauce. 32. Shortening. 33. Soups. 34. Soybeans. 35. Spreads–sandwich. 36. Toast.”

Note: This is the earliest document seen (Dec. 2015) that mentions Griffith Laboratories. Address: Washington, DC.

143. Archer-Daniels-Midland Co. 1942. To the recipient of soybean specialty products: Sales manual No. 14. Minneapolis, Minnesota. 35 p. Aug. 31. Manufacturer’s catalog.

• **Summary:** ADM. A few facts about A-D-M. Just a few of the principal uses of A-D-M products. A-D-M soybean processing plants (an aerial photo of each is shown): Minneapolis, Minnesota; Decatur, Illinois; Buffalo, New York; Chicago, Illinois; Toledo, Ohio; and Milwaukee, Wisconsin. ADM plants and offices. The soybean: Uses, derivatives, applications (full-page chart developed by ADM). Soy flour products made by A-D-M (with analyses, uses, and benefits): Archer brand Orangeblossom Soy Flour (20-24% fat), Archer brand Nutrisoy Flour #1 (1% fat), Archer brand Nutrisoy Grits (1% fat), Archer brand Cherryblossom Soy Flour (medium fat), and Archer brand Carotenized soy flour (low fat).

A letter on the cover addressed to Miss Betty Leaming, Washington, DC, begins: “In view of the current national interest in soy flour and other soybean specialty products, we have prepared this Manual to give a wide variety of factual information on our Archer Brand Soybean Specialty Products.” The letter is signed by J.W. Hayward (Director of Nutritional Research) and R.G. Brierley (in charge of Soybean Specialty Products’ Sales).

“One of the first soybean specialty products to be produced commercially in this country was a soy flour marketed in 1926 as a ‘health flour.’ This was a bolted expeller process soybean oil meal which, because of processing limitations, was quite unpalatable.”

Brief history of ADM: “William Shreve Archer, Shreve M. Archer’s grandfather, started in the Linseed Oil manufacturing business in 1840 at Dayton, Ohio, becoming associated at that time with his uncle, Joseph Clegg, who had been previously engaged in the business for several years. In 1868 Mr. G.A. Archer, Shreve M. Archer’s father, started in the Linseed business at Dayton, Ohio, with his father and great uncle. In 1889 the firm of Archer and Company came into existence.”

“In 1867 Mr. William Leonard, father-in-law of John W. Daniels, father of Thomas L. Daniels, started in the Linseed Oil manufacturing business at Piqua, Ohio. Mr. J.W. Daniels joined the business in 1879, becoming a member of the firm Orr-Leonard and Daniels at Piqua, Ohio, at the age of twenty-two years... The Daniels Linseed Company was built

by John W. Daniels in Minneapolis in 1902.

“Mr. George A. Archer joined with Mr. Daniels in 1903 and the Archer-Daniels Linseed Company was started at Minneapolis, Minnesota. The Archer-Daniels-Midland Company, the present corporate structure, was formed in May 1923 under the laws of Delaware as a successor to the Archer-Daniels Linseed Company and the Midland Linseed Products Company, both of which had been in corporate existence for more than twenty years and had occupied leading positions in the Linseed Oil manufacturing industry.

“At the time of the present incorporation in 1923, the company purchased for cash the properties of the Midland Linseed Products Company and acquired all of the stock of the Toledo Seed and Oil Company and the Dellwood Elevator Company, Inc. The business was expanded further in 1928 through the acquisition of the plants and business of the William O. Goodrich Company in Milwaukee, Wisconsin, the Fredonia Linseed Oil Works of Fredonia, Kansas, and part of the properties of the American Linseed Company. The Werner G. Smith Company of Cleveland, Ohio, manufacturers of foundry oils and importers of oriental oils, was also acquired by purchase in 1929. The Werner G. Smith Division later acquired the Cook Swan Company, Inc. of Bayway, New Jersey, and Wyandotte Oil and Fat Company of Wyandotte, Michigan.

“The company also acquired in 1930 all of the flour milling plants and business of the Commander Larabee Corporation. The company owns a considerable stock interest in the El Dorado Oil Works, coconut oil manufacturers and refiners in San Francisco, California.”

The company has 35 manufacturing plants and owns or operated 60 million bushels of grain elevator storage. A-D-M Soy Flour is used in dog foods, sausage and meat loaf, bread and pastry, and confections of all kinds. “In the Soybean Division we manufacture a unique product known as Lecithin—a fat dispersing agent—used extensively in chocolate coatings, cooking fats, gasoline and lubricating oils, and many other food and manufactured products... A-D-M is recognized as the largest manufacturer and refiner of vegetable drying oils in the world.”

Note 1. This is the earliest document seen (July 2004) that mentions the Commander Larabee Corporation.

Note 2. This is the earliest document seen (Oct. 2001) showing that ADM is using the brand name Nutrisoy. Address: Minneapolis, Minnesota.

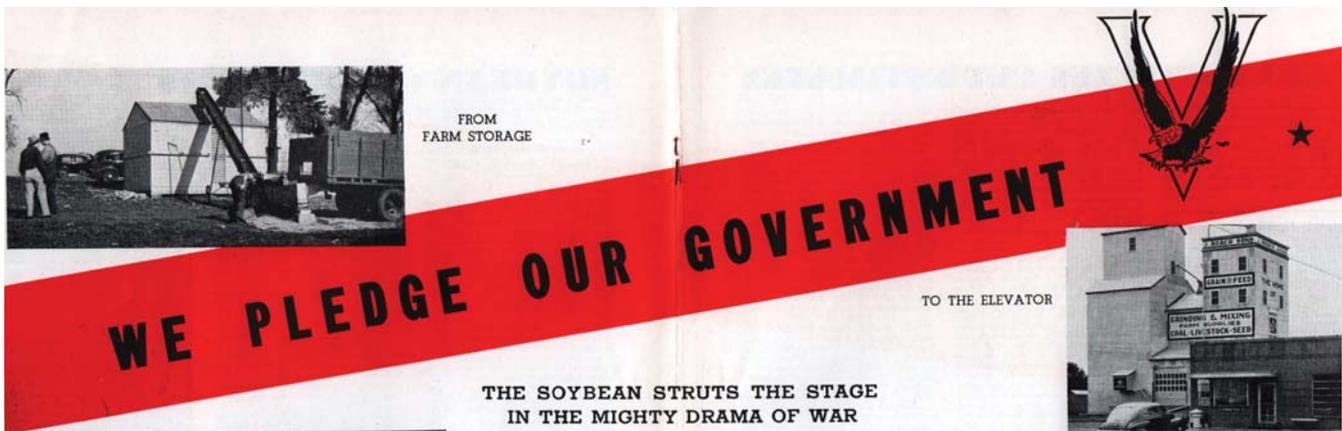
**144. Product Name:** Archer brand Soy Flours [Orangeblossom {20-24% fat}, Nutrisoy Flour #1 {1% fat}, Cherryblossom {medium fat}, or Carotenized Soy Flour {low fat}].

**Manufacturer’s Name:** Archer-Daniels-Midland Co.

**Manufacturer’s Address:** Minneapolis, Minnesota.

**Date of Introduction:** 1942 August.

**New Product–Documentation:** Manufacturer’s catalog.



1942. Sales manual No. 14. Letter from Dick Wallace of ADM. 1981. Sept. To William Shurtleff at Soyfoods Center. ADM started producing full-fat soy flour in 1935.

Archer-Daniels-Midland Co. 1947? The ABC of ADM. A photo shows a sack of the flour. The name is now spelled Orange Blossom and the maker is Commander Larabee Milling Co.

145. Hafner, Fred. 1942. The nutritional value of soy flour: a comparison with wheat flour. *Baker's Digest* 16(11):247-48, 251. Oct.

• **Summary:** The two basic kinds of soy flour discussed in this article are [solvent] "extracted soy flour" and "full fat soy flour."

"Soy flour, on the basis of its exceptional nutritional value, constitutes a desirable bread ingredient."

Tables: (1) "Comparison of protein and essential amino acid content of soy flour and wheat flour." Wheat flour is low in lysine whereas soy flour is very rich in lysine.

(2) "Nutritive value of protein in soy flour and wheat flour" (comparison). Address: Dep. of Nutritional Research, Archer Daniels Midland.

146. *Soybean Digest*. 1942. We pledge our government (Ad). Oct. p. 6-7.

• **Summary:** This 2-page spread, printed with red and black ink on white, is the first ad seen in *Soybean Digest* that is a 2-page spread. It is sponsored by 17 different soybean processors and 6 different grain dealers.

In the center of the ad, spanning both pages, we read: "The soybean struts the stage in the mighty drama of war."

"From its most abundant crop in history will soon flow a river of oil and trains of soy flour to help feed the fighting forces—and a mountain of soybean oil meal, the superior protein concentrate, to swell production of livestock and poultry and butter and eggs.

"We, the Growers—in the forward sweep to victory answered the government's call by tilling new far-flung stretches. We will harvest the giant crop to the last bushel despite shortage of help and machinery. And to our

government we pledge ourselves to provide utmost in farm storage to facilitate a smooth marketing movement, and to withhold the drier soys so those of higher moisture may be given first right of way.

"We, the Grain Handlers—have discharged our duties in the past and will do so this year, providing maximum storage with fair treatment alike to all. We pledge ourselves to fight for the full success of the program.

"We, the Carriers—straining under wartime demands, will strive to clear the way for the soybean, and to keep rolling stock rolling to the end that gluts may be avoided.

"We, the Processors—pledge ourselves to keep the drone of our great plants sounding continuously around the clock and around the calendar, save for breakdowns or acts of God—so that the rich, life-giving products may be quickly channeled to our workers, to our fighters, and to our Allies across the seas.

"Thus does the industry—a solid, patriotic, fighting unit—direct this pledge to the President and the Secretary of Agriculture—and in return confidently anticipates continued unstinted cooperation on the part of all governmental divisions."

The list of soybean processors includes: Archer-Daniels Midland Co. (Chicago, Illinois—Toledo, Ohio—Buffalo, New York—Milwaukee, Wisconsin—Minneapolis, Minnesota). Soy Bean Processing Co. (Waterloo, Iowa). I.F. Laucks, Inc. (Portsmouth, Virginia). Rose City Cotton Oil Mill (Little Rock, Arkansas). Cairo Meal and Cake Co. (Cairo, Illinois). Decatur Soy Products Co. (Decatur, Illinois). Clinton Co. (Clinton, Iowa). A.E. Staley Mfg. Co. (Decatur, Illinois—Painesville, Ohio). Illinois Soy Products Co. (Springfield, Illinois). Simonsen Soybean Mill (Quimby, Iowa). Standard Soy Bean Mills (Centerville, Iowa). Spencer Kellogg and Sons, Inc. (Buffalo, New York—Des Moines, Iowa—Decatur, Illinois—Chicago, Illinois). Funk Bros. Seed Co. (Bloomington, Illinois). Soya Processing Co. (Wooster, Ohio). Dannen Grain and Milling Co. (St. Joseph, Missouri). Swift & Company Soybean Mills. Hoosier Soybean Mills, Inc. (Marion, Indiana).

Photos show: (1) Inexpensive farm storage of

## Processors

### ARCHER-DANIELS-MIDLAND COMPANY

Chicago, Ill. — Toledo, Ohio — Buffalo, N. Y.  
Milwaukee, Wisc. — Minneapolis, Minn.

### SOY BEAN PROCESSING COMPANY

Waterloo, Iowa

### I. F. LAUCKS, Inc.

Portsmouth, Va.

### ROSE CITY COTTON OIL MILL

Little Rock, Ark.

### CAIRO MEAL and CAKE COMPANY

Cairo, Ill.

### DECATUR SOY PRODUCTS COMPANY

Decatur, Ill.

### CLINTON COMPANY

Clinton, Iowa

### A. E. STALEY MFG. COMPANY

Decatur, Ill. — Painesville, Ohio

### ILLINOIS SOY PRODUCTS CO.

Springfield, Ill.

### SIMONSEN SOYBEAN MILL

Quimby, Iowa

### STANDARD SOY BEAN MILLS

Centerville, Iowa

### SPENCER KELLOGG AND SONS, INC.

Buffalo, N. Y. — Des Moines, Iowa  
Decatur, Ill. — Chicago, Ill.

### FUNK BROS. SEED CO.

Bloomington, Ill.

### SOYA PROCESSING CO.

Wooster, Ohio

### DANNEN GRAIN and MILLING COMPANY

St. Joseph, Mo.

### SWIFT & COMPANY SOYBEAN MILLS

### HOOSIER SOYBEAN MILLS, Inc.

Marion, Ind.

## Grain Dealers

### BALDWIN ELEVATOR COMPANY

Decatur, Ill.

### J. ROACH SONS, Inc.

Plainfield, Iowa

### STOCKDALE & MAACK CO.

Estherville, Iowa

### OWENSBORO GRAIN COMPANY

Owensboro, Ky.

### FEDERAL-NORTH IOWA GRAIN CO.

Cedar Rapids, Iowa

### LOWELL HOIT & CO.

Chicago, Ill.

Painesville, Ohio  
Illinois Soy Products Co.,  
Springfield, Illinois  
Simonsen Soybean Mill, Quimby,  
Iowa  
Standard Soy Bean Mills,  
Centerville, Iowa  
Spencer Kellogg and Sons, Inc.,  
Buffalo, New York—Des Moines,  
Iowa—Decatur, Illinois—Chicago,  
Illinois  
Funk Bros. Seed Co.,  
Bloomington, Illinois  
Soya Processing Co., Wooster,  
Ohio  
Dannen Grain and Milling  
Company, St. Joseph, Missouri  
Swift & Company Soybean Mills,  
Hoosier Soybean Mills, Inc.,  
Marion, Indiana  
The Glidden Company, Chicago,  
Illinois  
Iowa Milling Company, Cedar  
Rapids, Iowa  
Quincy Soybean Products  
Company, Quincy, Illinois  
Galesburg Soy Products  
Company, Galesburg, Illinois  
Elevators & Mills, Inc., Windfall,  
Indiana  
Allied Mills, Inc., Chicago,  
Illinois—Omaha, Nebraska—Peoria,  
Illinois Taylorville, Illinois—  
Portsmouth, Virginia—Fort Wayne,  
Indiana

soybeans. (2) A grain and feed elevator—J. Roach Sons. (3) A processing mill—close-up of equipment. (4) A farm feed lot with cattle eating “high quality soybean oil meal” out of troughs.

147. *Soybean Digest*. 1942. Cooperation: They know its meaning. Our cooperation means much to our workers, our armies, and our allies (Ad). Nov. Back cover.

• **Summary:** This full-page ad is sponsored and paid for by the following soy-related companies:

Archer-Daniels-Midland Company, Chicago, Illinois—Toledo, Ohio—Buffalo, New York—Milwaukee, Wisconsin—Minneapolis, Minnesota

Soy Bean Processing Company, Waterloo, Iowa

I.F. Laucks, Inc. Portsmouth, Virginia

Rose City Cotton Oil Mill, Little Rock, Arkansas

Cairo Meal and Cake Company, Cairo, Illinois

Decatur Soy Products Company, Decatur, Illinois

Clinton Company, Clinton, Iowa

A.E. Staley Mfg. Company, Decatur, Illinois—

Baldwin Elevator Company, Decatur, Illinois

J. Roach Sons, Inc., Plainfield, Iowa

Stockdale & Maack Co., Estherville, Iowa

Owensboro Grain Company, Owensboro, Kentucky.

Federal North Iowa Grain Co., Cedar Rapids, Iowa

Lowell Hoit & Co., Chicago, Illinois

The Nickel Plate Railroad, Cleveland, Ohio.

The text of the ad states: “American flyers zooming out of the dark night to drop their deadly eggs on Hitler’s factories, our gallant marines storming Jap bastions in Pacific islands, or the boys on our merchant men stalking hidden death in the seven seas, their ship holds full of precious life-giving cargoes bound for our allies, know the full meaning of cooperation. Cooperation spells the difference between life and death, freedom and slavery.

“Cooperation is also vital to us in the soybean industry. Cooperation has already carried us far on the long road to victory since the day our government asked us to grow a cool 9 million acres of soy beans in 1942. Cooperation enabled us

to answer with 10 million acres.

“Cooperation will take us through the most perplexing problems we have ever faced—the problem of green beans—of storage—of transportation over roads groaning under the burden of war goods—of processing by mills asked to double and redouble their efforts 24 hours each day, 365 days each year—all to the end that every precious golden drop of oil may be saved for the war effort, that every pound of oil meal may be available as soon as possible in the farm feed lot in this furious battle for freedom.”

A photo at the top shows two men in a jeep, one holding a rifle. In the lower right corner is an illustration of an American eagle, with raised wings.

148. Hayward, J.W. 1942. Soybean products as a feed for livestock and poultry. *Feedstuffs*. Dec. 5 and 12. \*

149. Hafner, Fred H. 1942. General considerations of soy flour as a bread ingredient. *Baker's Digest* 16(12):282-84. Dec. [3 ref]

• **Summary:** Compares soy flour and wheat flour, analyzes factors and properties of importance to the baker, gives general recommendations for using soy flour to supplement wheat flour in breadmaking, and discusses the benefits of this use. Specifically discusses: Full-fat soy flour vs. low-fat soy flour (expeller or extracted). Protein strength. Fat, a shortening saver (and lecithin). Water absorption. Diastatic enzymes. Yeast food. Color contribution. General recommendations for formulating soy-wheat bread. Benefits derived from use of soy flour. Commercial aspects of soy-wheat bread. Address: Archer-Daniels-Midland Company, Dep. of Nutritional Research, Minneapolis, Minnesota.

150. Eichberg, Joseph. 1943. Report of annual meeting, American Lecithin Company, Inc., January 27, 1943. [Elmhurst, Long Island, New York]. 4 p. 28 cm.

• **Summary:** “Total sales in 1942 amounted to 2,345,373 pounds (R&R [Ross & Rowe] 1,371,370 pounds—Alco [American Lecithin Co.] 974,003 pounds) compared with 1,873,742 pounds in 1941 (dollar value: \$874,009.09 and \$706,627.11); net profits were \$70,828.61 and \$73,928.77 respectively, and Federal and Canadian taxes are estimated at approx. \$78,000.00 against \$32,900.00 in 1941.

“Patent and Legal expenses were cut from \$50,000.00 in 1941 to \$15,000.00 in 1942, due to termination of the F.T.C. matter and, during the year, of the chocolate patent litigation. For Experimental and Research \$18,855.91 was spent compared to \$13,921.54 in 1941—this amounted to a little over 2% of net sales.

“Sales to the chocolate industry were 449,747 pounds compared with 471,907 pounds in 1941 in spite of the shortage of cocoa beans.

“The large increase in sales to the baking industry since September has boosted the demand above our capacity to

supply lecithin, and has necessitated some ‘rationing’ by the Company. During the whole of 1941 we sold 93,977 pounds to bakers while last month (December, 1941) alone we shipped 134,541 pounds to the baking industry. A question of policy is involved—namely, whether the Company should limit its sales to the baking industry and attempt to move more lecithin into fields which may promise greater permanency after the war. From LEC #1 operations the Company netted \$24,518.69 compared with \$21,235.52 in 1941 (806,402 pounds and 822,000 in 1941).

“In the petroleum industry several new customers began using lecithin in lubricants, notably Socony Vacuum, Pure Oil, Sinclair and Ohio Oil Company. Of great potential interest is the exploratory work now being conducted on a large scale by Ethyl Corp. License agreements to make the lecithin lube oil patents available to all refiners were entered into with Texas Company and DuPont, Alco to receive a share of the royalties collected.

Export sales, other than to Canada, amounted to 343,228 Pounds. Because of the large increase in domestic orders export sales have been cut 50% or more; it is felt that these contacts should be maintained, if on a reduced scale, because some of this business may be of a permanent character, at least until lecithin producing units in Europe can be rebuilt and because after the war we may wish to be in a position to respond to competition from imported lecithin.

“Ross & Rowe have been alert and energetic in promoting sales and their readiness to cooperate has been highly appreciated.

“Inventory December 31, 1941 was 697,140 pounds and at the end of December, 1942 was 176,872,—less than a three weeks’ supply at the present rate of sales. At December 31, 1942 we were about one month behind in shipping orders. Strenuous efforts are being made to increase production, with the cooperation of Glidden and ADM. Lecithin emulsion is being obtained from P&G. [Procter & Gamble]. It is felt that a license agreement with P&G. should be considered, also an offer of license to Central Soya Company.

“Central Soya seems to be the source of competitive lecithin, the quality of which is reasonably good and if Central Soya is making 500,000 pounds per annum we could use a portion of this to advantage. Central Soya as well as Penick & Ford who manufacture for Refining, Inc. are thought to infringe our process patents. Refining on the other hand claim that their patents are basic and cover certain operations of Glidden and ADM. We believe that Glidden and ADM should share with us equally the expenses involved in meeting the challenge presented by Refining’s attitude since their oil processing as well as lecithin production is involved.

“To begin with, an independent opinion should be obtained and I suggest we consult Mr. Alan Mann who has been highly recommended by ADM. Incidentally, this has a bearing on our ability to get soybean lecithin emulsion from

Clinton Co. since Clinton is producing more corn lecithin emulsion and does not feel it worth their while to collect and ship only the soybean lecithin emulsion.

“Royalties at present are being earned chiefly from license agreements in the baking and petroleum industries. Patent matters are being handled through the Glidden Patent Department. With our present method of selling, no royalty is included in the price of the lecithin.

“Our research in the petroleum field showed conclusively the value of lecithin in motor oils for passenger car service and gave rise to a modified product which promises to be more effective than ordinary commercial lecithin. A new method for producing soft consistency lecithin was carried to the stage of plant runs. LEXO Cookies were introduced to the drug trade during 1942; widespread interest was manifest in the therapeutic properties of soybean lecithin. We are sponsoring several projects at leading hospitals.

“Prospects for 1943 indicate that we can sell all that Glidden and ADM can produce plus whatever can be procured from any other source. Royalty income should increase. However, we are faced with possible need to bring suits in order to protect our processing patents and baking patent. A vigorous research program is being continued. We are having to hold back rather than push sales and our major problem at the moment is that of getting more lecithin.”

151. McCormick, J.C. 1943. The 1943 government soybean program. *Grain & Feed Journals Consolidated* 90(3):103. Feb. 10.

• **Summary:** An address before the Illinois Farmers Grain Dealers Association, Peoria, Feb. 2-5, 1943, on soybean meal distribution and the soybean marketing program. Detailed price schedules expected to apply to the 1945 crop are given.

The 1942 crop of 209 million bushels, was produced by a large number of U.S. states. And “95% of the soybeans were produced in ten states, 82% in four states and a little more than a third in Illinois. The four states of Illinois, Iowa, Indiana and Ohio ranking as named produced approximately 170 million bushels of soybeans in 1942.

“There is an estimated soybean crushing capacity in the middle west of approximately 100 million bushels. It was apparent early in the fall that after deducting the amount of soybeans to be used for seed and normal farm disappearance for feed there would be several million bushels in the midwest that could not be processed in the states where they were produced. A survey of the total oil seed crushing capacity in the U.S. showed there was more crushing capacity than would be needed to crush the oil seeds produced. In an attempt to get all of the soybeans produced as beans, processed, Commodity Credit Corporation signed contracts with oil seed crushers on the west coast, the east coast and in the southern states. These were in addition to the regular soybean mills.

“Due to the war, imports of copra on the west coast have been almost completely stopped. This meant there were several idle copra mills that could be used for crushing soybeans. The demand for high protein feeds by poultry men, dairymen and cattle men was very strong. If the farmers on the west coast were to meet their production goals of meat, dairy and poultry products they must have protein feeds of some kind. To meet this situation, C.C.C. signed contracts with Pacific Coast processors to crush approximately 5,000,000 bushels of soybeans. They were to purchase their own soybeans in the middle west.

“Contracts were signed with Spencer Kellogg Sons and Archer Daniels Midland Company at Edgewater, New Jersey, to purchase soybeans in the middle west and make the meal available in the Northeast. Any midwest processor having soybean meal contracts in the Northeast was asked to transfer his contracts to these Edgewater plants and make this additional meal available in the midwest.

“Contracts were signed with Swift & Company at Chicago and Buckeye Cotton Oil Company at Cincinnati, to purchase soybeans in the midwest and crush them in the southern cotton seed crushers.

“Cotton seed crushers normally finish crushing cotton seed between Dec. 1 and April 1 depending on the total supply of seed available for crushing and the amount purchased by the mill owner. C.C.C. has contracted with southern cotton seed mills to crush approximately 12,000,000 bushels of soybeans.”

Note: The Commodity Credit Corporation (CCC) is a wholly owned United States government corporation created in 1933 to “stabilize, support, and protect farm income and prices.” The CCC is authorized to buy, sell, lend, make payments and engage in other activities for the purpose of increasing production, stabilizing prices, assuring adequate supplies, and facilitating the efficient marketing of agricultural commodities. Address: C.C.C. [Commodity Credit Corp.], Washington, D.C.

152. Burke, A.D.; Flanagan, Douglas. 1943. Use of soybean flour in an ice cream mix. *Ice Cream Review* 26(8):14-15, 54, 56-57. March.

• **Summary:** Written during World War II, this article begins by noting that when the U.S. government curtailed the use of dry skim milk and limited the serum solids content of mixes, ice cream makers were faced with the problem of finding a replacement. Soybean flour can be used satisfactorily to replace up to 20% of the serum solids of a mix. “The replacement of a portion of dry milk solids with soybean flour imparts smoothness to the finished product, thus improving the body and texture.” A number of formulas for ice cream mixes containing soybean flour are given.

“In conclusion, the writers wish to express their appreciation to the Archer-Daniels-Midland Co. of Minneapolis, Minnesota, whose fine cooperation in

supplying samples of soybean flour, made these studies possible.”

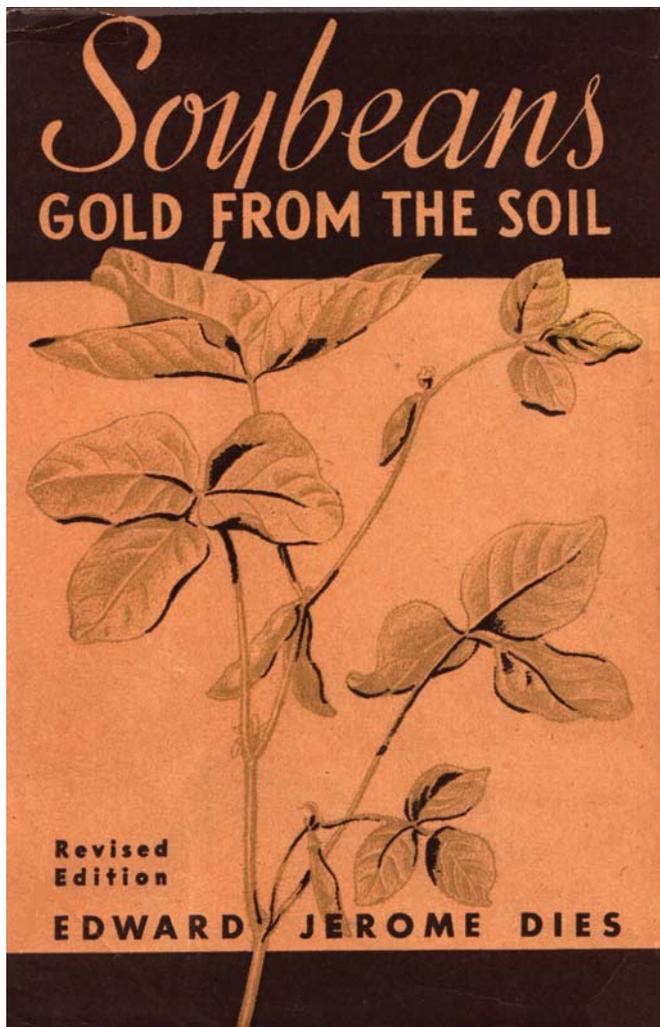
Also in *Southern Dairy Products Journal*, 55(5):4-5, 10-12. March 1945; and in *Ice Cream Trade Journal* 9(3): 12-15, 45-48. March 1945, with the title, “Wartime mixes.” Address: 1. Head of the Dairy Dep.; 2. Plant Superintendent. Both: Alabama Polytechnic Inst., Auburn, Alabama.

153. Dies, Edward J. 1943. Soybeans: Gold from the soil. Rev. ed. New York, NY: The Macmillan Co. 122 p. March. Index. 21 cm. First published in April 1942. [205 ref]

• **Summary:** This revised edition is very similar to the first edition published in April 1942. Minor changes have been made on the following pages: 20, 28, 70-73, 84-85, 90-94, 121-22. None of the statistics in the many tables have been updated, and the bibliography is unchanged. Address: USA.

154. *Soybean Digest*. 1943. Grits and flakes from the industry: Archer-Daniels-Midland closes two soybean processing mills at Edgewater, New Jersey. May. p. 12.

• **Summary:** Two of the Edgewater, New Jersey, “soybean



processing mills of the Archer-Daniels-Midland Linseed Oil Co. have been shut down because of inability to get shipments of beans.” This company converted the plants to processing soybeans “last December by special request of the government, and the company reports it has appealed repeatedly to all federal agencies for shipments.”

155. *Chicago Daily Tribune*. 1943. Investors’ guide: Soy beans. June 25. p. 26.

• **Summary:** America’s large soy bean processors include the Archer-Daniels-Midland company, Spencer Kellogg & Sons, Inc., A.E. Staley Manufacturing company, and the Glidden company.

“The futures market in soy beans on the Chicago Board of Trade was discontinued Feb. 19, 1943, because of new government regulations restricting the delivery of the beans on futures contracts.”

156. Wilgus, H.S.; Zander, D.V. 1943. The value of soybean oil meal from damaged beans. *Colorado Agricultural Bulletin, Miscellaneous Series No. 131* No. 218. 2 p. July.

• **Summary:** “A considerable proportion of the 1942 soybean crop was damaged by frost while immature. Under these circumstances it was desirable to ascertain the growth-promoting value of meal made from frost-damaged beans. Such a meal and another one prepared from normal beans were obtained. Both meals were prepared by the expeller process under as similar conditions as possible.” The beans were graded, as shown in a table.

“It is concluded that the growth-promoting value of the meal made from frost-damaged, immature soybeans was satisfactory for use in a practical starting mash containing 2.5 percent meat and bone scrap.”

Tables: (1) Rations fed to chicks and results. The meal is termed “Soybean oil meal.”

Undamaged meal was supplied through the courtesy of Dr. J.W. Hayward, Archer Daniels Midland Co. Address: Colorado Agric. Exp. Station, Poultry Section, Ft. Collins, Colorado.

157. *Business Week*. 1943. Soybean tangle: Everybody wants a better marketing setup than last year, and problems are tough. Use of oil in nonfoods is banned. Aug. 7. p. 88, 90, 92.

• **Summary:** During World War I, when a large quantity of Manchurian soybean oil was imported to relieve U.S. shortages of oils and fats, processors believed that it could never be refined to be fit for use in food products, so it used almost all of it in industrial products.

But since then new techniques for refining soy oil have improved its quality so much that two months ago, the War Production Board, facing an acute shortage of edible oils, ordered that no soybean oil can go into any nonfood product. Actually only a small percentage of soybean oil produced in

the USA had been going to other than table uses for many years. The new order caused serious concern among makers of paints and varnishes, linoleum, foundry core binders, and many other inedible products in which soy oil has been a major constituent.

“An impressive index of how far up in the world this workaday Oriental legume has come was a meeting held last week in Chicago [Illinois]. Summoned by the Commodity Credit Corp. and the Agricultural Adjustment Agency, 250 men who are leaders in today’s half-billion-dollar soybean industry sweated through an all-day session in a steaming room. They talked solely about the 1943 bean crop.

“Attendance included the head soybean men of such potent food firms as A.E. Staley Mfg. Co., Archer-Daniels Midland Co., Allied Mills, Central Soya Co., and Swift & Co.”

158. Kimball, Warren Y. 1943. Soybean plant fire record. *National Fire Protection Association Quarterly* 37(2):157-70. Oct.

• **Summary:** A record of 14 recent fires and explosions in soybean processing plants. Each is followed by a detailed description of the cause or causes, what happened, etc.

(1) 1935 Oct. 7, Chicago, Illinois. Soybean processing plant. Glidden Soya Products, Inc. 11 killed, 45 injured. Contains a detailed description of all aspects of the explosion. Two photos (one from ground level, one aerial from the southwest corner) show the wreckage.

(2) 1935 Oct. 22, Momence, Illinois. Rural soybean oil plant. Owned by Varnum Parish, Jr. 2 killed, 2 injured. One ground-level photo shows the wreckage.

(3) 1937 Jan. 22, Des Moines, Iowa, Soybean meal storage tank fire and explosion. Plant owned by Spencer-Kellogg and Sons. It took more than two months to put out the fire. No deaths or injuries.

(4) 1939 May 15, Toledo, Ohio. Soybean oil extraction plant, occupied by Archer-Daniels-Midland Co. No deaths or injuries. \$20,000 loss.

(5) 1939 Aug. 24, Buffalo, New York. Soybean cake cooler. Fire in plant owned by Spencer-Kellogg and Sons. \$500 loss.

(6) 1939 Oct. 19, Fort Dodge, Iowa. Soybean oil mill, Plymouth Processing Mills. \$140,000 loss.

(7) 1940 Jan. 2, Marion, Ohio. Soybean cake storage. Old Fort Mills, Inc. soybean crushing plant. \$46,900 loss.

(8) 1940 Feb. 14, near Springfield, Illinois. Soybean oil mill, not operating at the time. Owned by Springfield Stock Yards Company. \$120,000 loss.

(9) 1942 Oct. 22, Oakville, Indiana, Farmers’ Elevator Co. A country grain elevator and feed mill. \$46,000 loss.

(10) 1942 Nov. 28, Danville, Illinois. Rural feed and soybean processing plant. Operated by Hendricks County Farm Bureau. \$30,460 loss.

(11) 1943 March 31, Cairo, Illinois. Vegetable oil mill.

The Cairo Meal and Cake Company’s plant included a soybean oil mill. \$1,653,000 loss.

(12) 1943 July 30, Chicago, Illinois. Soybean oil plant and elevator. Caused by a “dust explosion, believed to be the first on record in a soybean oil plant using the expeller process,...” Plant operated by Norris Grain Co. 3 killed. \$400,000 to \$600,000 loss. Two photos (one full-page and one half-page) show the wreckage.

(13) 1943 Aug. 2-7, Buffalo, New York. Soybean oil plant. Owned by Spencer-Kellogg and Sons. No deaths. Loss not given.

(14) 1943 Aug. 6, Buffalo, New York. Soybean oil plant. In Mill A, owned by Spencer-Kellogg and Sons. No deaths. Loss not given.

Note: Of all these fires and explosions, the worst one was the first, at the Glidden plant in Chicago. Address: N.F.P.A. Engineer.

159. USDA Northern Regional Research Laboratory. 1943. Soybean processing mills in the United States. *USDA Bureau of Agricultural and Industrial Chemistry*. AIC-26. 10 p. Nov. Revised edition, 1948. CA-5, 14 p.

• **Summary:** “The following list of soybean processing mills is divided into three parts: (1) mills in which soybeans regularly constitute the bulk of the throughput, (2) mills which are currently under construction or whose construction is being seriously considered, and (3) mills which are engaged in soybean processing temporarily or part time, or which have otherwise participated in the soybean program by signing a soybean processor contract. It must be realized that changes are occurring very rapidly at the present time, throughout the entire soybean processing industry.

“Solvent extraction plants in group No. 1 are designated with an asterisk (\*). Many of the solvent type mills also contain expellers and screw presses. After the name of each mill in group No. 1, the letter S, M, or L is used to designate whether it is a small, medium, or large installation. These ratings are only approximate and divide mills into three capacity groups: S (small), capacities less than 50 tons of soybeans per day; M (medium), capacities between 50 and 200 tons per day; and L (large), capacities over 200 tons per day.”

(1) Mills specializing in soybeans:

Arkansas: West Memphis–Arkansas Mills, Inc. (S). Wilson–Wilson Seed and Feed Company (S).

California: Oakland–Albers Brothers Milling Company (S).

Illinois: Bloomington–Funk Brothers Seed Company (M). Cairo–Swift and Company (M). Champaign–Swift and Company (L). Chicago–Archer-Daniels-Midland Company (M)\*; The Glidden Company (L)\*; Norris Grain Company (S); Spencer Kellogg and Sons (L). Decatur–Archer-Daniels-Midland Company (L)\*; Decatur Soy Products Company (M); Spencer Kellogg and Sons (L)\*; A.E.

Staley Manufacturing Company (L). Galesburg–Galesburg Soya Products Company (M). Gibson City–Central Soya Company, Inc. (L). Monmouth–Ralph Wells and Company (S). Peoria–Allied Mills, Inc. (L). Quincy–Quincy Soybean Products Company (M). Springfield–Illinois Soy Products Company (M). Taylorville–Allied Mills, Inc. (M).

Indiana: Decatur–Central Soya Company, Inc. (L)\*. Indianapolis–Evans Milling Company (M). Lafayette–Ralston Purina Company (M). Marion–Hoosier Soybean Mills, Inc. (M). Windfall–Elevators and Mills, Inc. (S).

Iowa: Cedar Rapids–Honey mead Products Company (M)\*; Iowa Milling Company (M). Centerville–Standard Soybean Mills (M). Clinton–Clinton Company (M)\*. Des Moines–Spencer Kellogg and Sons (M); Swift and Company (M). Fayette–Wilbur Bell, Inc. (S). Fort Dodge–Plymouth Processing Mills (M [co-op]). Gladbrook–Central Iowa Soybean Mill (S). Iowa Falls–Ralston Purina Company (M). Quimby–Simonsen Soybean Mill (M). Sioux City–Sioux Soya Company (S). Waterloo–Soy Bean Processing Company (M)

Kansas: Emporia–Kansas Soy Bean Mills, Inc. (M).

Kentucky: Henderson–Ohio Valley Soy Bean Cooperative Association (M). Louisville–Buckeye Cotton Oil Company (L)\*. Owensboro–Owensboro Grain Company (S).

Michigan: Dearborn–Ford Motor Company (M)\*. Milan–Ford Motor Company (S)\*. Saline–Ford Motor Company (S)\*.

Minnesota: Mankato–Mankato Soya Products Company (S). Minneapolis–Archer-Daniels-Midland Company (S).

Missouri: Galesburg–Spring River Mill (S). St. Joseph–Dannen Mills (M). St. Louis–Ralston Purina Company (M).

Nebraska: Fremont–Pete Marr Soybean Processing Company (S). Omaha–Allied Mills, Inc. (M).

New York: Buffalo–Spencer Kellogg and Sons (M). Oswego–Oswego Soybean Products Corporation (M).

Ohio: Berea–Berea Milling Company (M). Cincinnati–Drackett Company (M)\*. Circleville–John W. Eshelman and Sons (M); Ralston Purina Company (M). Fostoria–Swift and Company (M). Marion–Old Fort Mills, Inc. (M). New Washington–Ohio Soya Company (S). Painesville–A.E. Staley Manufacturing Company (L). Toledo–Archer-Daniels-Midland Company (L); Toledo Soybean Products Company (M). Wooster: Soya Processing Company (M).

Pennsylvania: Jersey Shore–Pennsylvania Soy Bean Cooperative Association (S).

Tennessee: Memphis–Buckeye Cotton Oil Company (M).

Virginia: Norfolk–Davis Milling Company (S). Portsmouth–Allied Mills, Inc. (M); I.F. Laucks, Inc. (S).

Wisconsin: Milwaukee–Archer-Daniels-Midland Company (M).

Note 1. This is the earliest document seen (Dec. 2005) that mentions Dannen Mills (St. Joseph, Missouri) in

connection with soybeans.

Note 2. This is the earliest English-language document seen (Sept. 2003) that contains the term “screw presses” (or “screw press”) in connection with mechanical pressing of soybeans to give oil and meal (one of two documents).

160. Payne, Donald S. 1943. The story of soya products. In: U.S. Food Distribution Administration, War Food Administration, ed. 1943. Soybeans and Soya Products. Program for Meeting of Interdepartmental Nutrition Coordinating Committee. 25 p. See p. 8-19. Dec. 7. [5 ref]  
 • **Summary:** Contents: Introduction. Production and distribution. Soya flour and grits on the retail market. Soya in mixed foods. Information activity. Reference list of some of the materials available on soya products: Recipes and recipe leaflets, speeches, other (pamphlets, book chapter).

Soya flour and grits on the retail market include the following: A.E. Staley Manufacturing Co. of Decatur, Illinois, opened test markets early in June 1943 with 1- and 3 pound packages of Stoy, a low-fat expeller type of soya flour. Results were good. Complete national distribution of this product is expected by 1 March 1944.

At least two other large processor-distributors have also started on campaigns for nation-wide distribution. The Archer-Daniels-Midland Company has initiated the distribution of Viva Soy, a low-fat extraction-process type flour. The Glidden Company, Cleveland, Ohio, through Durkee Famous Foods, has recently introduced into test markets Durkee’s Soya Bits (a low-fat expeller-type grit) and Durkee’s Soyarich (a full-fat soya flour).

Other processor-distributors are The Central Soya Company, Decatur, Indiana, distributing Me-T-Soy, an extraction-type grit, and The Soya Corporation of America, introducing both a full-fat type flour and grit on the East Coast.

“Closely following the lead of these processor-distributors, private-label brand grocery houses started to package these products for retail distribution at popular prices. These have been very widely distributed. These are now packaged by G.L.F. Farm Products, Inc., Ithaca, New York, a 2-pound package of full-fat type soya flour and a 2-pound package of a toasted soya flake of the low-fat expeller-type.

The Vee-Bee Company of Chicago, Illinois, with its Vee-Bee brand soya flour and soya grits, and the P.D. Ridenour Company, Chicago, Illinois, with its Little Major brand soy flour of the low-fat extraction type, have both attained distribution of 1-pound packages through jobbers in 36 of the 48 states. “The H.D. Lee Company is distributing the Lee Brand soy flour and soya grits in 1-pound packages throughout Kansas, Oklahoma, Colorado, southern Nebraska, Arkansas, and Missouri.

“The Battle Creek Food Company, Battle Creek, Michigan, and The Walker Company, Chicago, Illinois,

continue to market retail packages of full-fat soya flour in specialty stores throughout the Nation...

"In addition to those retail distributors, the following manufacturers sell [soy] flour and grits in wholesale quantities to food manufacturers, restaurants, and institutions." Allied Mills, Inc. (Chicago, Illinois), Archer-Daniels-Midland Company (Minneapolis, Minnesota), Central Soya Company, Inc. (Fort Wayne, Indiana), Commander-Larabee Milling Company (Minneapolis, Minnesota), The Glidden Company (Chicago, Illinois), Procter & Gamble Company (Ivorydale, Ohio), Shellabarger Grain Company (Decatur, Illinois), Soya Corporation of America (Hagerstown, Maryland), Soya Products Company (New York, New York), Spencer Kellogg and Sons, Inc. (Decatur, Illinois), A.E. Staley Manufacturing Co. (Decatur, Illinois), Swift & Company (Champaign, Illinois).

Under "Soya in Mixed Foods" many companies that make foods such as pancake mixes, breakfast cereals, pasta, breads, crackers and cookies, candy bars, muffin mixes, dry soup mixes, etc. are listed, along with the brand name of the product and the area of distribution. "To mention a few others. The Atlantic Macaroni Company, New York City, the Mission Macaroni Company and the Golden Grain macaroni Company, both of Seattle, Washington, and Traficanti Brothers, Chicago, Illinois, also manufacture for local distribution a variety of products containing soya flour in amounts ranging from 10 to 15 percent." Soya products are used in only about 1% of frankfurters or sausages. "Roasted salted soybeans are about as common now as salted peanuts, but not many people realize that soya flour and grits are at present universally used in chocolate bars and any other candy. For further information on these uses I might refer you to the Curtis Candy Co., Chicago, Ill., or the Clark Candy Co., Pittsburgh, Pennsylvania..."

"A large number of dry soup mix manufacturers are experimenting with soya flour and preparing products for domestic distribution. Soya flour and grits are now and will continue to be used extensively in foods prepared for lend-lease and relief feeding. Pea-soya soup, spinach-soya soup, cheese-soya sauce, oat-soya cereal, whole wheat-soya cereal, wheat-soya-egg macaroni and vegetable-cereal-soya stew mixes are being purchased in appreciable quantities... Pork-soya sausage links have been purchased in tremendous quantities under lend-lease..."

"Nine coast-to-coast radio shows have featured the news of soya food products since June 1943. Over 15 prepared radio scripts and stories featuring soya have been distributed since May 1943." Address: Chief, Soya Products Section, Grain Products Branch, Food Distribution Administration, War Food Administration.

**161. Product Name:** Viva Soy (Low-Fat Solvent-Extracted Soy Flour).

**Manufacturer's Name:** Archer-Daniels-Midland Co.

**Manufacturer's Address:** Minneapolis, Minnesota.

**Date of Introduction:** 1943 December.

**New Product-Documentation:** D.S. Payne. 1943. The story of soya products. Dec. p. 12-13. This product was first introduced into Minneapolis, St. Paul, and St. Cloud, Minnesota. The company hopes to distribute the product nationwide.

**162. Product Name:** Honeymead Soy Flour.

**Manufacturer's Name:** Honeymead Products Co.

**Manufacturer's Address:** Cedar Rapids, Iowa.

**Date of Introduction:** 1943.

**Wt/Vol., Packaging, Price:** 2 lb paper bag.

**How Stored:** Shelf stable.

**New Product-Documentation:** Spot in *Soybean Digest*.

1944. Jan. p. 18. A photo shows the bag and front panel.

The product was recently put on the market by Honeymead Products Co., at Cedar Rapids, Iowa. "Its appearance is being heralded by extensive newspaper and other advertising. A Honeymead Soy Flour cookbook is in the process of completion and will be available shortly."

**163. Business Week.** 1944. No war baby: Lecithin, long used by food industry and confectioners, now is widely used in paints, oils, cosmetics, textiles and soaps. No. 756. p. 74, 76. Feb. 26.

• **Summary:** Contents: Introduction. Saves scarce fats. Assists the liver. Found in soybeans. A complex compound. Valued in foods. Freshness preserved. More uses. Another firm extracts. Uses expanded.

In foods, lecithin serves an emulsifier, or dispersing agent, and an antioxidant for scarce fats, where a little of it helps keep a lot of scarce fat fresh. Lecithin assists fats to disperse more freely among the other ingredients of bread, cake, packaged biscuits, and cookies; therefore less fat is required to achieve a given result. There is considerable evidence that lecithin can help in the treatment of psoriasis, a persistent skin disorder, and that it assists the intestinal absorption of vitamin A (and the body's conversion of vegetable carotene into vitamin A).

It also can help in the treatment of arteriosclerosis by reducing excess cholesterol in the blood. And it helps the liver in absorbing vitamin B-1 (thiamine).

Most commercial lecithin is extracted from soybeans; soya lecithin sells for \$0.30 to \$0.35 a pound, which is much less expensive than egg lecithin (\$8-12 per pound), or lecithin extracted by meat packers from animal brains (\$5-6 per pound).

In chocolate, the addition of 0.35% of lecithin can replace 8% of cocoa butter, thereby transforming a lumpy, almost gritty chocolate mixture into one with the consistency of cream.

A small amount of lecithin added to the Army's chocolate powder enables it to fully disperse in cold water

on the battlefield—or any place else where not water is not available.

Added to oleomargarine, lecithin prevents spattering, imparts a smooth consistency and stability against spoilage, and confers butterlike properties.

In the USA, the headquarters for soya lecithin is the American Lecithin Co., Inc. (ALC) in Elmhurst, New York. In 1928 it began to pioneer a German extraction process using purified hexane (a petroleum fraction) to dissolve the lecithin from crushed soybeans. ALC does not process or even handle soybeans, but rather it licenses to the Glidden Co. (Cleveland, Ohio) and Archer-Daniels-Midland Co. (Minneapolis, Minnesota) the rights to its patented process. ALC then buys the lecithin made by these two companies, processes, refines and blends it to various consistencies, then markets it to a host of different applications. Last year Central Soya Co. (Fort Wayne, Indiana) also took a license from ALC but used its own process for solvent extraction of soybean oil.

Before the war, lecithin in the USA was used almost entirely in foods and confections. But today it is also used in many nonedible applications such as oil paints and enamels (where it is a dispersing or wetting agent), leather (as a softener), textiles (to give a soft feel), lubricating oils (as an antioxidant and antigumming agent), leaded gasolines (as a dispersing agent), and cosmetics and soaps (as an emulsifier and antioxidant).

ALC expects big postwar sales of its new lecithinated flour for home kitchen use.

164. Bohn, Ralph M. 1944. Soy products in candies. *Confectioners Journal* 70(830):12, 14, 25. March.

• **Summary:** The various types of soy products based on their fat content are: (1) Full-fat soy flour. (2) Roasted or puffed soy beans: The whole bean may be roasted dry or in oil, or it may be shot from guns in a manner similar to puffed wheat or rice. (3) Expeller flour and grits: The whole soybean is pressed to remove most of the oil and the cake is ground to flour or grits. (4) Extracted flour and grits: The oil is extracted with a volatile solvent. The fat-free portion is debittered and ground to the desired size. The protein in the extracted flour is largely “undenatured” or unharmed by heat.

(5) “Protein whipping products: These are made by extracting the protein from a base material similar to that used for extracted products and drying. These products whip like egg albumen, but they do not coagulate as well with heat. They are constantly being improved...”

Describes ideas for using each of these products in candies and cautions to be observed. Full-fat soy flour works well in a fudge-type candy in which no milk of any kind is used. The following bulk recipes are given: Soy fudge squares and bars. Soy caramel for casting and coating. Milk-soy fudge for cutting. A portrait photo shows Ralph M. Bohn. Address: Feed Products Development and Research,

Archer-Daniels-Midland Co., Minneapolis 2, Minnesota.

165. Eastman, Whitney. 1944. Progress versus heartaches: Soybeans after the war—5. *Soybean Digest*. May. p. 10-11.



• **Summary:** Editor’s introduction: “A straight-from-the-shoulder account of what the soybean industry may expect after the war: tremendous progress—with major adjustments. Mr. Eastman is president of the vegetable oil and protein division of General Mills, Inc., and formerly vice president of Archer-Daniels-Midland Co., in charge of soybean operations. He organized the National Soybean Processors Association and served as its president for a number of years.

“Tremendous progress will be made in the soybean industry in the postwar period, but this period of progress in the industry will be accompanied by many heartaches. There will be heartaches for those who guess wrong or who have not laid-by for a rainy day, and there will be golden opportunities and just rewards for others who have the ‘know how’ and have the courage and the resources to take advantage of opportunities as they occur.

“While there should be marked progress in the breeding and production of improved varieties of soybeans for special classified uses, the notable changes in the industry will take place in the fields of scientific development, processing and distribution.

“The vegetable oil processing industry is one of the oldest industries in the United States, dating back to colonial times. The industry, taken as a whole, has operated for over a century by empirical methods based largely on the experience of a previous generation.

“What technological advances have been made have

taken place very largely outside the industry itself or have been transplanted from Europe. Very little attention has been given to scientific research within the industry except in very recent years. The industry has been nurtured and protected by a high import tariff barrier to foster and expand domestic oilseed crops, but relatively little progress has been made by vegetable oil processors in reducing conversion costs, developing more efficient processes, and reducing distribution expense. The processing industry owes it to the oilseed crop producers and the consuming public to develop more efficient conversion processes so as to be prepared to meet foreign competition under lower tariff protection when that day comes.

“The trend in horizontal expansion in American industry in recent years has brought its full impact upon the vegetable oil processing industry. This movement has gained tremendous momentum in all segments of the industry in the last decade.

“Tendency to Control: The tendency is for the processor to control the two principal products of the vegetable oil processing industry; i.e., vegetable oil and protein concentrates, for use in the manufacture of products which are marketed direct to consumers. This trend toward the control of the vegetable oils and protein concentrates has resulted in greatly reduced quantities of these commodities being offered for sale as such in the open market. In order to justify this trend to our growers and consumers, tremendous economies in conversion and distribution methods will have to be developed.

“The vegetable oil industry, taken as a whole, is one of the vital industries in our domestic economy. It is becoming increasingly significant in our national economic pattern as the derivatives of the vegetable oilseed crops expand their commercial horizon. It is hard to visualize an industry of greater importance to our national economy and security in time of either war or peace.

“The soybean processing industry is the infant segment of the vegetable oil processing industry in the United States. Except for a few isolated and intermittent processing operations the industry is only about twenty years old. The domestic processing industry and soybean production expanded simultaneously. Up until the war, soybean processing facilities have been provided in excess of soybean production. During the wartime period—under Government sponsorship, through the mechanism of price supports, price controls and subsidies—the processing industry has greatly expanded. The expansion has taken place very largely by providing additional processing capacity in the form of expeller or screw press equipment. While there are sound arguments in favor of this procedure under a wartime economy, the policy developed under this exigency may haunt us during the postwar adjustment era. Advance is Overdue: Research and technological advances—resulting in operating economies and enhancement of the value of

the finished products and competitive advantages—are long overdue in the vegetable oil processing industry in the United States. An abundant supply of relatively cheap imported vegetable oils and the lack of severe competition among the larger domestic vegetable oil producers have delayed the expansion of the continuous solvent extraction process in this country.

“In Europe—particularly in Germany—before the war the vegetable oil processing industry had been forced by strained economic conditions and an acute shortage of fats to convert their processing systems over to the extraction process. In this country for approximately a century we have continued to use the antiquated process known as the hydraulic process. In recent years some progress has been made in the development and utilization of the expeller or mechanical screw press, especially in the soybean industry.

“Perhaps because of the wide diversification of interests in the soybean processing industry, greater technological advances have been made than in the older segments of the industry. However, research, scientific development and technological advancement have not kept pace with the rapid overall growth of the soybean industry. There have been many pioneers and individualists giving birth to new ideas and developments in various channels of the industry, but the widely diversified interests of the dominating groups within the industry have greatly impeded scientific advancement.

“The first continuous extraction unit to be built in this country was brought from Germany and installed in Chicago in 1934. Subsequently, other extraction units were purchased in Germany by domestic soybean processors prior to the war. We are no longer dependent upon Germany for this type of equipment. Already several progressive and resourceful American machinery manufacturers have developed and built several such units. Several other large and resourceful machinery manufacturers are exploring the possibilities in this field—studying the several process applications and the economics of the large plant versus the small plant. Machinery manufacturers who have been in on the ground floor in the oil mill machinery business for many years have tried to protect their old established lines of equipment—perhaps because the repair part business has been so lucrative.

“Immediately following the end of the war, there will, without doubt, be a broad swing to the continuous solvent extraction process. The Government under the provisions of the soybean processors’ contract has recognized the efficiency of the extraction process, as have the various interests who have already invested their money in these units.

“As the industry swings over to the extraction process, there will develop a unification of interests among surviving processors such as the industry has not yet seen. The upheaval caused by such a technological advance in the industry will result in far reaching repercussions.

Obsolescence will be exceedingly heavy in writing off undepreciated capital investment, and large amounts of new capital will be required to build the new modern plants and auxiliary facilities. New faces will appear in the industry, and old faces will disappear. Only those who can perform an efficient economic function as a converter or distributor will remain. The industry will be fraught with many heartaches during this transition period but will emerge as a strong segment of our agricultural and industrial economy.

“In order to stabilize the soybean industry and make it secure as a permanent part of our agricultural and industrial economy, we must closely correlate and harmonize the interests of the soybean grower, the processor and the consumer of the finished products. The soybean processing industry buys the raw materials from the grower and sells back to the farmer a large part of the manufactured products. The soybean processor, therefore, holds a key position in the industry, but in order to justify his existence and not be responsible for the upheaval of the industry’s economic stability, he must convert soybeans into marketable high quality products efficiently and distribute the manufactured products to the ultimate consumer at the least possible cost. If the soybean grower is to be expected to produce an adequate supply of soybeans, and this same grower or his farmer neighbor is to be expected to buy a large part of the finished soybean products, the grower is entitled to get a fair price for his soybeans in relation to the price he is asked to pay for the soybean products he is expected to buy.

“The soybean industry is unique in this respect—perhaps more so than any other segment of agriculture. This is a real challenge to the soybean processor. American ingenuity and resourcefulness will meet the problem squarely and solve it. If one group fails to do the job, another will come forward to solve the problem. This is the price of progress.” Address: President, Vegetable Oils and Protein Div., General Mills, Inc. Formerly vice president of Archer-Daniels-Midland Co. in charge of soybean operations.

166. *Soybean Digest*. 1944. Grits and flakes from the industry: Archer-Daniels-Midland Co. has moved its Chicago office from the mill... June. p. 17.

• **Summary:** “... at 927 Blackhawk St., to 904 Wrigley Bldg., 400 N. Michigan Ave., Chicago 11. New telephone is Superior 5860. Expansion of the company’s soybean operations during the past few years made the move to more commodious offices necessary. G.E. Laugen is office manager, E. O. Paschke is in charge of soybean specialty sales and J. W. Gorman handles soybean oil meal and linseed meal sales.”

167. **Product Name:** Baker’s Nutrisoy (Defatted Soy Flour. Lightly Heat Treated).

**Manufacturer’s Name:** Archer Daniels Midland Co.

**Manufacturer’s Address:** Minneapolis, Minnesota.

**Date of Introduction:** 1944 July.

**How Stored:** Shelf stable.

**Nutrition:** Moisture 7%, protein 52%, fat 1%, ash 6%, crude fiber 3%, other carbohydrates 31%, calories 280/100 gm. PDI (Protein Dispersibility Index): 70/79.

**New Product–Documentation:** *Soybean Digest*. 1944.

July. p. 14. “Commander [Larabee] and A-D-M merge soy division.” “The new division will start immediately merchandising a soya product under the trade name, ‘Bakers’ Nutrisoy,’ through a selected group of Archer-Daniels-Midland Co. brokers, the sales organization of Larabee Flour Mills Co. of the southwest... and the sales organization of Commander Milling Co...”

*Soybean Blue Book*. 1948. p. 83. Archer-Daniels-Midland Co. at 600 Roanoke Bldg., Minneapolis 2, Minnesota, now makes soy flour, soy grits, and ADM Soybean Brew Flakes. Ad in *Soybean Blue Book*. 1959. p. 95. “Bakers Nutrisoy.”

Formo and Peterson. 1959. *Chemurgic Digest*. Dec. p. 6-7. “Chemurgy: A way of doing business.” “Light colored improved Bakers Nutrisoy appears in many bakery products. Low flavor level and light color make it an ideal replacement or supplement for milk.”

*Soybean Blue Book*. 1964. p. 111. “Nutrisoy edible soy flours and grits.” Company is now at 733 Marquette Ave., Minneapolis 2, Minnesota.

168. *Soybean Digest*. 1944. Soybeans... and people: Commander [Larabee] and A-D-M merge soy division. July. p. 14.

• **Summary:** “The soy products division of Commander-Larabee Milling Co. has been merged with the Archer-Daniels-Midland Co., E.J. Quinn, vice president of the milling company, and S.M. Mairs, executive vice president of Archer-Daniels-Midland Co. have announced.”

“This merger is in recognition of the increasing importance of soy flour and soya products in the baking industry.”

With the merger, Commander Larabee Milling Co. becomes a subsidiary of Archer-Daniels-Midland Co. Commander-Larabee Milling Co. is in Minneapolis, Minnesota (Taylor 1944, p. 203).

169. Soy Flour Association. 1944. Soya in rehabilitation food programs. Chicago, Illinois. 15 p. Aug. [2 ref]

• **Summary:** Discusses what soy flour is and how it can and should be used, especially in Europe. Members of the association are ADM, Central Soya Co., The Glidden Co., Honeymead Products Co., Shellabarger Soybean Mills, Spencer Kellogg and Sons, Inc. and A.E. Staley Mfg. Co. Address: 3818 Board of Trade Building, Chicago, Illinois.

170. *Business Week*. 1944. Funds for soya: Securities are offered to public for first time by large soybean processing

company as war boosts volume of sales. Sept. 2. p. 74, 76.

• **Summary:** Last week \$2,250,000 of 3.75% debentures were successfully offered to the public by the Central Soya Co., Inc., of Ft. Wayne, Indiana. It was the first soybean processing company to enter the new issues securities market. "It is particularly fitting that Central Soya should prove the first to break the ice. Founded only ten years ago, it has rapidly grown into the most important unit in the country exclusively engaged in extracting oil and meal from soybeans.

"Also, it has become one of the three largest of the companies now operating in the soybean field, and shares trade leadership only with such substantial old-timers as Archer-Daniels-Midland Co., which is primarily a linseed producer, and A.E. Staley Mfg. Co., whose principal interests lie in the starch business."

The company's founder, D.W. McMillen, Sr., had started a feed business of his own in Indiana in 1916. "McMillen, who had previously done well operating country grain elevators with his father, was so successful in his new venture that in the late twenties directors of Allied Mills, Inc., a leader in the feed line, purchased his business and made him president of their company.

"But, despite his rise to prominence in the feed trade, the more McMillen mulled over the future of the soybean the better he liked its outlook. Finally, he resigned the presidency of Allied Mills in 1933, organized the Central Soya Co. in 1934, and started processing beans on a modest scale at the Central Sugar Co.'s plant at Decatur, Ind.

"In 1935 McMillen's new company built its own soybean oil and feed mill at Decatur; by 1936, it reported annual sales of almost \$3,900,000 and net profits of \$278,000.

"Central Soya sales in the fiscal year ended Sept. 30, 1942, skyrocketed to \$27,700,000 twice its 1941 volume. Profits soared to \$666,000 from the previous year's \$275,000."

Note: *Webster's Dictionary* defines a debenture as "a bond backed by the general credit of the issuer rather than a specific lien on particular assets."

171. Hayward, J.W. 1944. Utilization of soybean oil meal as feed and fertilizer. *Soybean Digest*. Sept. p. 36, 38.

• **Summary:** "*Soybean oil meal, having found wide acceptance as one of the finest and most versatile of protein concentrates, now is in very wide demand. Will it retain its new-found friends after the war? Dr. J.W. Hayward, director of biological research and development of Archer-Daniels-Midland Co., Minneapolis, surveys the situation. He believes utilization should continue to expand if research programs are kept up and as experience grows.*"

"Soybean growers, like all producers of raw materials, are looking forward to the postwar period and wondering just what the future holds for them. How many soybeans the

grower will attempt to produce is normally dependent upon the economic aspects involved. Here the price per bushel of soybeans in relation to the price for other staple crops is very important in the mind of the grower.

"The primary product of soybeans is soybean oil meal. Approximately 80 percent of the soybean is converted to meal products by the processor.

"Just prior to declaration of World War II the production of harvested soybeans was increased rather consistently from year to year. Approximately 2 million tons of soybean oil meal were produced from the 1941 soybean crop. This compares with a total domestic production of all high-protein concentrates during the pre-war period of 5 million to 6 million tons annually. These figures include dry-milk products as such and the equivalent, fed as liquid milk on the farms.

"Under the impetus of the war our present production of soybean oil meal is about 3 million tons annually and compares with a total production of high-protein concentrates of about 11 million tons.

"The tremendous increase in livestock numbers has provided a strong demand for high protein concentrates produced during the past 2 or 3 years. In planning for the future, however, we should not forget that during the pre-war period 5 million tons of these protein concentrates were considered a burdensome supply for our country as a whole and most of us still recall those days when soybean oil meal sold at \$20 per ton and less F.O.B. the mills, and rather hard to sell at that figure.

"Demand Strengthened: However, the demand for soybean oil meal in the post-war period will be strengthened by the widespread familiarity with its proven nutritional properties. Because of aggressive research and expanded wartime usage, many of the nutritional values of soybean oil meal were quickly revealed. Ten years ago, yes, even 4 years ago, there were many who were not familiar with the qualities of soybean oil meal. Today soybean oil meal is widely accepted as one of the very finest and most versatile protein concentrates available.

"Soybean producers may well ask if we can expect further advances in the science and technology of using soybean oil meal in animal and poultry rations. This is a fair question because further improvements will expand the market for soybean oil meal. If it is fair to predict the future of soybean oil meal on the basis of what we have learned about the older, more established protein concentrates, then it can be said without question, that we still do not know all there is to know about soybean oil meal.

"Meat scraps and fish meal, for example, are old established proteins and yet even today we are still learning pointers on what it takes to make these ingredients function in rations for livestock and poultry. The amino acid approach to protein quality has merely been scratched and I predict that this is one phase of protein concentrate studies that will

receive a great deal of attention during the years ahead. I have further confidence that such a study will not limit the utilization of protein concentrates, but rather provide greater knowledge of their makeup and thus make it easier for the consumer to utilize them to best advantage.

“The great percentage of our soybean oil meal production is used in animal and poultry feeds. You may well ask just what we can expect in the way of utilization by the various classes of animals and poultry on the farm or in the commercial feed lots or specialized production units.

“Dairy cattle have normally constituted a demand for 50 percent of all the vegetable protein concentrates produced. During times of normal supply and competition we can expect that soybean oil meal will sell to dairy farmers on the basis of its cost per pound of digestible protein as these consumers do not generally pay a premium for protein quality. In this respect soybean oil meal will have to be placed in a class with some of the other protein materials which have not been generally praised for their efficient protein.

“Beef cattle and sheep do not normally constitute a very large outlet for high protein concentrates except in times of very large production and low prices. These animals normally utilize a large proportion of roughage to concentrates. There are periods of about 3 months out of the year when range cattle and sheep are fed protein concentrates; even then the quality is limited.

“No one seems to know just what percentage of our total protein concentrate supply can be utilized by beef cattle and sheep during normal times. The Feed Industry Council, in their recent estimates on feed usage for 1944, have allotted beef cattle and sheep 20 percent of the total supply of high protein concentrates. This figure may be a trifle conservative for the future because feeding margins do not justify highly finished beef and lamb. Under the free economy of pre-war years many beef cattle and sheep were fed in feed lots for periods of 3 to 6 months. During this time they normally received a protein concentrate in addition to the usual grain and roughage ration.

“If soybean oil meal should ever be priced as cheaply as it was several years ago, beef cattle and sheep feeders can well afford to use it as a substitute for corn. Quite extensive work has been conducted at the University of Illinois on this very subject. They have found that beef cattle gain even more rapidly when soybean oil meal is fed with corn in the proportion of about 1 part soybean oil meal to 4 parts of corn, or 1 to 2 than they do when the proportion is 1 to 7. Dressing percentage and selling price also favor the higher levels of soybean oil meal. These studies have shown that soybean oil meal is actually worth more when fed at high levels than when fed at a ratio of 1 to 7.

“Lamb Rations: In the case of lambs it has been demonstrated that soybean oil meal may actually replace all of the corn in a standard shelled corn, corn silage, soybean

oil meal ration. Lambs which received .84 lbs. of soybean oil meal daily and no corn actually gained more rapidly than when the soybean oil meal and corn were fed in the standard proportions of 1 to 7 and 1 to 9.

“Hogs constitute the greatest potential demand for protein concentrates of any class of farm animals and poultry. Hogs belong to the class of critical animals which require protein of high quality for maximum development. For that reason soybean oil meal, when properly processed, is considered a favorite protein concentrate for hogs.

“Recent advances in hog nutrition have emphasized the need to maintain adequate levels of minerals and vitamins regardless of the protein source. This is of basic importance in all rations. When this practice is followed soybean oil meal can supply the major portion of supplemental protein in all types of hog rations.

“If we consider hog production in the United States during 1940 as a fairly normal year and if we fed these hogs properly balanced rations with respect to protein, there would be a potential annual need for 3 million tons of soybean oil meal, even if soybean oil meal supplied only half of the supplementary protein. Thus we see that if the various established agencies are successful in putting across an educational campaign for the proper nutrition of hogs, this class of animals can very easily become our greatest outlet for soybean oil meal and an outlet that will possibly justify an increase in soybean oil meal over our present production.

“Poultry, is, of course, our most dependable consistent outlet for protein concentrates. The poultry population of this country is normally fairly steady. Its fluctuations are less violent than in the case of hogs. Poultry, like hogs, responds to proteins of high quality and thus a premium is placed on soybean oil meal for use in poultry rations. Here again, correct processing and supplementation of soybean oil meal is necessary for maximum results.

“I consider it appropriate to give credit to the poultry industry for pioneering soybean oil meal more aggressively than any other animal industry. This group was first to learn just what it takes to make soybean oil meal function properly in a complete feed. It was the poultry industry that first placed emphasis on properly cooked soybean oil meal. With emphasis on poultry requirements for quality protein, the extracted or 44 percent soybean oil meal came into high favor.

“Fur-bearing animals, rabbits, dogs and other pets, may possibly become a more important outlet for soybean oil meal than they have been in the past. They have been the last class of animals to accept soy products as a protein ingredient, with the possible exception of dogs. Although the protein quality of soybean oil meal is very satisfactory for fur-bearing animals, such as foxes and mink, there are apparently other factors to consider in making soybean oil meal most useful for these animals. There are now an estimated 15 million dogs in the United States, so we must

admit that these animals themselves constitute a very large potential demand for feed ingredients.

“Thus far the outlet for soybean oil meal and other organic materials for fertilizer purposes has been comparatively small. During a normal year 50,000 tons of all organic fertilizers is considered a relatively significant tonnage. During the war years this tonnage has been reduced to an estimated 20,000 tons. Of course, as you know, soybean oil meal has been restricted for feed purposes and not permitted for use as a fertilizer during our present emergency. The over-all demand for fertilizer varies, of course, but during the present year, there is an estimated demand for probable delivery of some 11 million tons of fertilizer.

“Organic Fertilizers: There are many advantages to organic fertilizers. Soybean oil meal has already proved itself as a reliable carrier of organic nitrogen. Fertilizer tests at the Connecticut Tobacco Experiment Station have shown soybean oil meal to be significantly superior to cotton seed meal as an organic fertilizer. This superiority is based on the greater availability of the nitrogen in soybean oil meal...”  
Address: Director of Biological Research and Development, Archer-Daniels-Midland Co., Minneapolis.

172. National Soybean Processors Association. 1944. Year book, 1944-1945 (Association year). Chicago, Illinois. 71 p.  
• **Summary:** Contents: Constitution and by-laws (incl. committees, code of ethics). Officers, directors and committees for 1944-45. Membership of the National Soybean Processors Association. Trading rules governing the purchase and sale of soybean oil meal. Appendix to trading rules on soybean oil meal: Official methods of analysis (moisture, protein, oil, crude fiber—official). Trading rules on soybean oil. Appendix to trading rules on soybean oil: Uniform sales contract, refining loss method (cup refining test, tentative official centrifugal refining test), soybean oil bleach test—refined oils, free fatty acids, tentative method of grading soybean oil for green color, official method for oil sampling, standard specifications for crude soybean oil for technical uses, moisture and volatile matter (vacuum oven method, hot plate method), modified Gardner break test, iodine number—Wijs method, unsaponifiable matter, official chemists and samplers for oil.

Article IX, Committees, lists and describes each.

The section titled “Officers, directors, and committees” (p. 13-20) states: President: Edward J. Dies. V.P., Chairman Executive Committee: E.K. Scheiter. Secretary: C.E. Butler. Treasurer: E.F. Johnson. Ass’t. Treasurer: F.G. Duncanson. Executive Committee: E.K. Scheiter, Chairman, D.J. Bunnell, C.E. Butler, Edward J. Dies, Jasper Giovanna, S.F. Johnson, Mr. June S. Mitchell, H.R. Scroggs.

Board of Directors (Term expiring Sept. 1945): C.E. Butler, H.L. Dannen, Roger Drackett, Howard Kellogg, Jr., W.H. Knapp, H.R. Scroggs. (Term expiring Sept. 1946):

H.A. Abbott, D.J. Bunnell, H.E. Carpenter, J.B. DeHaven, Philip S. Duff, P.M. Jarvis. (Term expiring Sept. 1947): J.H. Caldwell, Jasper Giovanna, Mr. June S. Mitchell, E.K. Scheiter, H.R. Schulze, P.E. Sprague.

Standing committees: For each committee, the names of all members (with the chairman designated), with the company and company address of each are given—Traffic and transportation. Research. Technical. Soybean grades and contracts. Oil trading rules. Meal trading rules. Soy flour. Crop improvement. Soybean research council. Trade development. Edible soybean. Handwritten on blank facing pages: Contract. Margarine. Wartime exports (11 March 1945). Soybean oil meal industry advisory committee. Nominating committee (16 July 1945). Uniform rules and standards committee for soybean oil meal (14 Sept. 1945). Urea yield committee (14 Sept. 1945).

The following organizations, and individuals are members of NSPA: Albers Milling Co., Seattle, Washington (W.P. Kyle). Allied Mills, Inc., Board of Trade Bldg., Chicago, Illinois (6 members). Archer-Daniels-Midland Co., Box 839, Minneapolis, Minnesota; Chicago, Illinois; Decatur, Illinois; Toledo, Ohio (5 members). Berea Milling Co. (The), Lexington, Ohio. Blanton Mill (The), St. Louis, Missouri. Boone Valley Cooperative, Eagle Grove, Iowa. Buckeye Cotton Oil Co. (The), Cincinnati, Ohio; Louisville, Kentucky; Memphis, Tennessee. Cairo Meal & Cake Co., Cairo, Illinois. Cargill, Inc., Minneapolis, Minnesota (Julius Hendel); Springfield, Illinois (Eric Nadel); Cedar Rapids, Iowa (L.O. Hauskins); Fort Dodge, Iowa (H.E. Marxhausen). Central Iowa Bean Mill, Gladbrook, Iowa. Central Soya Co., Inc., Chicago, Illinois; Gibson City, Illinois; Decatur, Indiana (3 members). Clinton Co., Clinton, Iowa (E.W. Myers). Concord Soya Corporation, Concord, Michigan (W.C. Whittecar). Dannen Grain & Milling Co., St. Joseph, Missouri. Decatur Soy Products Co., Decatur, Illinois (Jasper Giovanna). Drackett Co. (The), Cincinnati 32, Ohio (Roger Drackett). Elevators & Mills, Inc., Windfall, Indiana (Mr. June S. Mitchell). Fairfield Soy Mill, Fairfield, Iowa (Jos. Sinaiko). Farmers Cooperative Assn., Ralston, Iowa (Karl Nolin). Farmers Cooperative Co., Dike, Iowa (C.M. Gregory). Farmers Cooperative Elevator, Martelle, Iowa (C.K. Gordon -> H.B. Lovig). Fayette Soy Bean Mill, Fayette, Iowa (J.M. Durfey -> W.V. Clark). Funk Bros. Seed Co., Bloomington, Illinois (H.A. Abbott). Galesburg Soy Products Co., Galesburg, Illinois (Max Albert). General Mills, Inc., Vegetable Oil and Protein Div., Minneapolis, Minnesota (W.H. Eastman); Belmond, Iowa (W.E. Flumerfelt). Glidden Co. (The), Cleveland, Ohio (P.E. Sprague); Chicago, Illinois (A.A. Levinson -> R.R. Stegler). Gooch Milling & Elevator Co., Lincoln, Nebraska (M.R. Eighmy). Hemphill Soy Products Co., Kennett, Missouri (W.A. Hemphill). Hiawatha Soybean Mill, Hiawatha, Kansas (A.G. Thomson). Honeymead Products Co., Cedar Rapids, Iowa (D.O. Andreas -> Osborn Andreas);

Spencer, Iowa (J.M. Wilson -> Steve Burke); Washington, Iowa (Hugo Lensch). Hoosier Soybean Mills, Marion, Indiana (J.H. Caldwell, Jr.). Huegely Elevator Co., Nashville, Illinois (J.W. Huegely). Hulcher Soy Products, Virden, Illinois (Norman E. Hulcher). Iowa Soy Co., Redfield, Iowa (E. Lyster -> H.R. Straight). Kansas Soybean Mills, Inc. (The), Emporia, Kansas (Ted W. Lord). Laucks (I.F.), Inc., Portsmouth, Virginia (H.F. Armstrong). Mankato Soybean Products Inc., Mankato, Minnesota (Frank J. Bergman -> W.A. Berge). Marr (Pete) Soybean Mills, Fremont, Nebraska (Pete Marr). Mellott Grain Co., Mellott, Indiana (Milford Knowles). Muscatine Processing Corp., Muscatine, Iowa (G.A. Kent). Old Fort Mills, Inc., Marion, Ohio (Ralph Kail). Owensboro Grain Co., Owensboro, Kentucky (William M. O'Bryan). Pillsbury Soy Mills, Clinton, Iowa (Raymond C. Ilstrup); Centerville, Iowa (H.R. Schultz). Procter & Gamble Distributing Co., Cincinnati, Ohio. Procter & Gamble, Ivorydale, Ohio (W.H. Knapp). Producers Cooperative Oil Mill, Oklahoma City, Oklahoma (O.K. Winterringer). Quincy Soybean Products Co., Quincy, Illinois (Irving Rosen). Ralston Purina Co., St. Louis, Missouri (E.F. Johnson); Kansas City, Missouri (G.H. Banks); Lafayette, Indiana (Ralph Guenther); Iowa Falls, Iowa (H.N. Johnson); Circleville, Ohio (Hal Dean). Shellabarger Soybean Mills, Decatur, Illinois (W.L. Shellabarger). Simonsen Brothers, Quimby, Iowa (W.E. Simonsen). Sioux Soya Co., Sioux City, Iowa (H.R. Scroggs). Southern Cotton Oil Co. (The), Goldsboro, North Carolina (C.S. Ragan); Tarboro, North Carolina (W.A. Moore). Soya Processing Co., Wooster, Ohio (H.H. Heeman). Soy Bean Processing Co., Waterloo, Iowa (C.E. Butler). Soy-Rich Products, Inc., Wichita, Kansas (B.S. Brooks). Spencer Kellogg & Sons, Buffalo, New York; Chicago, Illinois; Decatur, Illinois; Des Moines, Iowa (Howard Kellogg, Jr.). Staley (A.E.) Mfg. Co., Decatur, Illinois (E.K. Scheiter); Painesville, Ohio (H.D. Egly -> Thomas Longbons). Swift & Co., Chicago, Illinois (P.M. Jarvis). Swift & Company Oil Mill, Cairo, Illinois (W.B. Stone). Swift & Company Soybean Mill, Champaign, Illinois (N.P. Noble). Swift & Company Soybean Mill, Des Moines, Iowa (A.F. Leathers). Swift & Company Soybean Mill, Fostoria, Ohio (S.D. Hollett -> H.S. Byrd). Toledo Soybean Products Co., Toledo, Ohio (J.H. Brown). Wells (Ralph) & Co., Monmouth, Illinois (Ralph Wells). West Bend Elevator Co., West Bend, Iowa (R.W. Jurgens). Western Soybean Mills, Sioux Falls, South Dakota (E.A. Woodward). Williams Milling Co., Sac City, Iowa (Leo W. Williams).

Organizations represented on committees: American Soybean Association, Hudson, Iowa (George Strayer, Howard Roach). Illinois College of Agriculture, Urbana, Illinois (Dr. W.L. Burlison, J.W. Lloyd). U.S. Regional Soybean Laboratory, Urbana, Illinois (Dr. R.T. Milner).

Handwritten: New members added since publication of the Trading Rules Book—Big 4 Cooperative Processing Assn., Sheldon, Iowa (Morel M. Stientjes, Mgr., April

1945). Delphos Grain & Milling Co., Delphos, Ohio (Floyd E. Hiegel, Pres., Aug. 1945). Haynes Soy Products Inc., Portland, Indiana (W.V. Helfiker, Office Mgr., May 1945). Holland Pioneer Mills Inc., Ohio City, Ohio (G.A. Holland, Pres., March 1945). Jamesville Mills, Inc., Jamesville, Wisconsin (A. Roger Hook, Mgr., Oct. 1945). Kansas Soya Products Inc. (The), Kansas City, Kansas (Richard Lord, V.P. & Treas., Oct. 1943). North Iowa Cooperative Processing Association, Manly, Iowa (Glenn Pogeler, Mgr., Nov. 1944). Honeymead plant in Spencer, Iowa, bought Doughboy Mills, Inc., New Richmond, Wisconsin (4 Dec. 1945). Washington Soy Mill: Name changed by Joe Sinaiko from Honeymead's plant in Washington, Iowa (19 Dec. 1945).

Note: This is the earliest document seen (March 2008) that uses the name "North Iowa Cooperative Processing Association." The word "Cooperative" is spelled without a hyphen. Address: 3818 Board of Trade Building, Chicago 4, Illinois.

173. Hayward, J.W. 1944. Soybean oil meal feeds. *Flour & Feed* 45(5):18, 20. Oct.

• **Summary:** Contents: Introduction. Value of soybean oil meal. Importance for feeds. F.I.C. [Feed Industry Council] estimates. Poultry and proteins ("I consider it appropriate to give credit to the poultry industry for pioneering soybean oil meal more aggressively than any other animal industry"). Dog feed demand (there are now an estimated 15 million dogs in the United States, but they are largely a potential market). Use of meal as fertilizer. Future of soybean oil meal. Fish and gluten meals. Address: PhD, Archer-Daniels-Midland Co., Minneapolis, Minnesota.

174. **Product Name:** Soybean Oil, and Soybean Meal.

**Manufacturer's Name:** Honeymead Products Co.

**Manufacturer's Address:** Spencer, Iowa.

**Date of Introduction:** 1944.

**Ingredients:** Soybeans.

**New Product—Documentation:** Polk's Spencer (Clay County, Iowa) City Directory. 1945. Honeymead Products Co., Stephen A. Burke, Mgr. Feed Mfrs. [Manufacturers]. 600 North Railway. Note: No phone number is given. Burke, Stephen A. Wife: Edna (I). Mgr. Honeymead Products Co. Home: 402½ North Grand Ave.

*Soybean Digest*. 1945. "Honeymead sells to Cargill, Inc." June. p. 24. Honeymead Products Co. sold its Cedar Rapids plant to Cargill, Inc., effective June 1. Estimated purchase price was 2½ million dollars. "Honeymead will continue in business, keeping its main office in Cedar Rapids and continuing to operate its feed and soybean processing plants at Spencer and Washington, Iowa."

Honeymead Products Co. 1945. "Again... Honeymead does it! Here are the two just completed Honeymead modern plants located at Washington and Spencer, Iowa" (Ad). *Soybean Digest*. Sept. p. 77. At the top of this full-

page black-and-white ad is a map of Iowa, with white stars and bold letters showing Spencer (in the northwest) and Washington (in the southeast). In the middle of the ad are two photos showing each of the new plants at Spencer and Washington, Iowa. The bottom third of the ad is text. “The two new Honeymead plants in Washington, Iowa, and Spencer, Iowa, represent the latest advancement in extraction-type soybean plants. They are entirely new in idea. They are entirely new in method. They are most advantageously located. The result is that Honeymead Soybean Meal is uniformly of the highest quality.”

175. Markley, Klare S.; Goss, Warren H. 1944. Soybean chemistry and technology (Continued—Document part II). Brooklyn, New York: Chemical Publishing Co. vii + 261 p. Foreword by Edward Jerome Dies, President, Soybean Nutritional Research Council. [684 ref]

• **Summary:** (Continued): Page 207-216: Table 20: Soybean processing [crushing] mills in the United States. These mills are divided into 3 types: (1) Mills specializing in soybeans (p. 207-10; 73 such mills). (2) Soybean mills under construction or contemplated (p. 210-11; 39 such mills). (3) Temporary and part time soybean mills (p. 211-16; 222 such mills). Solvent extraction plants in group 1 are designated with an asterisk (\*). These mills are organized in a 3-column table: alphabetically by state, and with each state alphabetically by city, and with each city, alphabetically by company name. Here we will list only type 1, “Mills specializing in soybeans.”

“Arkansas: West Memphis: Arkansas Mills, Inc. (S). Wilson: Wilson Seed and Feed Company (S).

“California: Oakland: Albers Brothers Milling Company (S).

“Illinois: Bloomington: Funk Brothers Seed Company (M). Cairo: Swift and Company (M). Champaign: Swift and Company (L). Chicago: Archer-Daniels-Midland Company (M)\* Chicago: The Glidden Company (L)\*. Chicago: Norris Grain Company (S). Chicago: Spencer Kellogg and Sons (L). Decatur: Archer-Daniels-Midland Company (L)\*. Decatur: Decatur Soy Products Company (M). Decatur: Spencer Kellogg and Sons (L). Decatur: A.E. Staley Manufacturing Company (L). Galesburg: Galesburg Soya Products Company (M). Gibson City: Central Soya Company, Inc. (L). Monmouth: Ralph Wells and Company (S). Peoria: Allied Mills, Inc. (L). Quincy: Quincy Soybean Products Company (M). Springfield: Illinois Soy Products Company (M). Taylorville: Allied Mills, Inc. (M).

“Indiana: Decatur: Central Soya Company, Inc. (L)\*. Indianapolis: Evans Milling Company (M). Lafayette: Ralston Purina Company (M). Marion: Hoosier Soybean Mills, Inc. (M). Mellott: Knowles and Sons, Processors (S). Windfall: Elevators and Mills, Inc. (S).

“Iowa: Cedar Rapids: Honeymead Products Company (M)\*. Cedar Rapids: Iowa Milling Company (M).

Centerville: Standard Soybean Mills (M). Clinton: Clinton Company (M)\*. Des Moines: Spencer Kellogg and Sons (M). Des Moines: Swift and Company (M). Fayette: Wilbur Bell, Inc. (S). Fort Dodge: Plymouth Processing Mills (M). Gladbrook: Central Iowa Soybean Mill (S). Iowa Falls: Ralston Purina Company (M). Quimby: Simonsen Soybean Mill (M). Sioux City: Sioux Soya Company (S). Waterloo: Soy Bean Processing Company (M).

Kansas: Emporia: Kansas Soy Bean Mills, Inc. (M).

“Kentucky: Henderson: Ohio Valley Soy Bean Cooperative Association (M). Louisville: Buckeye Cotton Oil Company (L)\*. Owensboro: Owensboro Grain Company (S).

“Michigan: Dearborn: Ford Motor Company (M)\*. Milan: Ford Motor Company (S)\*. Saline: Ford Motor Company (S)\*.

Minnesota: Mankato: Mankato Soya Products Company (S). Minneapolis: Archer-Daniels-Midland Company (S).

“Missouri: Galesburg: Spring River Mill (S). St. Joseph: Dannen Mills (M). St. Louis: Ralston Purina Company (M). Fremont: Pete Marr Soybean Processing Company (S). Omaha: Allied Mills, Inc. (M).

“New York: Buffalo: Spencer Kellogg and Sons (M). Oswego: Oswego Soybean Products Corporation (M).

“Ohio: Cincinnati: Drackett Company (M)\*. Circleville: John W. Eshelman and Sons (M). Circleville: Ralston Purina Company (M). Fostoria: Swift and Company (M). Lexington: Berea Milling Company (M). Marion: Old Fort Mills, Inc. (M). New Washington: Ohio Soya Company (S). Painesville: A.E. Staley Manufacturing Company (L). Toledo: Archer-Daniels-Midland Company (L). Toledo: Toledo Soybean Products Company (M). Wooster: Soya Processing Company (M).

“Pennsylvania: Jersey Shore: Pennsylvania Soy Bean Cooperative Association (S).

Tennessee: Memphis: Buckeye Cotton Oil Company (M).

Virginia: Norfolk: Davis Milling Company (S). Portsmouth: Allied Mills, Inc. (M). Portsmouth: I.F. Laucks, Inc. (S).

“Wisconsin: Milwaukee: Archer-Daniels-Midland Company (M).” Address: 1. Principal Chemist, Southern Regional Research Lab., New Orleans; Northern Regional Research Lab.; 2. Senior Chemical Engineer, Northern Regional Research Lab., Peoria, Illinois.

176. **Product Name:** Soybean Oil, and Soybean Oil Meal.

**Manufacturer’s Name:** Archer Daniels Midland Co.

**Manufacturer’s Address:** Fredonia, Kansas.

**Date of Introduction:** 1945 February.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product—Documentation:** *Kansas Business Magazine*. 1945. June. p. 10. A table shows: Archer Daniels Midland

Co., of Fredonia, has been in operation since Feb. 1945. They use a hydraulic press for processing mostly linseed, but also some soybeans. The present plant capacity is 4,200 bushels/day. The number "3,000" is included in the table in the wrong column in a confusing way. It might refer to soybean processing capacity.

*Soybean Digest*. 1946. "Grits and flakes..." Jan. p. 28. "Crushing facilities of the Archer Daniels Midland Co., Fredonia, Kansas, are being doubled so that soybeans as well as flaxseed can be handled. Contract for the work has been let to the Fegles Construction Co., Minneapolis [Minnesota] It is expected that the new facilities, which will cost over \$300,000, will be in operation in 6 months."

*Kansas Business Magazine*. 1947. Aug. p. 8-9.

**177. Product Name:** Soybean Oil, and Soybean Meal.

**Manufacturer's Name:** Honeymead Products Co.

**Manufacturer's Address:** Washington, Iowa.

**Date of Introduction:** 1945 February.

**Ingredients:** Soybeans.

**New Product–Documentation:** *Soybean Digest*. 1945

"Honeymead Products Co. opens new plant at Washington, Iowa." June. p. 14. "The Washington, Iowa, soybean processing and feed mixing plant of Honeymead Products Co. has been in capacity operation for about four months. The latest advance in the solvent extraction method is used in the processing plant, which is practically identical in design to the Honeymead plant at Spencer, Iowa, in operation since 1944. Capacity of each plant is approximately 2,000 bushels a day. The feed plant has a capacity of 50 tons daily and is designed for making a full line of Honeymead cattle, hog, and poultry feeds. Hugo Lensch, formerly purchasing agent for the firm's Cedar Rapids plant, is general manager of Washington operations." A large photo shows the new plant at Washington, Iowa.

*Soybean Digest*. 1945. "Honeymead sells to Cargill, Inc." June. p. 24. Honeymead Products Co. sold its Cedar Rapids plant to Cargill, Inc., effective June 1. Estimated purchase price was 2½ million dollars. "Honeymead will continue in business, keeping its main office in Cedar Rapids and continuing to operate its feed and soybean processing plants at Spencer and Washington, Iowa."

Honeymead Products Co. 1945. "Again... Honeymead does it! Here are the two just completed Honeymead modern plants located at Washington and Spencer, Iowa" (Ad). *Soybean Digest*. Sept. p. 77. At the top of this full-page black-and-white ad is a map of Iowa, with white stars and bold letters showing Spencer (in the northwest) and Washington (in the southeast). In the middle of the ad are two photos showing each of the new plants at Spencer and Washington, Iowa. The bottom third of the ad is text. "The two new Honeymead plants in Washington, Iowa, and Spencer, Iowa, represent the latest advancement in extraction-type soybean plants. They are entirely new

in idea. They are entirely new in method. They are most advantageously located. The result is that Honeymead Soybean Meal is uniformly of the highest quality."

*Soybean Digest*. 1945. Dec. p. 24. "Grits and flakes... from the world of soy: Joe Sinaiko, Cedar Rapids, has bought the new Washington, Iowa, soybean processing plant of Honeymead Products Co. and will continue with expansion of the plant... S.H. Burchfield, plant manager, will remain. Sinaiko is a pioneer Iowa processor."

*Soybean Digest*. 1966. "Honorary life members [American Soybean Assoc.]: Dwayne O. Andreas." Sept. p. 6. From 1938 to 1945 Andreas was "principal executive officer of the family-owned company, Honeymead Products Co., which had soybean processing facilities at Cedar Rapids and Washington, Iowa."

Lauser, Greg C. 1982. "History of Cargill's involvement in the soybean processing industry." Minneapolis, Minnesota. 5 p. Unpublished manuscript. In 1946, Cargill acquired the Washington, Iowa, soybean crushing plant [from Joe Sinaiko].

**178. Bohn, Ralph M.** 1945. Soy flour in the baking industry. *American Society of Bakery Engineers Bulletin* No. 130. p. 504-09. March.

• **Summary:** The question of types of soy flour available to bakers, the use of each type in bakery items, a table of the composition of each type and a few formulas for bakery products in which soy flours are used, are all covered in this Bulletin.

Contents: History of soy flour. Methods of producing soy flour: Full-fat soy flour, solvent extracted (defatted) soy flour, expeller soy flour. Nutritional values of soy flour: Protein. What type of soy flour is preferred in bakery products. Extracted soy flour in bread. Extracted soy flour in yeast doughs. Extracted soy flour in soft cake. High-grade cookies—retail type. Pies. Biscuits and crackers. Pan-greasing. The flavor of bakery products containing extracted soy flour. Formulas. Tables showing the nutritional content of soy flour.

Note: Technically, defatted soy flour "contains less than 1% of fat." Address: Archer Daniels Midland Co., Minneapolis, Minnesota.

**179. Bunnell, D.J.** 1945. Birth and development of a new industry. *Soybean Digest*. March. p. 8-10.

• **Summary:** European companies pioneered the manufacture of solvent extraction plants for soybeans. In the mid-1930s, the first complete plants of this type were imported to the USA from Germany. It took only a few years for the U.S. soybean processing industry to recognize the basic advantages of the solvent extraction process. Today solvent extraction equipment comprises about 22% of U.S. soybean processing capacity.

In 1934, Central Soya Company started with six

expellers which had a capacity of 2,400 bushels per day. In 1937, we imported from Germany an extraction unit having a capacity of 9,000 bushels per day. By this time we had also added four expellers to the original six. Our operation was carried on at one location, namely, Decatur, Indiana. Today we have three plants; one in Illinois, the original, one in Indiana, and one in Ohio. We are operating 38 expellers; the extraction unit has been improved and its capacity increased until now our company has a total daily crushing capacity of 44,000 bushels per day. This is a growth of about 1,800 percent in one decade.”

Note: This is the earliest document seen (Jan. 2009) concerning soybean crushing statistics in the United States.

“The reasons for the many interests to enter the field of soybean processing were divergent in accordance with the special activities of these firms. Old, oil seed processors who dominated the technical [industrial] oil field—such as Archer-Daniels-Midland Co. and Spencer Kellogg & Sons—approached soybeans to round out their complete line of technical oils. Another group which included Central Soya Company, Ralston Purina and Allied Mills had faith in soy protein as an important ingredient to round out their mixed feed manufacturing operations. A third group was made up of edible oil refiners and included A.E. Staley Mfg. Co., Swift & Co., Procter & Gamble, and Durkee Famous Foods, all of whom led the research which opened new uses for soybean oil for edible purposes.

“The last important group to have entered the soybean field have been large flour millers such as General Mills and Pillsbury Flour Mills who were drawn to soybeans now that soy flour is being accepted more generally by the bakery trade. Success in such a short period of time can be attributed to the fact that laboratory research was conducted from so many different viewpoints at the same time.”

The more that soybean processors got to know the soybean, the more products they realized could be made from it: lecithin for many uses; soy flour for bakers, the candy trade, meat packers, U.S. retail stores, and Lend-Lease overseas. In short, companies began to diversify. “Staley, originally oil refiners and corn processors, advertises soy flour in your New York subways. Archer-Daniels and The Glidden Co. find themselves in the mixed feed business, while Spencer Kellogg, technical oil specialists, now distribute shortening to the bakery trade. These are but a few examples of the different avenues into which soybean processors have been led.”

Photos show: (1) Portrait of D.J. Bunnell. (2) Indiana Farm Bureau Cooperative Association extraction plant at Danville, Indiana, constructed during 1944 in a large Quonset hut. Address: Until recently vice president of Central Soya, Inc.

180. *Cedar Rapids Gazette (Iowa)*. 1945. Cargill buys Honeymead C.R. plant: It's two and half million dollar deal.

May 20. p. 25.

• **Summary:** “Announcement was made Saturday night of the sale of Honeymead Products company's Cedar Rapids plant to Cargill, Inc., of Minneapolis, effective June 1.

“Although the purchase price was not disclosed, grainmen estimate” it was about \$2.5 million, including both plant and inventories.

“The feed and soybean processing plant involved in the deal is situated at 850 Tenth street SW. Both companies have been engaged in the feed industry in this territory and the sale marks a major change in the industry. Plans are under way for rebuilding of the Cargill mill at 411 Sixth street NE, which was partly destroyed by fire last fall.”

“D.O. [Dwayne] Andreas has resigned as vice-president of Honeymead and will become general manager of the Cedar Rapids operations of Cargill.”

“Cargill's new plant in Cedar Rapids has about 100 employees.”

181. Kunitz, M. 1945. Crystallization of a trypsin inhibitor from soybean. *Science* 101(2635):668-69. June 29. [6 ref]

• **Summary:** “The presence of a protease inhibitor in soybean has been recently reported by Ham and Sandstedt (1944) and by Bowman (1944).” This paper “deals with the isolation from cold-processed defatted soybean meal of a crystalline protein which inhibits the proteolytic action of trypsin.” The method of isolation is described; it was done using Nutrisoy XXX from ADM, in flake form. Further studies are being conducted on the mechanism of the trypsin-inhibiting action, as well as on its physical and chemical properties.

Note 1. This is the earliest English-language document seen (March 2018) that contains the term “trypsin inhibitor” (or “trypsin inhibitors”) or the term “protease inhibitor” (or “protease inhibitors”) in connection with soybeans.

Note 2. This is the earliest document seen (March 2018) that mentions Kunitz in connection with a protease, or trypsin inhibitor in connection with soybeans.

Note 3. A footnote at the end of the title states: “This work was initiated at the suggestion of Major I.A. Myrsky in connection with his studies on streptococcal fibrinolysin...” Address: The Rockefeller Inst. for Medical Research, Princeton, New Jersey.

182. *Kansas Business Magazine*. 1945. Soybean processing. June. p. 8-10, 22-23.

• **Summary:** This excellent article lists 8 Kansas soybean processing plants and the annual soybean acreage in the state for the past 6 years. It contains much interesting information about Kansas soybean history since 1939.

Photos (p. 8) show: (1) Soybean field of Harry Paris in Ottawa County, Kansas, planted June 15; photo taken Aug. 15. (2) Storage bins and elevator at a Kansas soybean mill. 3. Soybean oil storage tanks. (3) Soybean oil storage tanks. (4) Soybean cake coming from an oil expeller after

the oil is extracted. (5) Bins (house shaped) for soybean storage (140,000 bu capacity). (6) Main barrel of oil expeller showing oil extruding from slits. (7) Cascade of soybeans from car to storage. (8) Filter press to clarify crude soybean oil.

Photos (p. 9) show: (1) Kansas Soybean Mills, Inc., Emporia, Kansas. (2) Kansas Soya Products Inc., Kansas City, Kansas. (3) Soy-Rich Products Inc., Wichita, Kansas. (4) Farmers Union plant, Girard (cooperative).

Tables show: (1) Soybeans harvested for beans in Kansas (Source: Federal-state agricultural statistician): Acreage increased from 8,000 acres in 1939 to 24,000 in 1940, to 47,000 in 1941, to 212,000 in 1942, to a local peak of 244,000 in 1943. Corresponding production and yield figures are also given.

(2) Kansas Soybean Processing Plants: Kansas Soybean Mills, Inc., of Emporia (Ted W. Lord, president), began operation in Nov. 1941—the first soybean processor in Kansas. They now have 3 expellers with an estimated capacity of 1,600 bushels/day. Kansas Soya Products, Inc., Kansas City, Kansas (Ted W. Lord, president), began operation in March 1944. They now have 3 expellers with an estimated capacity of 2,700 bushels. Forbes Bros. in Topeka has 1 expeller with 400 bushels capacity; temporarily operating on corn; no starting date is given. J.J. Thompson [sic, Thomson] & Son, of Hiawatha, began operation in April 1944. They have 1 solvent plant with an estimated capacity of 900 bushels. Soy-Rich Products, Inc., of Wichita, began operation in Feb. 1944. They now have 3 expellers with an estimated capacity of 2,350 bushels. Farmers Union Jobbing Assn. (a cooperative), of Girard, started operation in April 1945. They now have 1 expeller with an estimated capacity of 600 bushels. Consumers Cooperative Soybean Co., of Coffeyville, Kansas, expect to start operation in June 1945. They now have 2 expellers with an estimated capacity of 1,800 bushels. Archer Daniels Midland Co., of Fredonia, has been in operation since Feb. 1945. They use a hydraulic press for processing mostly linseed, but also some soybeans. The present plant capacity is 4,200 bushels/day. The number “3,000” is included in the table in the wrong column in a confusing way. It might refer to soybean processing capacity.

A chart titled “Uses of the soybean” shows the many different ways in which soybeans can be used.

Gives a brief history of the Lord family in Kansas, and the pioneering work of three generations (C.W. Lord, T.B. Lord, and Ted W. Lord) with grains and soybeans. “The Lord boys had incorporated their business in October 1940 with Ted W. Lord as president, Philip R. Lord as vice-president and secretary, and Richard W. Lord, now in the Army, as vice-president and treasurer.” They started operating Kansas Soybean Mills, Inc. in Emporia in Nov. 1941 with only one expeller that handled 400 bushels/day. Two more units were added to the plant there in 1942, bringing the capacity to 1,600 bushels/day by the summer of that year. “Later

additional grain storage tanks were added.”

With the successful operation of the Emporia plant as a background, the Lord brothers purchased an old mill, including large bins and a large building in Kansas City, Kansas, operating first with two units and then installing a third in March 1944, bringing it to 2,700 bushels daily capacity. The Emporia mill also makes its own brand of feeds for beef and dairy cattle, hogs, sheep and poultry. Mr. Lord sees a bright future for his soybean products after the war; he plans to reach new markets and anticipates “a big demand from export areas.” One big problem is jackrabbits, which jump fences to eat the tender, flavorful beans. Soybean production is expected to “grow as means of combatting rabbits is found...” Note: This March 1944 date is given in the table as the date the company began operation; one must be mistaken.

“The increase in the demand for soybean oil has accompanied the decreased output in cotton oil. Many makers of margarine and shortening are today utilizing soybean oil instead of cotton oil or peanut oil.

Most soybean processing plants are in the eastern half of Kansas since most of the soybeans are produced east of the Flint Hills. In 1944, counties with the largest production are: Cherokee—277,920 bushels, 23,160 acres; Anderson—220,480 bushels, 13,780 acres; Franklin—216,770 bushels, 12,980 acres.

183. *Soybean Digest*. 1945. Honeymead Products Co. opens new plant at Washington, Iowa. June. p. 14.

• **Summary:** “The Washington, Iowa, soybean processing and feed mixing plant of Honeymead Products Co. has been in capacity operation for about four months. The latest advance in the solvent extraction method is used in the processing plant, which is practically identical in design to the Honeymead plant at Spencer, Iowa, in operation since 1944. Capacity of each plant is approximately 2,000 bushels a day.

“The feed plant has a capacity of 50 tons daily and is designed for making a full line of Honeymead cattle, hog, and poultry feeds.

“Hugo Lensch, formerly purchasing agent for the firm’s Cedar Rapids plant, is general manager of Washington operations.”

A large photo shows the new plant at Washington, Iowa.

184. *Soybean Digest*. 1945. Grits and flakes... from the world of soy: Uses of soy flour. July. p. 22.

• **Summary:** “The question of types of soy flour available to bakers, the use of each type in bakery items, a table of the composition of each type and a few formulas for bakery products in which soy flours are used, are all covered in Bulletin 130 of the American Society of Bakery Engineers, prepared by Ralph M. Bohn, Archer-Daniels -Midland Co., Minneapolis [Minnesota]. A copy of this valuable bulletin

can be obtained on request to the secretary, Victor E. Marx, 1541 Birchwood Ave., Chicago 26, Illinois, if a 3¢ stamped addressed envelope is enclosed.”

185. *Soybean Digest*. 1945. Soybean plants of Archer-Daniels-Midland Co. Aug. p. 13.

• **Summary:** A half-page photo collage shows the company’s soybean processing plants located at Decatur [Illinois], Chicago [Illinois], Toledo [Ohio], Milwaukee [Wisconsin], and Buffalo [New York], and the interior of the home office in Minneapolis [Minnesota].

“The firm has a record of 106 years of service to the vegetable oil, feed and processed food industries. The biological research and development laboratory, one of the country’s largest, is under the able direction of Dr. J.W. Hayward, well known for his work on the nutritive value of soybean oil meal.” Address: Minneapolis, Minnesota.

186. Archer-Daniels-Midland Co., Soybean Division. 1945. Processors... (Ad). *Soybean Digest*. Sept. p. 84.

• **Summary:** In this ½-page ad a photo shows a man’s hand, against a dark background, with the palm facing upwards filled with soybeans. The small company logo shows an archer in a circle. Address: Roanoke Building, Minneapolis, Minnesota.

187. Honeymead Products Co. 1945. Again—Honeymead does it! Here are the two just completed Honeymead modern plants located at Washington and Spencer, Iowa (Ad). *Soybean Digest*. Sept. p. 77.

• **Summary:** At the top of this full-page black-and-white ad is a map of Iowa, with white stars and bold letters showing Spencer (in the northwest) and Washington (in the southeast). Cedar Rapids and other major cities is shown in smaller black letters. In the middle of the ad are two photos showing each of the new plants at Spencer and Washington, Iowa. The bottom third of the ad is text.

“The two new Honeymead plants in Washington, Iowa, and Spencer, Iowa, represent the latest advancement in extraction-type soybean plants. They are entirely new in idea. They are entirely new in method. They are most advantageously located. The result is that Honeymead Soybean Meal is uniformly of the highest quality.

“Equally new is the Honeymead equipment and laboratory control in these plants for mixing proteins, minerals, vitamin sources and Dextrose that go into scientifically balanced Honeymead mixed feed supplements. The result must be Honeymead Balanced Proteins of greatest feeding efficiency and feeding economy.

“What this means to soybean growers: As the production and number of Honeymead plants is increased, as more and more livestock feeders and poultry raisers feed Honeymead Balanced Proteins—the Honeymead Products Company will become a constantly growing outlet for soybeans, will play

an more important part in the expansion of the great soybean industry.” Honeymead is “proud to be listed among the membership of the American Soybean Association.”

188. Corman, L.B.; Hayward, J.W. 1945. Soybean products for dairy cattle. *Soybean Digest*. Oct. p. 12-13.

• **Summary:** The article begins: “Feed comes before food in our national economy. To the dairy farmer this means that soybean oil meal must be fed before the nation and peoples of the world can have milk and butter.” During World War II, the U.S. worked to become self-sufficient in oils and fats. The great demand for soybean products resulted in steady increases in the farm price of soybeans—which rose from the 1935-39 average of \$0.95 per bushel to \$2.13 as of 15 March 1945. With this favorable price, U.S. farmers currently harvest about 75% of their planted soybean acreage for soybeans as seed or grain, the majority of which ends up being processed. During 1944, soybean meal constituted about 40% of all the oilseed meals consumed by dairy cattle in the USA.

A portrait photo shows J.W. Hayward. Address: Members Soybean Research Council; ADM.

189. *Soybean Digest*. 1945. Archer-Daniels-Midland laboratory. Oct. p. 14.

• **Summary:** This new 40,000 square foot research laboratory is in Minneapolis, Minnesota. Biological research and development on soybean products will be under the personal direction of Dr. J.W. Hayward. Research on soybean oil and lecithin in the paint and industrial fields will be directed by S.O. Sorensen.

190. *Soybean Digest*. 1945. New soybean plant at Mankato, Minnesota. Nov. p. 33.

• **Summary:** S.M. Archer, president of the Archer-Daniels-Midland Co., Minneapolis, Minnesota, has announced plans to build a new feed concentrate mixing and soybean processing mill on the north outskirts of Mankato, Minnesota. The new plant will be known as the “Mankato mills division of Archer-Daniels- Midland Co.” P.L. Kimble will be general manager of the division.

Besides the mixing and processing plant, elevator space will be constructed with a capacity of 500,000 bushels of soybeans and ingredients. The plant is expected to be completed in early 1946.

Note: Construction of this plant was delayed until 1950.

191. *Soybean Digest*. 1945. Brierley heads soy flour group. Dec. p. 45.

• **Summary:** A photo shows R.G. Brierley, who was “recently elected to succeed E.J. Dies as president of the Soy Flour Association. Brierley is manager of the soy products division of Archer-Daniels-Midland Co. and the Commander-Larabee Milling Co. of Minneapolis,



Minnesota. He has been a member of the soy flour advisory committee of the War Food Administration in Washington [DC] and has played an active part in the government's program for utilizing soy products for foreign relief feeding. The Soy Flour Association represents all the major processors of soy flour in the country."

192. Eastman, Whitney H. 1946. The future of the soybean industry in the United States. *Chemurgic Digest*. Jan. 15. p. 33-34.

• **Summary:** Discusses the reasons for the phenomenal and stable growth of the soybean industry in America but raises two key questions about the crop's future following deregulation following World War II: "(1) Will the demand for soybean products continue to expand, and (2) Can the domestic soybean industry compete under a free economy with competitive products of domestic and foreign origin."

The author was formerly vice president of Archer Daniels Midland Company, in charge of soybean operations. He organized the National Soybean Processors Association and served as its president for a number of years. Address: Chemical Div., General Mills, Inc., Minneapolis, Minnesota.

193. Ontario Retail Feed Dealers' Association. 1946. Year book, 1944-45. Toronto, Canada. 91 p. Undated.

• **Summary:** On page 11 is a full-page ad that reads: "Toronto Elevators Limited. Toronto. Montreal. Grain. Linseed oil and meal. Soy bean oil and meal. Master Feeds." Inside the diamond-shaped logo is the word "Telco" and a drawing of many large grain elevators. A photo shows the same large elevators; on them is written "Master Feeds." The book contains the name, address, and phone number of many retail dealers. No such information is given for Toronto Elevators.

On page 3 is a list of the Association's officers for 1944-1945, and another list for 1945-46. The president for both terms was W.M. VanSickle of Campbellville.

Note 1. This is the earliest document seen (Aug. 2019) stating that Toronto Elevators Ltd., in Canada, is processing soybeans.

Note 2. Letter from Dave Duttonham, Executive Vice-President of the Ontario Grain & Feed Association in Ontario. 1997 March 3. His Association owns this Year Book. Looking at page 3, he would guess that was published in about January or February of 1946. Address: Toronto, Canada.

194. Archer-Daniels-Midland Co. 1946. Archer Quality soybean processors (Ad). *Soybean Digest*. April. p. 28.

• **Summary:** This half-page ad looks like a bronze plaque.

The upper half features the Archer logo, with a Robin Hood-like figure about to shoot an arrow from a bow. Across the bottom is written: “Creating new values from America’s harvests.”

Note 1. This is the 2nd earliest document seen (July 2020) that contains the phrase “Creating new values from America’s harvests.” The earliest appeared in the March 1946 issue, p. 34. This ad also appeared in the May issue, p. 28.

Note 2. Later publications show that this phrase / tagline subtly refers to ADM’s active interest in chemurgy and in industrial utilization of farm crops.

195. National Soybean Processors Assoc., Soybean Research Council. 1946. Proceedings—Conference on Flavor Stability in Soybean Oil. Chicago, Illinois. 98 p. Held 22 April 1946 at the Bismarck Hotel, Chicago, Illinois. [53 ref]

• **Summary:** This historic meeting—the first ever to discuss the flavor stability of soybean oil—is held under the auspices of the Soybean Research Council, National Soybean Processors Association.

In his introductory remarks (p. 2-3), Edward J. Dies, chairman of the board, National Soybean Processors Association, Edward J. Dies, described the purpose of the meeting and made a plea for a joint effort: “I cannot too strongly emphasize the economic advantages of a rapid solution of the problem of flavor stability in soybean oil and soybean oil products. This is essential as a means of increasing the nation’s supply of high grade edible fats. Solution of this problem also should ultimately lower the average cost to the consuming public by reason of greater ease in handling by the various manufacturing units involved.”

“This meeting today was a deliberate move to bring together the best research minds in the nation who are engaged in work on this subject. The basic hope has been that we might be able to facilitate a free exchange of ideas and subsequently promote special collaboration among the workers engaged in this field. It is my humble opinion that the success of the conference will depend upon the degree to which those present are willing to exchange knowledge and viewpoints on this subject which would prove of benefit to all, and, moreover, to the extent that the several laboratories engaged in research on the problem are willing to cooperate.”

“Any advantage to an individual or a corporation in attaining a solution before the answer were generally known generally would be of only temporary and transitory value. It would appear to be a problem of general interest, and one whose solution could be brought about speedily through the composite talents of the group, and by reason of free and open exchange of ideas and recommendations.”

The 28 attendees, listed alphabetically, included: O.H. Alderks (The Procter and Gamble Co.), H.C. Black (Swift

and Co.), R.A. Boyer (The Drackett Co.), G.N. Bruce (Durkee Famous Foods), John C. Cowan (Northern Regional Research Lab.), B.F. Daubert (Univ. of Pittsburgh), Edward J. Dies (National Soybean Processors Assoc.), Maurice Durkee (A.E. Staley Mfg. Co.), Herbert J. Dutton (Northern Regional Research Lab.), Egbert Freyer (Spencer Kellogg and Sons, Inc.), Calvin Golumbic (Univ. of Pittsburgh), Warren Goss (Northern Regional Research Lab.), Arne Gudheim (Lever Brothers), J.K. Gunther (Central Soya Co., Inc.), Fred Hafner (Archer-Daniels-Midland Co.), R.G. Houghtlin (National Soybean Processors Assoc.), H.T. Iveson (The Glidden Co.), J. Jakobsen (General Mills, Inc.), N.F. Kruse (Central Soya Co., Inc.), Herbert W. Lemon (Ontario Research Foundation, Toronto, ONT, Canada), Herbert E. Longenecker (Univ. of Pittsburgh), Ralph H. Manley (General Mills, Inc.), Karl F. Mattil (Swift and Co.), R.T. Milner (Northern Regional Research Lab.), W.W. Moyer (A.E. Staley Mfg. Co.), F.W. Quackenbush (Purdue Univ.), H.E. Robinson (Swift and Co.), J.H. Sanders (The Procter and Gamble Co.), L.A. Spielman (The Glidden Co.). Contents:

Contents: Introductory Remarks, by Edward J. Dies, Chairman of Board, National Soybean Processors Association

The Economic Significance of Soybean Oil Flavor Stability, by H.E. Robinson, Assistant Director of Research, Swift and Company, Chicago

The Practical Evaluation of Flavor Stability, by O.H. Alderks, Associate Director, Chemical Division, The Procter and Gamble Company, Ivorydale, Ohio

The Possible Relationship of Iso-Linoleic Acid to Flavour Stability in Hydrogenated Linseed and Soybean Oils, by Herbert W. Lemon, Research Fellow, Ontario Research Foundation, Toronto

Some Observations on the Type of Reaction Effecting Flavor Stability in Soybean Oil, by H.C. Black; Research Chemist, Swift and Company, Chicago

A Review of Research Activities of Procter and Gamble Company on the Flavor Stability of Soybean Oil, by J.H. Sanders, The Procter and Gamble Company, Ivorydale, Ohio

The Significant of Temperature and Light as Well as Iodine Value on the Flavor and Odor Stability of Processed Soybean Oil, by Arne Gudheim, Research Department, Lever Brothers, Cambridge, Mass.

Flavor Stability in Soybean Oil and Soybean Flours, B.F. Daubert and Calvin Golumbic, University of Pittsburgh

The Relationship of Phospholipids to Flavor Stability in Soybean Oil. I. Evaluation of German Water Washing and Citric Acid Treatments, by Herbert J. Dutton, Helen A. Moser, and John C. Cowan, Northern Regional Research: Laboratory, Bureau of Agricultural and Industrial Chemistry, U.S. Department of Agriculture, Peoria, Illinois

General Discussion, Led by Herbert E. Longenecker, Dean of the Graduate School and Professor of Biochemistry,

University of Pittsburgh

Bibliography and Abstracts of the Literature on Flavor Stability in Fats and Oils, Prepared by Miss Margaret Hilligan, Research Librarian, General Mills Research Laboratories, Minneapolis, Minnesota

Note: Between April 1946 and April 1958 the Soybean Research Council of the National Soybean Processors Association sponsored twelve 1-day conferences or symposia at which papers were presented concerning "flavor stability in soybean oil" by leading researchers in the field. An open discussion followed each paper. These conferences were important in solving the problem of off-flavors in soybean oil, which was generally considered the biggest problem facing this oil and the industry that made it. Great progress was made during these 12 years and, largely as a result, soy oil came to be the leading edible oil in the USA. Address: [3818 Board of Trade Building, Chicago, Illinois].

196. Carlson, Shirley C.; Hafner, F.H.; Hayward, J.W. 1946. Effect of soy flour and non-fat dry milk solids in white bread on the nutritional quality of the protein as measured by three biological methods. *Cereal Chemistry* 23(3):305-17. May. [27 ref]

• **Summary:** Supplementation of wheat flour with 3-5% soy protein in the form of soy flour. "All the methods used showed that the proteins of the two white soy breads and the two white milk breads were superior in nutritional quality to the protein of white water bread." The experimental data below demonstrate the similar nitrogen balance values of breads made with soy flour and dry milk solids:

White Bread: True digestibility 93%. Biological value 39%

3% White Soy Bread: True digestibility 95%. Biological value 46%

3% White Milk Bread: True digestibility 94%. Biological value 46%

5% White Soy Bread: True digestibility 92%. Biological value 51%

6% White Milk Bread: True digestibility 94%. Biological value 49%

Whole Wheat Bread: True digestibility 93%. Biological value 46%. Address: Archer-Daniels-Midland Company, Minneapolis, Minnesota.

197. *Staley Journal (Decatur, Illinois)*. 1946. Technicians work with soy flour. May. p. 31.

• **Summary:** "With their goal the standardization of all soy flours, members of the baking committee of the Soy Flour association spent a week recently working together in the Staley bakery laboratories. Meetings for this collaborative work have been scheduled for intervals to cover a period of several months. During the time they are together the technicians work on the problems of soy flour in bread, rolls, sweet goods, cakes, biscuits and crackers. By so working

together they hope to standardize their products, claims and directions for use in various bakery products.

"At these meetings the members make bread, cakes, sweet rolls and other bakery products with and without soy flour, using various formulae and methods of mixing and handling. The resulting products are judged and scored, usually by an outside expert.

"The members of this committee—all bakery technicians—are Ralph M. Bohn, Archer-Daniels-Midland Co., Minneapolis; Homer W. Kuehn, Central Soya Co., Fort Wayne, Indiana; Floyd Crego, Spencer Kellogg Sons Co., Buffalo [New York], and Larry Trempel, A.E. Staley Mfg. Co., Decatur. Harold Grabill, of the Glidden Co., who was a member of the committee, died recently. A.E. Ledger, of the Soy Flour Association, Chicago, also worked with the committee in Decatur.

A one-third page horizontal photo shows men standing between an oven and a table topped with baking pans.

Caption: "Soy flour technicians view cakes as they come from the oven. They are Floyd Crego, A.E. Ledger, Ralph Bohn, Larry Trempel and Homer Kuehn."

198. McWethy, John A. 1946. Soybean success: War boom continues as many plants expand, bring out new products. Examples: Meat flavor, wool-like fibre, bottle cap adhesive, soymilk cheese. St. Louis meeting draws 400. *Wall Street Journal*. Aug. 31. p. 1.

• **Summary:** This article is about the 3-day meeting of the American Soybean Association in St. Louis, Missouri. The soybean industry thrived during the depression, more than doubled in size during World War II, and is now continuing to grow. The A.E. Staley Manufacturing Co., America's largest soybean processor, has just started construction of a new \$1 million plant that will turn soybeans into monosodium glutamate (MSG), making one million pounds a year. MSG has been previously made on a small scale in the USA from wheat, but Staley's plant will be the first to make it on a large scale from soybeans.

The Drackett Co. in Cincinnati is putting the finishing touches on a commercial plant that will make a wool-like fibre from soybeans. Robert A. Boyer, the firm's research director, said the new fibre will be used mostly for blending with rayon. He thinks it may sell for less than wool.

ADM, one of America's four largest soybean processors, earlier this year completed a plant to make a "whipping agent" from the versatile soybean; it can replace egg albumin, which is much more expensive.

Dr. Harry W. Miller, president of the International Nutrition Laboratory (Mt. Vernon, Ohio), "started making soybean products in Shanghai, China, in 1935. Bombed out in 1937 by the Nips [Nipponese = Japanese], he came to this country and began making similar products here in 1939. Now his firm does a \$500,000 a year business and could do a lot more if sugar and other ingredients used with soybeans

were available.” His most popular items are [soy] milk, cutlets, and canned green soybeans. He says the milk tastes “rather like malted milk and is especially good for infants and others allergic to animal milk. His company has also developed a cheese made from soymilk [tofu], a prepared mix for ice cream from the soymilk, and “albumen sheets” [yuba], which are very popular in China.

These sheets aren’t much thicker than a piece of paper and are used in China to make the layers of a loaf filled with mushrooms. The Chinese also use soybeans [yuba] to make products that taste like both fish and chicken. In American kitchens, an excellent substitute for butter can be made “by combining soya oil, soya milk,” carotene oil for color, and salt.

One big American breakfast cereal maker is said to be planning to introduce a “soya flake cereal soon, similar in appearance to cornflakes. Another may soon market a puffed soyabean cereal, a third may introduce a cooked cereal made from soybeans, oats and wheat.”

General Mills is building a factory for producing a synthetic resin from soybeans—a product developed at the Northern Regional Research Laboratory in Peoria, Illinois. Dr. G.E. Hilbert, NRRL’s director, says this new resin shows “considerable promise as a protective coating and as a heat-sealing and moisture-proofing agent.

During the past few years, soybean processors have been switching to the solvent extraction systems, from the expeller system, for obtaining oil from soybeans. Most newer plants use hexane solvent. The advantage of the solvent system is that it removes all but about half of one percent of the oil, compared with 3½% to 5% left in the meal when expellers are used. The meal currently sells for 3 cents/lb compared with 11.75 cents/lb for the oil.

NRRL has recently developed a process that uses alcohol instead of hexane. This yields superior “soyflour.” Before the war, production of soyflour was 25 million lb/year; this year it is expected to top 400 million lb. Roth Products Corp. of Chicago has already used 6 million pounds of soyflour this year in its dehydrated soups, baked goods, pancake flour mixes, and sausage filler.

The soybean industry (especially the NRRL) is also working to make soybean oil more stable. It “has a tendency to develop a grassy or painty flavor on standing.” A process obtained from Germany “goes a long way toward preventing the development of these objectionable flavors.”

The Lincoln soybean variety, developed at the U.S. [Regional] Soybean Laboratory at Urbana, Illinois, and first made available to farmers during the war, is playing a major role in increasing yields. Today farmers in the corn belt are getting 25-30 bushels/acre with Lincoln, compared with only 15-16 bushels/acre in the early 1920s with varieties then

available. Moreover, today’s soybeans contain 20-21% oil compared with only 15-17% about 20-25 years ago.

199. *Soybean Digest*. 1946. Grits and flakes... from the world of soy: Research work of Archer-Daniels-Midland Co., Minneapolis [Minnesota] soybean processors, was praised by Congressman Frank B. Keefe of Wisconsin... Aug. p. 24.

• **Summary:** “... in hearings before a House appropriations subcommittee. The amount of money the firm spends on research is ‘terrific,’ said Keefe.”

200. Collins, Jimmy. 1946. Company converts soybeans into ‘cream’ whip. *Buffalo Evening News (New York)*. Sept. 18.

• **Summary:** “The Rich Products Corporation, 1149 Niagara St., formed only a year ago, has hit the post-war consumer market with a new whipping cream derived from soybeans. Demand is exceeding production. The product already is being marketed in 30 states, Alaska, Hawaii and Bermuda, and will be distributed in other areas.

“Headed by the youthful Robert E. Rich, the company markets the soybean cream under the trade name of ‘Whip Topping.’ The product consists of soy protein, vegetable fat, carbohydrates, salt, flavoring and coloring. The soybean cream, packed in half-pint cartons, whips exactly as regular cream. It puffs up quickly to triple its bulk and may be used for dressing up pies and cakes and other delicacies.

“The company has spent nearly \$60,000 for new plant facilities and machinery to increase production. Mr. Rich said it is the nation’s only producer of soybean cream.

“We are producing approximately 1,000,000 half-pints a month but we expect we will have to step up production



further in the near future,' Mr. Rich said. 'Our plant is working 24 hours a day, seven days a week and employs 47 workers.'

"Mr. Rich also is owner of the Wilber Farms Dairy, which is housed in the building in front of the structure occupied by Rich Products.

"Mr. Rich said the volume of sales of the soybean product already exceeds milk sales by the dairy."

A photo shows Robert Rich and employee Marshall Golding standing next to a mixing vat. Rich is examining a temperature gauge as Golding "dumps a 50-pound cake of soy fat into a pasteurizer containing soy milk." The caption reads: "Soybeans offer competition for 'Bossie.'"

Note: In the early years, when Rich Products Corp. used soy protein as the protein source in its non-dairy products, it obtained the protein from defatted soybean flakes purchased from the Archer-Daniels-Midland Co. (ADM). Rich then used hot water to extract the soy protein from the flakes. In effect, he was using isolated soy protein as the protein source for his whip topping.

201. Eastman, Whitney H. 1946. The growing importance of the soybean in our national economy. *Soybean Digest*. Sept. p. 21-22.

• **Summary:** Editor's introduction: "Mr. Eastman is president of the chemical division of General Mills, Inc., and formerly vice president of Archer-Daniels-Midland Co., in charge of soybean operations. He organized the National Soybean Processors Association and served as its president for a number of years.

"Much has been spoken and written during the past 20 years about the economic importance of the soybean crop in this country. Conservative, courageous and fearless men have expressed their views. They have received the cold facts as they know them, based on actual experience with some phase or segment of the industry.

"Agronomists, soybean growers, industrialists, scientists and economists have all spoken or written favorably of their experience with the crop. However, during this 20-year period in which the crop has been commercially grown and utilized, there has been an unusual amount of unsolicited propaganda by journalists, promoters and publicity seekers. The wonder bean of the orient has been romanced and given much undeserved credit for properties it does not possess.

"The crackpots and dreamers have shouted vociferously about the virtues and properties of the magic bean. Some of this propaganda has been disseminated by overenthusiastic, 'get rich quick' newcomers in the business.

"Great harm has come to the industry because of this excessive applause. It has been difficult for the consuming public to evaluate the statements and claims made by this vociferous group of careless, irresponsible people. It has likewise been a real task for those who have accepted leadership in the industry to develop a sound long-range

program, because of all the confusion caused by a strong crosscurrent of public opinion.

"Scare Crows: In addition to all this disturbing propaganda, some small but influential groups have hung out a few economic 'scare crows' to stifle sound and justified enthusiasm or to otherwise further their own selfish interests. These 'scare crows' are but straws in the wind to forewarn us of things to come. Who knows but that our future enemies—perhaps unknown to us now—are at work among us laying plans to effectuate economic strangulation in a possible future world conflict?

"If there was ever a need in the history of this nation for a sound, unified national program to safeguard our domestic oilseed crops for the purpose of insuring national security and independence, we need such a program now. Tomorrow may be too late.

"The importance of vegetable oils as well as vegetable protein concentrates in helping to win World Wars I and II is well known to the economic and military strategists of every country on the globe. The importance of our domestic soybean crop in helping to win the last World War is equally well known.

"What are we going to do to safeguard this national asset? It seems to me it has already been demonstrated by our experience with the soybean crop during the past 20 years that this crop has attained a high ranking place in our agricultural and national economy.

"Many people are prone to believe that without the two World Wars the soybean industry would never have developed in this country and that it will now shrink back to a relatively unimportant place in postwar years. The simple facts are incontrovertible and refute any such line of thinking.

"Prior to the first World War, the soybean crop was already establishing itself firmly in this country, primarily as an additional crop in our agricultural crop rotation program. During the period between the two great World Wars, the domestic soybean industry, under proper tariff protection—to avoid disastrous foreign competition from the cheap labor abroad—grew up in its own right as an important segment of our agricultural economy and as a vital part of our national economy.

"It is true that the last World War did provide impetus to the soybean industry much the same as it did for many other industries. But what reason have we to believe that the soybean crop or the industry as a whole will shrink back to an unimportant segment of our total oilseed industry in future years?

"Again the economic facts seem unmistakably clear, if we are willing to recognize them and do not try to circumvent them. We must be sure, however, that there are not some obscure or yet unforeseen economic or political factors lurking in the shadows of our international relations.

"Broad Base: The soybean crop has a broad utility

base. No other oilseed crop can be utilized for such a diversification of uses. Probably no other oilseed crop affords the same opportunity for research and the development of new and useful products for all mankind. Untold possibilities are at once evident when one realizes that the soybean contains a most unique and unusual combination of protein, carbohydrates, fat, vitamins, minerals, enzymes and phospholipids. This varied composition of the soybean, combined with the easy accessibility of these natural treasures, places soybeans in a pre-eminent position among our oilseed crops as an economical source for several basic ingredients for processed food products and a wide variety of manufactured products for the technical trades.

“Assuming that we are not going to permit this country to become wholly dependent upon the other oilseed and nut producing countries of the world for our national requirements of vegetable oils and vegetable protein concentrates either in time of peace or war, what oilseed crop are we going to grow as the one major crop to insure national economic security? The answer seems to point to soybeans.

“There are several basic underlying reasons why the soybean crop appears to answer most if not all of the prerequisites for an all-purpose oilseed crop in this country. Soybeans can be grown profitably throughout a rather extensive area in competition with other oilseed crops and our heavy-yielding grain and cereal crops.

“Increasing numbers of smart farmers have learned from their county agents, their agronomist advisors, the agricultural colleges and from their own book of experience in growing soybeans over a period of years, that the net returns from the crop cannot be accurately measured by the price per bushel paid for soybeans in the marketplace at harvest time.

“Noticeable benefits are derived from the companion or synergistic relationship of certain crops grown in rotation. Progressive and prosperous farmers, having observed this agronomic phenomenon, have learned to measure their overall net farm income, not for one single crop or for a single crop year, but for their total farm income for the period of the crop rotation cycle established for a particular farmer in a specific locality.

“The crop has proven itself to be the safest oilseed crop from the standpoint of resistance to disease, insect pests and adverse weather and is exceedingly well adapted to our soil and climatic conditions over an extensive area. The soybean is economically well proportioned in its percentage relationship of oil and protein, making it possible for industry to pay producers a relatively high price for soybeans in relation to the value of the finished products.

“The oil is an all-purpose oil used to equal advantage in the food and technical [industrial] fields, and the protein is likewise an all-purpose protein which finds widespread use as food for humans and animals and as a valuable low-cost product in industry. As further unmistakable evidence that

the soybean crop has a broad utility value, there has never been a sufficient supply of soybeans to satisfy the demand during the last 20 years.

“The use for soybean products, the industrial plants to produce them, and the technology in industry have always kept ahead of soybean production. There are no serious danger signals ahead which would lead us to conclude that the demand for soybean products is going to decline, but on the contrary there is growing evidence and confidence that the demand for soybean products will continue unabated. There is likewise a growing feeling on the part of a widespread group of agricultural and industrial economists that the demand for soybean products will soon exceed the demand for all other domestic oilseed products combined. The feeling is persistently strong that this broad demand for soybean products can be met at price levels which will permit the soybean processor to pay the grower an attractive price” (Continued). Address: President, Chemical Div., General Mills, Inc.

202. Hayward, J.W.; Corman, L.B. 1946. Utilization of soybean oil meal for livestock and poultry. *Soybean Digest*. Oct. p. 10-11.

• **Summary:** “This paper was presented by Dr. Hayward at the recent convention of the American Soybean Association at St. Louis” [Missouri]. Contents: Introduction. Grains out of balance. Compositions and new developments.

Tables show: (1) Production of soybean cake and meal in the United States, 1940-41 to 1944-45 (in 1,000 tons). Source: War Food Administration. Production increased from 1,543.4 in 1940-41 (29.35% of the production of all oil seed meals) to 3,672.4 in 1944-45 (52.56% of the production of all oil seed meals).

(2) Composition of soybeans and soybean oil meal. There are columns for: (a) Nutrients. (b) Soybeans, milling. (c) Midwest varieties. (d) 41 and 43% expeller. (e) 44% extracted. Address: Archer-Daniels-Midland Co.

203. *Soybean Digest*. 1946. Grits and flakes... from the world of soy: Civilian Production Administration has granted Archer-Daniels-Midland Co... Dec. p. 28.

• **Summary:** “... permission to build a \$250,000 plant to process soybean and linseed oils into fatty acids. The project is part of the firm’s 5 million dollar expansion program.”

204. Archer-Daniels-Midland Co. 1946? The story of flax in industry: Film, fibre, feed. Minneapolis, Minnesota. 18 p. Undated. \*

205. Lewis, Jessica H.; Taylor, F.H.L. 1947. Comparative utilization of raw and autoclaved soy bean protein by the human. *Proceedings of the Society for Experimental Biology and Medicine* 64(1):85-87. Jan. [14 ref]

• **Summary:** Why does raw soy bean flour need to be heated?

In 1917 Osborne and Mendel, in a pioneering study, showed that rats fed raw soy bean flour grew more slowly than a control group fed autoclaved soy flour.

In 1936 Hayward, Steenbock and Bohstedt confirmed these findings and suggested that this was not due to a difference in palatability but rather to a deficiency in the raw flour.

Later investigations in the 1940s showed that this increase in biological activity produced by autoclaving the raw flour was due to an increase in the level or rise in the availability of sulfur-containing amino acids. By the 1940s it was clear that autoclaved soy bean flour had a high biological value similar to that of egg white.

But recently another explanation has been put forth to explain the lower biological value of raw soy bean protein. Ham and Sandstedt (1944) isolated a trypsin-inhibiting substance from unheated soy bean flour which they believed was identical to its growth-retarding action.

In 1945 Kunitz isolated this trypsin inhibitor in crystalline form.

This study on humans concluded: "Both raw and autoclaved soy bean protein support positive nitrogen balance in the adult human. 2. Nitrogen retention is about 20% greater with the autoclaved material than with the raw material."

Note: This is the earliest document seen (Nov. 2019) showing that the nutritive value of soybeans for humans is improved by heating. Address: Boston City Hospital & Dep. of Medicine, Harvard Medical School, Boston, Massachusetts.

206. USDA Northern Regional Research Laboratory. ed. 1947. Report of Soybean Industrial Conference held at the Northern Regional Research Laboratory, Peoria, Illinois, February 27-28, 1947. Peoria, Illinois. 23 p.

• **Summary:** "The meeting was attended by representatives of the U.S. Department of Agriculture, the Agricultural Experiment Stations, the soybean growers, the processing industry, and manufacturers of such commercial items as margarine, shortening, and protective coatings. Dr. G.E. Hilbert, Director of the Northern Regional Research Laboratory, welcomed the participants and explained the reasons for holding these sessions. The objective was first to obtain the views of all the representatives of the growers and industrial groups regarding the technological problems which the soybean industry will face during the next five to ten years. Using these problems as a basis, it was desired that the representatives of the various scientific research organizations then could plan the course to be followed in order to find answers to at least the most important of these questions.

"The meeting then was turned over to Dean H.P. Rusk of the Illinois Agricultural Experiment Station who acted as chairman.

"The prepared manuscripts which served as bases for the ensuing discussions will be printed in *The Soybean Digest*" [May through July, 1947].

A discussion which followed many of the papers is summarized in this document. No mention of these discussions appears in *Soybean Digest*.

Note 1. In the paper by Dr. J.W. Hayward titled "Problems in the use of soybean oil meal for feed and soy flour for food," his position is given as "Chairman, Soyfood Research Council."

Note 2. This is the earliest document seen (Sept. 2011) that contains the word "Soyfood." However, Hayward was actually chairman of the "Soya Food Research Council." Address: Northern Regional Research Lab., Peoria, Illinois.

207. Eichberg, Joseph. 1947. Soybean lecithin comes of age (Continued—Document part II). *Chemurgic Digest*. March 31. p. 109-11.

• **Summary:** (Continued): "As previously mentioned lecithin is a vital constituent of cells and plays a part in cell metabolism. It therefore would on theoretical grounds be a desirable ingredient of cosmetic preparations. Indeed, experience has shown that skin creams made with a small percentage of lecithin exhibit greater softening and penetrating properties. So-called 'wrinkle' creams have been compounded with rather high percentages of lecithin. More highly purified or blended grades are desired for use in cosmetics and soaps.

"The bleaching of soybean lecithin can be done without impairing the quality by subjecting the lecithin emulsion as it comes from the centrifuges in the course of its isolation to the action of hydrogen peroxide or dibenzoyl peroxide or both. Complete removal of the carrier of soybean oil may be accomplished through treatment with a selective solvent such as acetone. A grade free from soybean oil is preferred for use in soaps. In brushless shaving creams however excellent results are obtained with the standard commercial grade.

"By the middle 1930's production of soybean lecithin in this country was well underway. The controlling patents were acquired from the German owners by the American Lecithin Company and licenses granted to The Glidden Company and to the Archer-Daniels-Midland Company. When war came, this country was independent of foreign sources for its lecithin supply. Licenses have since been granted to other processors and are available to the industry on uniform terms.

"The shortage of fats which developed during the war and which still persists served to underline the utility of lecithin as a means of getting the utmost value from every pound of fat. Lecithin entered directly into the manufacture of certain war materials. It was specified in an important type of protective coatings. It served the G.I. in his chocolate beverage powder and it counteracted rancidity in the lard shipped overseas to the armed forces.

“Before the war progressive bakers had been experimenting with lecithin. They found that it caused a better mixing of ingredients, a shorter, richer product. Especially notable were the effects in bread where 0.15 percent of soybean lecithin gives a dryer, smoother handling dough that machines with fewer stickups, and a finished loaf of uniform texture and longer shelf life. Pie bakers and biscuit makers found comparable advantages.

“The scientific literature contained reports from about 1928 describing how lecithin improved macaroni products by reducing disintegration during boiling and enabling manufacturers in some countries to use more of the lower protein flours available to them. This information was never of much interest here because of the high quality of the flours milled from American wheat. Recent experiments have shown, however, that other advantages can be expected and that soybean lecithin will prevent much of the color loss that occurs during preparation of noodle and macaroni products. This loss is attributed to the oxidation of carotenoid pigments contained in the flour.

“The antioxidant effects of lecithin were early recognized. It has been successfully used in vegetable oils, lard and oleo oils, fish liver oils and Vitamin A concentrate and in sulfonated oils, as a rule in small fractions of a percent. The same action has been utilized to control oxidation in dyeing with some textile colors. Various patents have been issued on its use as an inhibitor in lubricating oils. However, in the face of leaded motor fuels lecithin is thought to act more as a solubilizing or peptizing agent than as an antioxidant.

“The emulsifying properties of lecithin act not only through fats but may be employed where water is essentially the only medium. Ice cream and sherbets or water ices afford examples. In general, lecithin promotes the oil-in-water type of emulsion. While the standard commercial grade can be employed to some extent if a suitable pre-mix of fine distribution is prepared beforehand, it is desirable to use a type which will emulsify readily with the mix. The lecithin imparts smoothness, desirable dipping and melt-down properties and in the case of chocolate ice cream not only acts as emulsifying agent for the cocoa butter present in the chocolate but also protects against adverse effects of the alkaloids present, for example on the strength of the gelatin.

“A small amount of fat is added in making various confections. such as caramels. nut brittles, kisses. etc., and when lecithin is present this fat instead of floating around on the surface of the hot batch is taken up and uniformly mixed throughout. Freedom from greasiness. better chewing qualities and longer shelf life result. Most natural fats are a mixture of glycerides of different melting points; when lecithin is incorporated, even as little as .01 percent, these fractions become more compatible. The effect is utilized in compound type shortenings and in winterized salad oils.

“The commercial uses for soybean lecithin far

outripped its use in medicine in spite of earlier interest in the latter. To no small degree this was due to the type of material originally available which was exclusively lecithin of animal origin and also due to the lack of sufficient laboratory and clinical research. Most of the animal lecithin products contained cholesterol as an impurity. Furthermore, the quantities administered were either minimal or entirely inadequate.

“About seven years ago the American Lecithin Company initiated a research program enlisting the assistance of qualified scientists and physicians to study the effects of soybean lecithin in maladies resulting wholly or in part from deranged lipid metabolism. This investigation has also included work on cholesterol imbalance, a factor contributing to hardening of the arteries and heart disease associated with that condition. The refining and processing of many foods extracts. destroys or alters the naturally occurring phosphatides and may account for deficiencies in modern diets. It has been shown that commercial soybean lecithin contains choline and inositol, both of which are regarded as members of the Vitamin B complex and according to animal experiments the minimum daily requirement for choline is rather high.”

“The recovery of soybean lecithin has enhanced the dollar value of the products derived from the soybean and has placed a new tool in the hands of industry and medicine. It seems safe to predict a continued increase in production and consumption.” Address: President, American Lecithin Co., Inc., Elmhurst, Long Island, New York.

208. Archer Daniels Midland Co. 1947. Soybean processors (Ad). *Soybean Blue Book*. p. 63.

• **Summary:** At the bottom of this full-page ad, on a black background, is the ADM logo, showing an archer with a drawn bow in a double circle. In bold letters around the inner circle is written “Archer quality.” No address is given.

209. *Soybean Blue Book*. 1947. Processors of soybeans [USA and Canada]. p. 44-64.

• **Summary:** Processors are listed by state (alphabetically), and within each state alphabetically by city. For each firm is given the officers, brand names, type of processing equipment, processing capacity, and storage capacity. “Information was obtained through questionnaires sent directly to the processing companies.

Arkansas—Blytheville: Swift & Co. Little Rock: Rose City Cotton Oil Mill. West Memphis: Arkansas Mills.

California—Fresno: Oil Seed Products Co. Oakland: Albers Milling Co.

Illinois—Alhambra: Alhambra Grain & Feed Co. Bloomington: Funk Bros. Seed Co. Cairo: Cairo Meal and Cake Milling Co. Cairo: Swift & Co. Champaign: Swift & Co. Chicago: Allied Mills, Inc. Chicago: Central Soya Co., Inc. Chicago: The Glidden Co. Chicago: Spencer

Kellogg & Sons. Chicago: Swift & Co. Decatur: Decatur Soy Products. Decatur: Spencer Kellogg & Sons. Decatur: A.E. Staley Mfg. Co. Galesburg: Galesburg Soy Products Co. Gibson City: McMillen Feed Mills. Kankakee: Bordens Soy Bean Products Co. Mascoutah: Ph.H. Postel Milling Co. Monmouth: Ralph Wells & Co. Nashville: Huegely Elevator Co. Pana: Shellabarger Soybean Mills. Peoria: Allied Mills, Inc. Quincy: Quincy Soybean Products Co. Roanoke: Eureka Milling Co. Rock Falls: Sterling Soybean Co. Springfield: Cargill, Inc. Taylorville: Allied Mills, Inc. Virden: Hulcher Soya Products.

Indiana–Bunker Hill: Ladd Soya Co. Danville: Hendricks County Farm Bureau Co-op. Assn. Decatur: Central Soya Co. Ft. Wayne: Central Soya Co. Frankfort: Swift & Co. Lafayette: Ralston Purina Co. Marion: Hoosier Soybean Mills. Portland: Haynes Soy Products. Rushville: Rush County Farm Bureau Co-op. Assn.

Iowa–Belmond: General Mills, Inc., Chemical Div. Cedar Rapids: Cargill, Inc. Centerville: Pillsbury Mills, Inc. Clinton: Pillsbury Mills, Inc. Des Moines: Spencer Kellogg & Sons, Inc. Des Moines: Swift & Co. Dike: Farmers Cooperative Co. Dubuque: E.E. Frith Co. Eagle Grove: Boone Valley Cooperative Processing Assn. Fairfield: Doughboy Industries. Fort Dodge: Borden's Soybean Processing Co. Fort Dodge: Cargill, Inc. Gladbrook: Central Iowa Bean Mill. Hubbard: Hubbard Soybean Mill, Inc. Iowa Falls: Ralston Purina Co. Manly: North Iowa Cooperative Processing Assn. Marshalltown: Marshall Mills, Inc. Martelle: Farmers Cooperative Elevator. Muscatine: Hawkeye Soy Products. Muscatine: Muscatine Processing Corp. Plainfield: Roach Soybean Mills. Quimby: Simonsen Mill–Rendering Plant. Ralston: Farmers Cooperative Assn. Redfield: Iowa Soya Co. Sac City: Williams Milling Co. Sheldon: Big 4 Cooperative Processing Assn. Sioux City: Sioux Soya Co. Spencer: Cargill, Inc. Washington: Cargill, Inc. Waterloo: Borden's Soy Bean Processing Co. West Bend: West Bend Elevator Co.

Kansas: Coffeerville [Coffeyville]: Consumers Cooperative Assn. Soybean Mill. Emporia: Kansas Soybean Mills, Inc. Girard: Farmers Union Jobbing Assn. Hiawatha: Thomson Soy Mill. Kansas City: Kansas Soya Products Inc. Wichita: Soy-Rich Products, Inc.

Kentucky–Henderson: Ohio Valley Soybean Cooperative. Louisville: Buckeye Cotton Oil. Co. Owensboro: Owensboro Grain Co.

Louisiana–Alexandria: Red River Cotton Oil Co.

Michigan–Concord: Concord Soya Corp. Saline: Soybrands, Inc.

Minnesota–Mankato: Mankato Soybean Products, Inc. Minneapolis: Archer Daniels Midland Co. Minneapolis: Cargill, Inc. Minneapolis: General Mills, Inc. Minneapolis: Spencer Kellogg & Sons, Inc. Preston: Hubbard Milling Co.

Missouri–Kansas City: Ralston Purina Co. Kennett: Hemphill Soy Products Co. Mexico: M.F.A. Cooperative

Grain & Feed Co. St. Joseph: Dannen Grain & Milling Co. St. Louis: Blanton Mill, Inc. St. Louis: Ralston Purina Co. Trenton: Central Farm Products Co.

Nebraska–Fremont: Fremont Cake & Meal Co. Lincoln: Gooch Milling & Elevator Co. Omaha: Allied Mills, Inc. New York–Buffalo: Spencer Kellogg & Sons, Inc. Oswego: Oswego Soy Products Corp.

North Carolina–Clayton: Central Oil & Milling Co. Farmville: Farmville Oil & Fertilizer Co. Hartford: Southern Cotton Oil Co. New Bern: New Bern Oil & Fertilizer Co. North Dakota–Grand Forks: North Dakota Mill & Elevator.

Ohio–Bellevue–Spencer Kellogg & Sons, Inc. Circleville: John W. Eshelman & Sons. Circleville: Ralston Purina Co. Cortland: Richards Milling Co. Delphos: Delphos Grain & Milling Co. Fostoria: Swift & Co. Lexington: Lexington Soy Products Co. Marion: McMillen Feed Mills, Inc. Ohio City: Holland Pioneer Mills, Inc. Painesville: A.E. Staley Mfg. Co. Springfield: Farm Bureau Cooperative Assn. Toledo: Toledo Soybean Products Co. Wooster: Soya Processing Co.

Oklahoma–Oklahoma City: Producers Cooperative Oil Mill.

Pennsylvania–Jersey Shore: Penna Soy Bean Co. South Dakota–Sioux Falls: Western Soybean Mills. Tennessee–Memphis: Buckeye Cotton Oil Co. Tiptonville: West Tennessee Soya Mill, Inc.

Virginia–Norfolk: Davis Milling Co., Portsmouth: Allied Mills, Inc. Portsmouth: Monsanto Chemical Co.

Wisconsin–Janesville: Janesville Mills, Inc.

Canada–Toronto: Dominion Linseed Oil Co. Toronto: Toronto Elevators Ltd. Toronto: Victory Mills, Ltd.

Note: This is the earliest document seen (Nov. 2007) which appears to show clearly that M.F.A. [MFA; Missouri Farmers Association] is now processing soybeans in Mexico, Missouri.

210. *Soybean Blue Book*. 1947. Refiners of soybean oil [in the United States and Canada]. p. 66-67, 69.

• **Summary:** The companies are listed alphabetically by state and within each state by city.

Arizona, Phoenix–Tovrea Packing Co.  
California, Wilmington–Vegetable Oil Products Co., Inc.  
Illinois, Chicago 9–Armour & Co.; Wilson & Co., Inc.  
Louisiana, New Orleans–Southern Cotton Oil Co. (Affiliate of Wesson Oil & Snowdrift, Inc.); Opelousas–Opelousas Oil Refinery.

Massachusetts, Cambridge 39–Lever Bros. Co.  
Minnesota, Minneapolis–Archer-Daniels-Midland Co.; Minneapolis 1–General Mills, Inc.

Missouri, St. Louis 7–The Blanton Co.  
New York, Buffalo–Spencer Kellogg & Sons.; New York 10–C.F. Drew & Co., Inc.; Rochester 13–Distillation Products, Inc.

Ohio, Columbus 10—Capital City Products Co.  
 Oklahoma, Chickasha—Chickasha Cotton Oil Co.  
 Pennsylvania, Philadelphia 7—Bisbee Linseed Co.;  
 Philadelphia 34—C.F. Simonin's Sons, Inc.  
 South Carolina, Marion—Marion Cotton Oil Co.  
 (Affiliate Kershaw Oil Mill, Kershaw, S.C.).  
 Tennessee, Chattanooga—Wilson & Co., Inc.  
 Texas, El Paso—Western Cotton Oil Co.; Sherman—  
 Interstate Cotton Oil Refining Co.  
 Wisconsin, Cudahy—Cudahy Bros. Co.  
 Canada, Toronto—Canada Packers Ltd. (Plants located at  
 Montreal, Winnipeg, Edmonton, and Vancouver); Toronto—  
 Lever Bros. Ltd. (Affiliate Lever Bros. & Unilever Ltd.,  
 London, England).

211. *Soybean Blue Book*. 1947. Soybean processors that  
 make soybean pellets (Document part). p. 46-64.

• **Summary:** In the 1947 issue of the *Soybean Blue Book*,  
 the section titled "Processors of soybeans" (p. 46-64) shows  
 that the following companies make soybean pellets. They  
 are listed alphabetically by state, and within each state,  
 alphabetically by city: California: Oakland—Albers Milling  
 Co. "Albers Quality Controlled" feeds and pellets.

Illinois: Chicago—Central Soya Co. "Master Mix" feeds  
 and pellets. Chicago—Swift & Co. "Swifts" soybean oil meal  
 and pellets. Decatur—Spencer Kellogg & Sons. "Spencer  
 Kellogg's" 44% protein pellets. Decatur—A.E. Staley Mfg.  
 Co. "Staley's" oil meal and pellets. Gibson City—McMillen  
 Feed Mills. "Master Mix" feeds and pellets.

Indiana: Decatur—Central Soya Co. "Master Mix" feeds  
 and pellets. Fort Wayne—Central Soya Co. "Master Mix"  
 feeds and pellets. Rushville—Rush County Farm Bureau Co-  
 op Assn. "Farm Bureau" soybean oil meal, mixed feeds, and  
 pellets.

Iowa: Cedar Rapids—Cargill, Inc. "Cargill-Nutrena"  
 feeds and pellets. Cedar Rapids—Iowa Milling Co.  
 "Honeymead" and "Cremo" feeds and pellets. Centerville—  
 Pillsbury Mills, Inc. "Pillsbury's Best" feeds and pellets.  
 Clinton—Pillsbury Mills, Inc. "Pillsbury" soybean oil meal,  
 feeds and pellets. Des Moines—Spencer Kellogg & Co.  
 "Spencer Kellogg's" 44% Protein Toasted soybean oil meal  
 and pellets. Des Moines—Swift & Co. "Swifts" soybean oil  
 meal and pellets. Eagle Grove—Boone Valley Cooperative  
 Processing Association. "Co-op" soybean oil meal, feeds  
 and pellets. Fairfield—Doughboy Industries. "Doughboy" oil  
 meal, feeds and pellets. Fort Dodge—Cargill, Inc. "Cargill-  
 Nutrena" feeds and pellets. Ralston—Farmers Cooperative  
 Association. "Farmers" soybean oil meal and pellets. Sac  
 City—Williams Milling Co. "Williams" soybean oil meal,  
 feeds and pellets. Sioux City—Sioux Soya Co. "Su Soy"  
 soybean oil meal and pellets. Spencer—Cargill, Inc. "Cargill-  
 Nutrena" pellets and feeds. Washington—Cargill, Inc.  
 "Cargill-Nutrena" pellets and feeds.

Kansas: Coffeetown—Consumers Cooperative Processing

Association. "Co-op" soybean oil meals and pellets.  
 Emporia—Kansas Soybean Mills, Inc. "Sunflower" soybean  
 oil meal, pellets, and feeds. Hiawatha—Thomson Soy Mill.  
 "Scotch" soybean oil meal and pellets. Kansas City—Kansas  
 Soya Products, Inc. "Sunflower" soybean oil meal and  
 pellets. Wichita—Soy-Rich Products, Inc. "Four Leaf Clover"  
 soybean oil meal and pellets.

Minnesota: Minneapolis—Archer-Daniels- Midland  
 Co. "Archer Brand" soybean oil meal, pellets and feeds.  
 Minneapolis—Cargill, Inc. "Cargill-Nutrena" feeds and  
 pellets. Preston—Hubbard Milling Co. "Sunshine" feeds and  
 pellets.

Missouri: Kennett—Hemphill Soy Products. "Circle H"  
 soybean oil meal and pellets. Mexico—M.F.A. Cooperative  
 Grain & Feed Co. "M.F.A. oil meal, feeds and pellets. St.  
 Joseph—Dannen Grain & Milling Co. "Dannen" soybean oil  
 meal, feeds and pellets.

Nebraska: Fremont—Fremont Cake & Meal Co. "Pete  
 Marr" soybean oil meal and pellets.

North Dakota: Grand Forks—North Dakota Mill &  
 Elevator. "Dakota Maid" soybean oil meal, feeds and pellets.

Ohio: Circleville—John W. Eshelman & Sons. "Eshelman  
 Red Rose" soybean oil meal, feeds and pellets. Marion—  
 McMillen Feed Mills, Inc. "Master Mix" feeds and pellets.  
 Ohio City—Holland Pioneer Mills. "Lucky Strike" soybean  
 oil meal, feeds and pellets. Wooster—Soya Processing Co.,  
 "Wooster" soybean oil meal, feeds and pellets.

Oklahoma: Oklahoma City—Producers Cooperative Oil  
 Mill. "Co-op" soybean oil meal and pellets.

South Dakota: Sioux Falls—Western Soybean Mills.  
 "Sioux" soybean oil meal, feeds and pellets.

212. Andrews, W.G. 1947. The soybean—myth or miracle?  
*Paint, Oil and Chemical Review* 110(9):18, 20, 22, 24, 28-  
 30, 32, 34. May 1. [1 ref]

• **Summary:** This very positive and general article about  
 the benefits of soybeans begins with a long excerpt from an  
 article in *Time* magazine (11 Nov. 1940) about Henry Ford  
 swinging an ax against the plastic rear end of a special Ford  
 car.

A portrait photo shows W.G. Andrews. Address: Archer-  
 Daniels-Midland Co.

213. Bird, H.R.; Boucher, R.V.; Caskey, C.D., Jr.; Hayward,  
 J.W.; Hunter, J.E. 1947. Urease activity and other chemical  
 criteria as indicators of inadequate heating of soybean oil  
 meal. *J. of the Association of Official Agricultural Chemists*  
 30(2):354-64. May 15. [7 ref]

• **Summary:** Soybean oil meal, which used to be a relatively  
 minor member of the group of high-protein feedstuffs, is  
 now a major member of that group. Information that was  
 adequate when this meal was commonly fed as 5% of the  
 diet may be inadequate when it constitutes 20-25% of the  
 diet. It is known that both under-heated and over-heated

meals are of inferior nutritive value. Address: 1. Bureau of Animal Industry, Agricultural Research Administration [USDA], Beltsville, Maryland.

214. Carlson, Shirley C.; Herrmann, E.C.; Bohn, R.M.; Hayward, J.W. 1947. A nutritional study of the fortification of graham-type crackers with soy grits, calcium, and several vitamins. *Cereal Chemistry* 24(3):215-24. May. [17 ref]  
 • **Summary:** Graham-type crackers, fortified with soy grits (30% soy grits replaced an equal amount of graham flour, and calcium, riboflavin, niacin, carotene, and vitamin D were added), have nutritional properties that are much better than those of regular graham crackers.

Rats fed the fortified crackers grew at the rate of 2.8 gm per day for the first 8 weeks. All rats were alive and healthy at the end of 26 weeks. However all rats fed regular graham crackers as their *sole* source of foods, lost weight for the first 8 weeks and died at the end of 9-20 weeks.

These studies indicate that the regular graham crackers are deficient mainly in protein, rather than in vitamins and minerals.

Acknowledgment: Thanks to Fred Hafner, a former member of ADM's research staff, for his assistance in the initiation and planning of the nutritional studies. Address: Depts. of Nutrition & Food Research, Archer-Daniels-Midland Co., Minneapolis 2, Minnesota.

215. Hayward, J.W. 1947. Problems in the use of soybean oil meal for feed and soy flour for food. *Soybean Digest*. July. p. 16, 18, 19, 21-22, 24.

• **Summary:** This speech was presented at the Soybean Conference at Peoria, Illinois, in February.

Soy flour projects (p. 22): "These projects were concerned with such things as taste appeal of soy bread after continuous use of it; effect of different levels and of different types of soy flours on the baking qualities of bread; stability of soy flour; insects infesting soy flour during storage; and numerous other types of projects.

"Dr. A.K. Smith here at this U.S. Regional Laboratory [Peoria, Illinois] has done considerable work on the matter of the proper protein factor to be used for soy flour—that is the factor to be used in converting Kjeldahl nitrogen to protein. The National Research Council and consequently the Bureau of Human Nutrition and Home Economics, USDA, are insisting on the factor of 5.7 in contrast to the commonly used factor 6.25. The low factor is unfavorable to soy flour and apparently is not correct. The 6.25 factor is too high, but the one commonly used for similar non-cereal products in the feed and food world. We need the assistance of your Regional Laboratory in establishing the correct factor, which seems to be, according to Dr. Smith and his associates, approximately 5.9.

"Our soy flour industry can certainly use to advantage all the technical assistance you can spare on several current

projects pertaining to soy flour. The following assignments are suggested for your consideration:

"(1) Express numerically some of the specific observable functions of soy flour in baked goods and the like.

"(2) Determine the effect of using special varieties versus present selected milling varieties for the production of soy flour by the methods commonly used by our industry for its manufacture.

"(3) Explore methods of manufacturing soy flour to see if it is economically possible to effect improvements in quality aspects such as thermophilic bacteria content, flavor, color, particle size and certain functional characteristics such as volume, crumb texture and shelf life of baked goods, especially bread.

"(4) Develop a better consumer acceptance for various foods containing proper amounts of soy flour for product quality and improved nutrition."

A small portrait photo shows Dr. Hayward. Address: Director of Research for the Archer-Daniels-Midland Co.

216. **Product Name:** Soybean Oil, and Soybean Meal.

**Manufacturer's Name:** Honeymead Products Co.

**Manufacturer's Address:** Mankato, Minnesota.

**Date of Introduction:** 1947 August.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product—Documentation:** *Soybean Digest*. 1947.

Aug. p. 32. "Sale of the Mankato Soy Products Co. by the Washington Cooperative Farmers Association, Seattle, Washington, to Harold Jamieson and Lowell Andreas, was announced July 17. The new owners, formerly associated with Honeymead Products Co., Cedar Rapids [Iowa], will crush both soybeans and flaxseed."

*Soybean Digest*. 1948. Feb. p. 28. "The Mankato Processing Co. announces that the name of the firm has been changed as of February 1 [1948] and is now Mankato Honeymead Co., Mankato, Minnesota. Management remains the same. C.F. Marshall is president, L.W. Andreas is vice-president-secretary."

*Soybean Digest*. 1949. Sept. p. 23. An ad for V.D. Anderson solvent plants states: "Mankato, Minnesota. Here's a 150-200 ton per 24-hour unit that began its operation by the Honeymead Products Co. in the spring of 1949.

National Soybean Processors Association. 1949. *Year Book, 1949-1950 (Association year)*. Chicago, Illinois. 73 p. See p. 17. "Members—Honeymead Products Co., L.W. Andreas, Mankato, Minnesota."

*Soybean Blue Book*. 1949. p. 78. "Processors of soybeans." Minnesota—Mankato: Honeymead Products Co., 202 Given St. President: Clive F. Marshall. Vice president: L.W. Andreas. 5 expellers. Processing capacity: 250 tons/day solvent plant.

*Decatur Daily Review* (Decatur, Illinois). 1950. Feb.

21. p. 14. "What, challenged again?: Mankato, Minn., is processing center." Reprints a recent article from the *Mankato Daily Free Press* that gives a complete history of the soybean crushing plant at Mankato, Minnesota. In Aug. 1947 Honeymead took over the plant from the Washington Cooperative Egg and Poultry association.

*Soybean Digest*. 1957. Honeymead expands further: To add deodorization system to world's largest solvent plant. April. p. 30-31. Honeymead remained a liquid corporation throughout the war years. When the principals returned from service, like many temporarily interrupted businessmen, they turned to the task of picking up the pieces. Honeymead management bought a crushing plant at Mankato, Minnesota in 1948. The plant had 2 expellers and the firm added 3 more. Honeymead soon added a 150 ton per day solvent extraction plant and "very shortly thereafter junked most of the equipment purchased only a few years before."

*Mankato Free Press* (Minnesota). 1960. 'Just day to day business.' Aug. 3. p. 1-2. In 1947, when Honeymead bought the plant in Mankato, the storage capacity was 140,000 bushels. Today it is 3.75 million bushels—a 26-fold increase in 13 years.

Torgerson, Susan. 1980. "Mankato No. 2 in nation in soy processing: 40 years ago industry didn't amount to a hill of beans." *Land (The)* (Southern Minnesota) 4(10):1, 13, 38. April 24. In 1942 Washington Egg and Poultry Association [WAPA], a poultry cooperative, offered the investors double their money for the company; all of Blethen's pleading couldn't stand in their way. In 1946 [sic, 1947] the Andreas family bought the plant from WAPA.

Honeymead Products Co. 1981? "The history of Honeymead" (Leaflet). Mankato, Minnesota. 2 p. Undated "1947—The Mankato plant is purchased by Dwayne and Lowell Andreas and given its present name—Honeymead." Note: The last date in this chronology is 1980.

217. *Kansas Business Magazine*. 1947. Soybean mill has faith in Kansas [ADM mill at Fredonia]. Aug. p. 8-9. • **Summary:** Discusses the Archer-Daniels-Midland Company's operations at Fredonia, Kansas. A-D-M, which has been expanding and modernizing its Fredonia mill for the past year, now processes about 5,000 bushels a day, and has a storage capacity for 900,000 bushels of soybeans. It is claimed to be the largest of its kind in Kansas. "One of the largest flax and soybean mills in the country," it processes both soybeans and flax into oil and meal, and it refines the oil. Soybean oil is used to make paints and protective coatings, and also goes into edible foods, such as salad oils and oleomargarine. The oilseeds come from eastern Kansas, western Missouri, and northeastern Oklahoma. During the first half of this year it processed soybeans, then in July it switched to flax. Expensive new expellers have recently replaced the old hydraulic presses for separating the seeds into oil and meal.

The Fredonia mill was first established in 1890, "one of the first in the country." It was acquired by ADM in 1928. About 80 people are now employed on the average.

Photos show: (1) Aerial view of ADM mill at Fredonia. (2) New cookers inside ADM mill. (3) Expellers which process soybeans and flax in ADM mill. (4) Small portrait photos of D.O. Fink (manager) and R.S. Githens (sales manager).

218. MacGee, A. Ernest. 1947. Vegetable oil extraction solvents; History and general chemical composition. *Oil Mill Gazetteer* 52(1):17-21, 35-43. Aug. [53 ref]

• **Summary:** The growth of the vegetable and animal oil extraction industry since 1930 has been rapid and astonishing. Many parallels can be found with George Stephenson's invention and persistent development of the locomotive in England in the early 1800s. In 1930 Clarence F. Eddy predicted a bright future for larger oil mills using continuous, counter-current solvent extraction. In 1933 David Wesson recounted the history of his work with cottonseed oil (from 1889) and with solvent extraction of cottonseed oil (from about 1900 to 1917), using benzine and low end point-high test gasoline. A mill in New Orleans (Louisiana) ran from 1917-1919, first using aviation type gasoline, later using benzol.

Concerning early solvent extraction of soybeans: Piatt County Soybean Cooperative Co., Monticello, Illinois, operated a batch plant with a capacity of 8 tons/day for about 6 months in 1923-24 using benzol as a solvent. In 1924 the Eastern Cotton Oil Co., Norfolk, Virginia, used a continuous extractor of about 80 tons/day capacity.

Solvent extraction was apparently patented in England in 1856 and had become fairly well established in Europe by about 1870. However these early solvent extraction plants were of the "batch" type and had fairly small capacities, with no means of agitation. In about 1900 the solvent countercurrent principle was introduced in Europe by combining several consecutive batch extractors. Next came the introduction of the "continuous" type extractor. The first two successful continuous extraction plants processing large volumes in the 1920s were: (1) The Hansa-Muehle, A.G., Hamburg, Germany, using the "Bollmann" extractor, and (2) the Extractochemie, A.G., Zurich, Switzerland (but originally of Harburg, Germany) using the "Hildebrandt" extractor. At Hansa-Muehle in 1928 the central plant, consisting of four extractor units with a combined capacity of over 1,000 tons/day, was put into operation. By 1934 a number of continuous solvent plants were operating in Europe.

In the USA, the first large-scale plant of this type was that of the Archer-Daniels-Midland Company, Chicago, Illinois. In March 1934 it began operating using a "Hildebrandt" extractor to process 100 tons/day of soybeans. The solvent was petroleum naphtha of the hexane type. As of 1947, this plant is still in operation.

The ADM plant in March 1934 represented a “turning point and marked the beginning of the large scale edible oil extraction industry as it is known today.” Installations of other large-capacity continuous solvent extraction plants followed in rapid succession:

1934 Nov.—The Glidden Company, Chicago, Illinois, began operating a continuous solvent soybean plant of 100 tons per day capacity.

1937 Nov.—the 400 tons per day plant of the Central Soya Co., Decatur, Indiana, began operation.

1938 Oct.—Honeymead Products Co. Cedar Rapids, Iowa, began operating a continuous solvent soybean plant with 100 tons per day capacity. By Aug. 1947 this plant was owned by Cargill, Inc.

By 1947 an estimated 33% of the soybean processing capacity operating in the USA used the solvent extraction process. Schiffman (1945) reported that of the estimated 4.25 million tons soybean processing capacity on 1 Oct. 1945, only 27% of the capacity in operation was of the solvent type, but 64% of the total capacity under construction on that date was of the solvent type.

Table 1 shows the tonnage and percentage of soybeans processed by expeller, solvent and hydraulic methods from 1936 to 1940. Expeller increased from 68.5% to 74.2%. Solvent increased from 13.2% to 23.1%. Hydraulic decreased from 18.5% to 2.7%.

The largest soybean solvent plant in the USA today is that owned by A.E. Staley Manufacturing Co., Decatur, Illinois. Costing \$2 million and having a capacity of 650 tons per day, it went on stream in March 1945. The extraction tower was supplied by French Oil Mill Machinery Co. and it used a “petroleum hexane-type solvent of 146 to 156 degrees F. general boiling range.”

Two events that occurred during the 1930s were of vital importance to the rapid growth and widespread application of the solvent extraction process in the oil and fat industries: (1) The perfecting of large volume, continuous processing equipment, and (2) the development of light petroleum naphthas of the hexane and heptane types. Address: Manager Skellysolve Sales, Skelly Oil Co., Kansas City, Missouri.

219. *Minneapolis Star (Minneapolis, Minnesota)*. 1947. Shreve M. Archer, 59, succumbs to infection: headed nation’s largest flax processing firm. Nov. 11. p. 17.

• **Summary:** “Shreve MacLaren Archer, 59, president of Archer-Daniels-Midland Co. of Minneapolis, died at 5:50 p.m. Monday [Nov. 10] at Miller Hospital, St. Paul.”

He accidentally swallowed a chicken bone on Oct. 21, was taken to the hospital, but eventually died of the infection.

“Private services will be held at 10 a.m. Wednesday at the Archer residence, 990 Summit avenue, St. Paul. Burial will be in St. Paul...”

“Mr. Archer was born in Yankton, South Dakota, Sept.

29, 1888, the son of George A. and Harriet H. Archer.

“He attended St. Paul Academy and entered Hill school at Pottstown, Pennsylvania, in 1904. From 1907 to 1910, he studied at Sheffield scientific school of Yale University.

“Mr. Archer married Miss Doris Cowley of Dellwood, Minnesota, Sept. 26, 1911.

“In 1923 he was named a vice president of Archer-Daniels-Midland Co. He was elected president of the company Dec. 9, 1924, and was active as chairman of the firm’s board of directors and as a member of the executive committee.

“Under his direction the company became one of the world’s largest processors of vegetable oils and one of the nation’s largest grain and flour filling firms.

“He was a director of the St. Paul Fire & Marine Insurance Co., First National bank of St. Paul, First Bank Stock Corp., Northwest Bancorporation and an executive committee member and a director of the Great Northern railroad.

“Mr. Archer served as president of the Minneapolis Chamber of Commerce, now known as the Minneapolis Grain Exchange, in 1926-27, and was a trustee of the Minnesota & Ontario Paper Co.

“At one time he was chairman of the board of Northwest Airlines, Inc.

“He was a member of the Minneapolis, Minnesota, St. Paul University, White Bear Yacht and Somerset clubs and was chairman of the board of Miller hospital at the time of his death.

“In addition he is survived by five children, Mrs. M.J. Lilleberg and Shreve M. Archer, Jr. St. Paul; Mrs. Joseph C. Uihlein, Jr., Milwaukee, Wisconsin; Mrs. J. Addison Thomas, Kansas City, Missouri, and Mrs. Russell R. Winters, White Bear Lake.

“His sister, Mrs. Lou Ella Archer, resides in Phoenix, Arizona.

“Mr. Archer, in addition to his St. Paul residence, maintained a summer home at Dellwood, on White Bear Lake.

Firms’ Offices to Close Throughout U.S.: All offices and plants of the Archer-Daniels-Midland Co. and of the Commander-Larabee Milling Co. throughout the United States will be closed for 24 hours, beginning at 7 a.m. Wednesday, in respect to Shreve M. Archer.”

A large portrait photo shows Shreve M. Archer.

Note: Shreve M. Archer, born 29 Sept. 1888 in South Dakota. Died 10 Nov. 1947, in St. Paul, Ramsey Co., Minnesota. Burial: Oakland Cemetery, St. Paul, Ramsey Co., MN.

220. Goss, Warren H. 1947. Report of investigation of target: Hansa-Muehle A.G. (Document part). In: W.H. Goss. 1947. *The German Oilseed Industry*. Washington, DC: Hobart Publishing Co. 248 p. See p. 24-34.

• **Summary:** Contents: Official description of target: Hanseatische Mühlenwerke A.G., more generally known as Hansa Mühle A.G., Hamburg-Neuhof, Alsterdamm 3. Target No. FA/18 and T5/82. Period of investigation: 7 Aug. 1945. Names of participants in investigation: W.H. Goss. Names of persons interviewed. Mr. Kruse, Director. Dr. Mayr., Chemist. Mr. Depmer, Engineer. Mr. Miller, Superintendent. Detailed presentation of information obtained: General, soybean extraction, phosphatide recovery, refinery, fatty acids, extraction of other oilseeds, expeller mill, soy flour, ethyl esters in margarine, hydrolysis of cellulose.

Hanseatische Muehlenwerke A.G., “is one of the more famous oilseed mills in the world, partly because of its large size and partly because it was here that the widely-used paternoster or Bollmann type solvent extraction equipment was developed by Dr. Hermann Bollmann starting immediately after World War I. When this development began, the company was experiencing financial difficulties related to the war, and funds for embarking on the new venture were obtained from a group of Hamburg bankers who still own most of the company’s stock.

“During the twenty years following the first World War, the Bollmann system of extraction was developed gradually. In 1924, one Bollmann extractor was sold to an American firm—The Eastern Cotton Oil Co. in Norfolk, Virginia. The extractor was said to have a capacity of 80 tons of soybeans per day and was used on soybeans grown in North Carolina.”

Table I shows 15 mills using Bollmann extractors and their capacity per 24 hours. The mills that process soybean are located in Germany, Belgium, USA, France, Netherlands, Italy, Hungary, and Switzerland; they include Central Soya Co. (Indiana, 70 tons of soybeans), Archer Daniels Midland Co. (Illinois, 300 tons of soybeans).

Hansa-Muehle made no soy flour; the largest producer of soy flour in Germany was the C.F. Hildebrandt Co. in Hamburg. At one time Hansa-Muehle furnished extracted soybean meal to a “Deback Co.” on Wendenstrasse, and it was processed to produce low-fat flour.

221. *Soybean Digest*. 1947. S.M. Archer of A-D-M has passed. Dec. p. 18-19.

• **Summary:** Shreve MacLaren Archer, age 59, president and chairman of the board of the Archer-Daniels-Midland Co., Minneapolis, Minnesota, died on 10 Nov. 1947 at Miller Hospital in St. Paul, Minnesota.

“Mr. Archer accidentally swallowed a chicken bone October 21 and entered the hospital the following night. The bone had entered the esophagus and could not be removed. Infection developed, spreading throughout his body.

“He was buried from the Archer residence at 990 Summit Ave., St. Paul, November 12. Burial was in St. Paul.

“Mr. Archer was born Sept. 29, 1888, in Yankton, South Dakota. He attended St. Paul Academy, Hill School, at Pottstown, Pennsylvania, and Sheffield Scientific School of

Yale University [New Haven, Connecticut].

“In 1923 he was named vice president of Archer-Daniels-Midland Co. He was elected president of the company in 1924, and was active as chairman of the firm’s board of directors and as a member of the executive committee.

“Under his direction Archer-Daniels-Midland Co. became one of the world’s largest processors of vegetable oils and one of the nation’s largest grain and flour milling firms. The company is among the largest soybean processors and manufacturers of soy flour in this country. The company has been among the leaders in the industry since soybeans were first grown commercially in this country. It has worked toward a larger soybean acreage and has also contributed to the expansion of the soybean processing industry, which has a capacity of almost 200 million bushels a year.

“Mr. Archer was a director of the St. Paul Fire & Marine Insurance Co., First National Bank of St. Paul, First Bank Stock Corp., Northwest Bancorporation and an executive committee member and director of the Great Northern Railroad.

“He was formerly president of the Minneapolis Chamber of Commerce, now the Minneapolis Grain Exchange, and a trustee of Minnesota & Ontario Paper Co. At one time he was chairman of the board of Northwest Airlines, Inc.

“Samuel Mairs, executive vice president of Archer-Daniels-Midland Co., has been named chairman of the board.

“T.L. Daniels, executive vice president, was elected president. Both positions previously were held by Shreve M. Archer.

“W.L. Dedon, vice president and treasurer, was elected executive vice president and will also continue as treasurer.

“Erwin A. Olson, vice president in charge of the flax fibre division, was elected to the board of directors.

“Samuel O. Sorenson, technical director, was named vice president in charge of research.

“Mr. Mairs joined the predecessor company in 1903, and was secretary and treasurer for many years.

“The company’s new president, Mr. Daniels, was first in the employ of the firm following his graduation from Yale University in 1914. In 1942 he served in Washington. D.C. as director of fats and oils with the War Production Board and later in charge of the fats and oils division of the War Food Administration of the U.S. Department of Agriculture. He rejoined ADM in 1943 and was elected an executive vice president in 1946.

“His father, J.W. Daniels, was president and chairman of the board of the predecessor company from 1902 to 1923.

“Mr. Daniels is nationally-known in the flax industry and serves as chairman of the flax development committee.

“Mr. Sorenson, former president of the American Oil Chemists’ Society and present member of the Society’s executive committee, joined Archer-Daniels-Midland Co. in

1923. He was named technical director of ADM in 1944.

“In his new capacity as vice president in charge of research, Mr. Sorenson will supervise the activities of the ADM laboratory.”

A large portrait photo shows Shreve M. Archer.

A group of 5 small portrait photos (atop p. 19) has this caption: These men were included in executive changes of Archer-Daniels-Midland Co. in November. Left to right, Samuel Mairs, new chairman of the board; T.L. Daniels, president; W.L. Dedon, executive vice president and treasurer; Erwin A. Olson, vice president in charge of flax fibre division, elected to the board of directors; and Samuel O. Sorenson, vice president in charge of research.

222. **Product Name:** Nutriwhip (Whipping Agent).

**Manufacturer’s Name:** Archer-Daniels-Midland Co. Soya Products Div.

**Manufacturer’s Address:** 600 Roanoke Building, Minneapolis 2, Minnesota.

**Date of Introduction:** 1947.

**New Product–Documentation:** Soybean Blue Book. 1947. p. 73. “Whipping Agents... Archer-Daniels-Midland Co., Soya Products Div., 600 Roanoke Building, Minneapolis 2, Minnesota. Nutriwhip.”

223. **Product Name:** ADM Soybean Brew Flakes.

**Manufacturer’s Name:** Commander Larabee Milling Co. Subsidiary of Archer-Daniels-Midland Co.

**Manufacturer’s Address:** Minneapolis 2, Minnesota.

**Date of Introduction:** 1947.

**New Product–Documentation:** R.J. Sumner and D.K. Tressler. 1943. *Industrial and Engineering Chemistry* 35(8):921. Aug. “Lipoid oxidase in soybean meals.”

Soybean Blue Book. 1947. p. 70. Commander Larabee now makes soy flour, flakes, grits, and ADM Brew Flakes. Soybean Blue Book. 1948. Both ADM and Commander Larabee are listed as the manufacturer. But in 1949 only ADM is listed as the manufacturer.

Ad in Soybean Blue Book. 1959. p. 95. “Some ADM products from soybeans.” Seventeen products are listed, including “Soybean brew flakes.” *Soybean Digest Blue Book*. 1974. p. 122. ADM is located at 4666 Faries Parkway, Decatur, Illinois 62526.

224. **Product Name:** Airy Fairy Coffee Cake Mix.

**Manufacturer’s Name:** Commander Larabee Milling Co. Subsidiary of Archer-Daniels-Midland Co.

**Manufacturer’s Address:** Minneapolis 2, Minnesota.

**Date of Introduction:** 1947.

**New Product–Documentation:** Soybean Blue Book. 1947. p. 70.

225. Wherry, Larry. 1947. The golden anniversary of scientific feeding. Milwaukee, Wisconsin: Business Press.

120 p. No index. 22 cm.

• **Summary:** American Mfgs. Assoc. calls it the only history of feed manufacturing in the U.S. Scientific feeding was built on an understanding of the importance of protein and a realization that protein was often the limiting factor in the production of meat, milk and eggs. Early sources of protein were often by-products, such as corn gluten and cottonseed meal.

Appendix I, titled “Chronological history of feed manufacturing,” covers the period 1875-1945 in the USA. Some important dates:

1864–Emil Wolff, a German chemist, publishes his first feeding standards. Known as the Wolff-Lehmann standards, they indicated the amount of crude protein needed by different classes of animals; however they were not widely used.

1875–John W. Barwell of Leicester, England, brings a feed manufacturing business to the USA, locating in Chicago and Waukegan, Illinois.

1886–Albers Milling Co. is founded by Bernard Albers at Seattle, Washington. In 1895 they began manufacturing feeds. In 1929 this company merged with the Carnation Company. By 1947 Albers operated five feed mills: Seattle, Washington; Portland, Oregon; Oakland, California; Los Angeles, California; and Peoria, Illinois.

1894–Robinson-Danforth Commission Company, St. Louis, Missouri, begins making mixed feeds. In 1898 the brand name “Purina” is adopted, and Purina Mills become part of the new corporation, Ralston Purina Co., headed by William H. Danforth. By 1947 they operated more than 30 feed mills.

1896–Dr. C. Lehmann, of the Berlin Agricultural High School, modifies Wolff’s feeding standards to create the Wolff-Lehmann standards, which soon become widely used in Europe and the United States in computing livestock rations; they emphasized that protein was often the limiting factor in the production of meat, milk, and eggs. One of the first protein supplements was corn gluten feed. The American Glucose Co. in Buffalo, New York, sold a feed called “Buffalo Feed.” After about 1900 cottonseed meal, and tankage and meat scraps from packing houses, started to be widely used.

1898–American Milling Company organized as a consolidation of Marsden Company and American Milling Company, by Colonel A.G. Winter. Plants at Owensboro, Kentucky; Peoria, Illinois; Linden, Indiana. Note: American Milling Co. later became part of Allied Mills, which crushed soybeans in the plant at Peoria, Illinois.

1904–Northrup King Co. begins manufacturing feeds at Minneapolis, Minnesota. Founded by J.E. Northrup, Preston King, and C.C. Massie.

1920–Nutrena Mills, Kansas City, Kansas, founded by Van Roy Miller. Note: in Oct. 1945 Cargill purchased (for \$1.6 million) the three Nutrena feed mills at Kansas City,

Kansas; Coffeyville, Kansas, and Sioux City, Iowa.

1920–Pillsbury Flour Mills Co., Minneapolis, Minnesota, begins manufacturing livestock and poultry feeds. Name in 1947: Pillsbury Mills, Inc.

1925–Purina Experimental Farm established by Ralston Purina Co. at Grays Summit, Missouri.

1928–General Mills, Inc. is organized, including Washburn Crosby Company, Red Star Milling Company, Royal Milling Company, Kalispell Flour Mills Company and Rocky Mountain Elevator Company.

1929–Allied Mills, Inc., is formed as a result of the merger of American Milling Company and the McMillen Company. The principal brand names of these predecessor companies, namely “Amco” and “Wayne” were continued after the merger. Now (probably meaning in 1947) operates 7 major feed plants: Peoria, Illinois; Omaha, Nebraska; Fort Wayne, Indiana; East St. Louis, Illinois; Buffalo, New York; Memphis, Tennessee; and Portsmouth, Virginia.

1932–Honeyamead Products Company, Cedar Rapids, Iowa, founded by R.P. Andreas. Operating 3 mills... one at Cedar Rapids, one at Spencer, and one at Washington, Iowa. The firm name was originally “Andy’s Feeds, Inc.,” changed to “Honeyamead” in 1936. Note: In 1938 the Honeyamead name was first used; the family-owned Honeyamead plant began operating in Cedar Rapids in Oct. 1938. In 1944 the Honeyamead plant in Spencer, Iowa, began operation, followed in early 1945 by the plant in Washington, Iowa.

1933–Archer Daniels Midland Company [feed mill], Minneapolis, Minnesota, founded by George A. Archer and John W. Daniels.

1935–McMillen Feed Mills, Inc., Division of Central Soya Company, Inc., founded by D.W. McMillen, Sr. Operates 4 feed mills: Decatur, Indiana; Gibson City, Illinois; Harrisburg, Pennsylvania; and Marion, Ohio.

1936–The Glidden Company of Cleveland, Ohio, began manufacturing feeds under the name of Holland Mills, at Piqua, Ohio. This plant was later destroyed by fire, but feed operations were reestablished at Indianapolis as the Glidden Co. Feed Mill Division with brand names of Glidden and Capitol.

1938–Cargill, Inc., of Minneapolis, Minnesota, founded in 1865 by W.W. Cargill, begins manufacturing feeds. In 1945 they bought the Honeyamead plant in Cedar Rapids. As of 1947 they operate feed plants at: Minneapolis; Cedar Rapids, Iowa (two plants); Fort Dodge, Iowa; Spencer, Iowa. Address: Chicago, Illinois.

**226. Product Name:** Archer brand Orange Blossom Soy Flour (Defatted Soy Flour).

**Manufacturer’s Name:** Archer-Daniels-Midland Co. Commander-Larabee Milling Co.

**Manufacturer’s Address:** Minneapolis, Minnesota.

**Date of Introduction:** 1947?

**How Stored:** Shelf stable.

**New Product–Documentation:** Archer-Daniels-Midland Co. 1947? The ABC of ADM. A photo shows a sack of the flour.

**227. Product Name:** Archer brand Nutrisoy Grits (Defatted Soy Flour).

**Manufacturer’s Name:** Archer-Daniels-Midland Co. Commander-Larabee Milling Co.

**Manufacturer’s Address:** Minneapolis, Minnesota.

**Date of Introduction:** 1947?

**How Stored:** Shelf stable.

**New Product–Documentation:** Archer-Daniels-Midland Co. 1947? The ABC of ADM. A photo on the unnumbered page titled “Soybean Products Division” shows a sack of the flour.

**228. Product Name:** Archer brand Packers Granular (Defatted Soy Flour).

**Manufacturer’s Name:** Archer-Daniels-Midland Co. Commander-Larabee Milling Co.

**Manufacturer’s Address:** Minneapolis, Minnesota.

**Date of Introduction:** 1947?

**How Stored:** Shelf stable.

**New Product–Documentation:** Archer-Daniels-Midland Co. 1947? The ABC of ADM. A photo on the unnumbered page titled “Soybean Products Division” shows a sack of the flour.

229. Archer-Daniels-Midland Co. 1947? The ABC of ADM. Minneapolis, Minnesota. 40 p. Undated.

• **Summary:** This is a basic introduction to ADM. The company is divided into: Flax seed department. Commander Larabee Co. Werner G. Smith Co. Grain department. Soybean department. “Creating new values from America’s harvests.”

One full page shows “Research Division at the center surrounded by: Flax fibre division. Linseed meal division. Archer feeds division. Soybean meal division. Soya products division. Soybean oil division. Elevator storage division. Importer oils–core oils. Flour division. Linseed soil division.

“Let’s get acquainted. The following pages show you the plant properties of Archer-Daniels-Midland, the work that keeps them busy, and the relationship of each ADM department to the others ....picture of a vast enterprise that serves industry and develops markets for the harvests of our farms.

“Archer-Daniels-Midland is one of the world’s largest processors of agricultural crops. The business of ADM is concerned with millions of bushels of flax, soybeans, bread-wheats and semolina–and quantities of other grains.

“ADM’s job begins with collecting these crops in rural elevators, storing them in the great terminals, and routing them to the various ADM processing plants, which are located in 26 states from coast to coast. From the laboratories

and mills of ADM flow an endless stream of crop products which find their way into plants of other manufacturers. Here, transformed by further chemical and physical processing, these crop products emerge as finished consumer goods which touch our living every day of the year... foods, clothing, shelter, machinery, protective coatings, and many other end products presented on the pages that follow.

“Exploring a new world—the soybean. An illustration shows a man looking a huge soybean through a telescope.

“Soybean Department: One of the most dramatic success stories in the history of our agriculture is the rise of the soybean.

“The tremendous increase in the growth of this multi-purpose crop brought a new source of income to American farmers, new jobs for industry and important new values to the public.

“In 1924 the United States harvested 448,000 acres of soybeans. It is estimated in 1947 approximately 12,748,000 acres will be harvested.

“The growth of the soybean division of ADM has kept pace with the increased acreage planted to soybeans. Personnel has increased. laboratory activity expanded, plants and processing facilities doubled and redoubled.

“The ADM plant at Decatur, Illinois is a typical soybean operation. This plant can take in 270,000 bushels of soybeans a day—a carload every 8 minutes.

“Other soybean areas are served by plants in Kansas, Minnesota, Illinois, Ohio, and New York.” A background photo shows the ADM plant in Decatur, Illinois.

“The oil that came to dinner: Soybean oil division. Among all the vegetable oils, that of the soybean is the most versatile. It is the star performer in many industries, but its greatest role is played at the dinner table.

“Soybean oil is widely used as a salad oil, as margarine, vegetable shortening and cooking oil. Thus a product that had hardly been tasted in this country twenty years ago, is now consumed at the rate of approximately a billion pounds per year.

“One of the more amazing derivatives of this oil is a product known as Lecithin, which is both a food ingredient and an industrial product. For example, its remarkable chemical make-up enables it to serve as an antioxidant in the processing of such products as cooking fats and chocolate coatings. Lecithin is an important ingredient in the manufacture of soaps, cosmetics, leathers, lubricating oils, munitions, ceramics, insecticides, pharmaceuticals, rubber and printing inks. ADM soybean oil is becoming more and more important in the protective coating industries, where consumption has leaped from two million to thirty-five million pounds since 1928.

“Illustrations: ADM plants, upper left, Toledo, Ohio; upper right, Buffalo, New York; bottom, Chicago, Illinois.

“What next from the soybean? Photos show bags or packages of: Baker’s Nutrisoy: a defatted soy flour. Orange

Blossom soy flour: a defatted soy flour. SturdiMix: for making delicious biscuits, waffles, muffins, pancakes—made by the Sturdiwheat Company (Red Wing & St. Paul, Minnesota). New Soyawheat: High-protein cereal food.

“Soybean Products Division: In recent years, as almost every edition of the newspapers has told of another new product made from soybeans, many have asked -”What next, from soybeans?”

“One of the answers is the array of food products shown on this page. The first soy flour was marketed in 1926 as a ‘health flour’. Testing of soy flours by the Army and Navy during the war years accelerated the growth of the soy flour industry. Last year over 500 million pounds were produced. A great future is predicted for soybean food products as an eager public seeks higher nutritional standards.

“Soy specialties serve uses other than foods. In 1945, over 22 million pounds of soybean meal were consumed in the form of wood glues by the plywood mills of the Pacific Northwest. Other special types of applications are in coatings for fine printing papers, wall paper, certain types of plastics and a remarkable synthetic fibre with many of the characteristics of wool.

“Scores of ADM research projects promise to add still more end-products. For years to come we shall continue to ask, ‘What next, from soybeans?’”

Photos show bags and packages of: Nutrisoy Grits: a defatted soy flour. Packers Granular: a defatted soy flour. Nutri-Whip. Kellogg’s Corn-Soya Shreds. Atry Fatry Coffee-Cake Mix.

“Protein for your pork chops. Soybean Meal Division: Nutritional research has recently developed a method for processing soybean oil meal so that this product, which has been termed a ‘complete protein’, can now help bring to the dinner table new values in meat, poultry and dairy products.

“Soybean oil meal is considered one of the most valuable feeds for livestock. It is rich in the essential amino acids and its proteins are more easily assimilated than any other protein of vegetable origin.

“The wide use of soybean oil meal as livestock feed has been primarily responsible for the huge soybean crops of recent years. As the value of meal has been proved and improved, the crop has been expanded to meet increased demands.

“ADM plants in Illinois, Wisconsin, Minnesota, Ohio, Kansas, and New York supply a constantly growing tonnage of soybean oil meal to the farms of the nation.

“Illustrations: upper left, Twin City ‘A’ Elevator; upper right, Dickinson Feed Mill, Minneapolis; bottom, Mankato Mills Division, Mankato, Minnesota.”

Soybean meal products: 44% [protein] toasted soy bean meal and flakes. 41% expeller soy bean oil meal. 44% soy bean pellets. E.V.G. soy bean oil meal. 41% expeller soy bean grits.

Soya products: Biswhip. Nutriwhip. Baker’s Nutrisoy.

Brew flakes–Kaysoy. Archer brand soya products. Address: Minneapolis, Minnesota.

230. *Soybean Digest*. 1948. New ADM plant is opened. Jan. p. 28.

• **Summary:** “The world’s largest vegetable oil processing plant, a \$1,250,000 installation devoted exclusively to processing oil bearing seeds, was placed in operation at Minneapolis [Minnesota] January 2 by Archer-Daniels-Midland Co.

“T.L. Daniels, ADM president, said the plant was designed to utilize war-developed chemicals, particularly those from the petroleum and synthetic rubber industries, in conjunction with linseed and soybean oils.

“The unit, Mr. Daniels said, is part of a 7-million-dollar oil processing expansion program underway at Minneapolis as a further step ‘towards ADM’s policy of creating new values from America’s harvests.’

“Such products as crude rubber from plantations all over the world and chemicals produced from the petroleum and natural gas industries of the nation will be reacted and combined with products obtained from the farms of the upper Midwest, he said.

“The construction program is a result of 10 years of collaborative research and development work by the Archer-Daniels-Midland Co. research and engineering departments. Another unit now under construction is designed to solvent extract the oil from flaxseed and soybeans by a new process recently patented by the ADM engineering department.

“Tailor-Made Oils: Other units in addition to the solvent extraction plant will separate the oil produced into its component parts of fatty acids and glycerine to obtain the basic ingredients from which can be produced tailor-made special oils for the paint, varnish, linoleum, cosmetic, pharmaceutical, printing ink, and a variety of major industries.

“Improved products for Mr. and Mrs. John Q. Public will result from the new operation, it was explained. Special oils produced will result in paints for interior and exterior application with faster drying time, better durability and increased water and alkali resistance. Longer life will be added to automobile brake linings. Stronger and more durable castings from which innumerable parts are machined in all types of metal working industries will result.

“Other far-reaching effects will become more evident with the various chemical modifications of the basic ingredients obtained from vegetable oils, including linseed and soybean, Mr. Daniels said.

“With operations of the new plant, Archer-Daniels-Midland Co. becomes not only the nation’s largest processor of flax seed, but also the largest producer of vegetable oils, it is claimed.

“Steady Employment: ‘A great deal of the research and development work of the Archer-Daniels-Midland

Co. has been directed toward diversifying and eliminating seasonal employment from our linseed and soybean crushing operations,’ Daniels explained. “‘To do this, the logical step was to carry further the processing of the vegetable oils produced and use them as the basic raw materials for processing into specification products for numerous industries.’

“Linseed and soybean oil meal, remaining from the seed after extraction of oil, will continue to be used in the manufacture of Archer Quality Feeds for poultry and livestock because of its high protein content.”

A large photo shows Samuel O. Sorenson (vice president in charge of research), Walter G. Andrews (director of special oil sales), and J.W. Moore (ADM vice president) inspecting ADM’s new vegetable oil processing equipment.

231. *Windsor Daily Star (Essex County, Ontario, Canada)*. 1948. Yields best in soy beans: Essex, Kent growers winners of contest. Feb. 28. p. 5, col. 8.

• **Summary:** “Top places in the Ontario Crop Improvement Association’s high yield soybean contest were won by Essex and Kent County men.” The top four places were named. Fred Newcombe, of Blenheim, placed first with a yield score of 100 and yield per acre count of 40.56 bushels; he won \$100. William Pajot, of River Canard, was second with 36.18 bu/acre, and a prize of \$60.

The contest was carried out in co-operation with Victory Mills and Toronto Elevators Limited and was designed to expand soybean acreage in Ontario, lead to another good cash crop with high yields, and “further the production of an edible vegetable oil from a home-produced crop.”

Note: This is an one of the earliest articles seen (Aug. 2019) that mentions Toronto Elevators Ltd. in connection with soybeans.

232. *Soybean Digest*. 1948. Grits and flakes... from the world of soy: Mankato Processing Co. Feb. p. 28.

• **Summary:** “The Mankato Processing Co. announces that the name of the firm has been changed as of February 1 [1948] and is now Mankato Honey mead Co., Mankato, Minnesota. Management remains the same. C.F. Marshall is president, L.W. Andreas is vice-president-secretary.”

Note: Talk with Lowell Andreas. 2003. July 23. He does not remember either of these two company names.

233. American Soybean Association; National Cotton Council. 1948. Progress in products (Technicolor motion picture). Hudson, Iowa. 25 minutes. 16 mm. Released on March 1. \*

• **Summary:** Jointly produced and sponsored by the American Soybean Assoc. and the National Cotton Council, this film depicts the use of cottonseed oil and soy oil in margarine, the part that agriculture plays in industry, and the way in which a new industry helps other existing industries

by broadening their markets and creating new ones.

Reviewed in *Soybean Digest* (May 1948, p. 42; June 1948, p. 34; July 1948, p. 34; Sept. 1948, p. 104; Oct. 1948, p. 34; Nov. 1948, p. 19, 40-41). Released on 1 March 1948, it had 900 bookings in the first 6 weeks after release.

By June 1, 1948, bookings on the Technicolor margarine film "had reached the large total of 1,600. There were bookings in all the 48 states, with California, Pennsylvania, Indiana, and Texas each having well over 100. Film shows the part soybean and cottonseed oils play in margarine."

By June 30 over 90,000 people had reportedly seen the Technicolor film. "A total of 1,893 bookings had been made by that date. Bookings may be made through the executive offices of the American Soybean Association, Hudson, Iowa."

By 31 Aug. 1948 the film had been booked 1,272 times and over 230,000 people had seen it. It was shown at the 1948 ASA convention on Sept. 13-15 in Memphis, Tennessee.

As of 27 Sept. 1948 "the margarine movie has been shown 1,193 times to 166,890 people" [numbers revised downward].

By late October it was reported to have been shown to 206,346 people. Address: Hudson, Iowa.

234. Hayward, J.W. 1948. Soybean: Most versatile protein meal. *Soybean Digest*. March. p. 12-13, 15.

• **Summary:** "Historians of agriculture probably will place the soybean in a high position when the full story is told of the wartime feeding program.

"Soybean oil meal carried the protein load during the war years, and it continues carrying the load in the postwar period of serious shortages.

"Total production of soybean oil meal during the crop year—October 1947 up to October 1948—is expected to reach 3,375,000 tons. This would compare with total production of soybean oil meal of 4,084,097 tons in the preceding year.

"Farmers and feeders learned during the war period the high value from a profit viewpoint of a planned protein ration. There never has been a time when production of protein has been sufficient to balance more than one-half of all farm grains fed in the United States.

"Since soybean oil meal constitutes the largest available protein supply for feeding purposes, government officials, the feed trade, and university authorities all have given recognition to the need of a continued large soybean production. It is agreed, generally, that European crops could not become again abundant in a short period of time. Under the proposed American food exporting program it would appear that soybean protein will continue in substantial demand.

"Figures for the production of the various protein concentrates during the past several years are given in Table 1. This relative status will still apply this year, regardless of

slight changes."

Tables show: (1) Production of protein concentrates in the United States (crop years Oct. 1 to Sept. 30) (1930-1946, with estimates for 1947). Soybean oil meal is by far the leading protein concentrate in the USA in 1947 accounting for 42.3% of the total. (2) Amino acid analysis of oil seed meals (including dried skimmilk and corn for comparison). The other meals are linseed oil meal, cottonseed oil meal, corn gluten meal, and peanut oil meal. Source: Block & Mitchell. 1946-47. "The correlation of the amino acid composition of proteins with their nutritive value." *Nutrition Abstracts & Reviews* 16(2):249-78. Address: Member, Soybean Research Council.

235. *Soybean Digest*. 1948. Flour purchase. March. p. 42, 44.

• **Summary:** "Purchases of 100,000 long tons of soy flour have now been completed by the U.S. Army for shipment abroad in the period January through next June. This protein food product is being used for civilian feeding purposes.

"Suppliers of the current order, completed January 7, are Archer-Daniels-Midland Co., Central Soya Co., Inc., The Glidden Co., Spencer Kellogg and Sons, Inc., and A.E. Staley Manufacturing Co., all with large mills in the heavy soybean producing areas of the Midwest. Shellabarger Soybean Mills, Decatur, Illinois, also is currently shipping on a previous contract."

236. *Soybean Digest*. 1948. New A-D-M mill. April. p. 40.

• **Summary:** The Chemical Plants division of Blaw-Knox Co. in Pittsburgh, Pennsylvania, will design and construct a large soybean extraction plant for the Archer-Daniels-Midland Co., which is adding to its facilities at Decatur, Illinois.

The new plant will produce crude soybean oil and high protein meal.

237. *Soybean Digest*. 1948. New oils by Archer-Daniels-Midland Co. June. p. 13.

• **Summary:** Archer-Daniels-Midland Co. has announced the introduction of "four revolutionary oils that are entirely new in their concept and use in the paint, varnish, and protective coatings industry." These new oils, the products of 5 years of intensive research at ADM laboratories, are the first of a series to be known as Admerols. They are based on linseed and soybean oils which are reacted with various chemicals. The names of the products are Admerol 101, Admerol 251, Admerol 301, and Admerol 351.

A photo shows T.L. Daniels, president of ADM, explaining the advantages of the new oils to N.P. Delander, a banker.

238. *Annual Report*. 1948---. Serial/periodical. Decatur, Illinois: Archer-Daniels-Midland Co. Vol. 1 Aug. 1948--.

• **Summary:** ADM's earliest known annual report appeared

in 1948. Soyinfo Center owns originals of ADM's reports from 1960-1970, and 1982 on. Starting in 1960 these annual reports contain a ten-year (1960-1951) summary of "Financial and operating data" in tabular form. Address: ADM.

239. Konen, J.C. 1948. New developments in industrial usage of soybean oil. *Soybean Digest*. Sept. p. 42-44, 82.  
 • **Summary:** Contents: Introduction. To better quality. Non-drying oils. Wetting agents (or plasticizers). Give harder films. Segregation process. Yellowing. Competition.

"Up until a few years prior to World War II, the usage of soybean oil for industrial purposes was quite insignificant as compared to its use as an edible oil. A severe shortage of linseed oil during the war and an almost complete curtailment of the supply of tung oil, which is supplied primarily by importation, led to a marked increase in the demand for industrial soybean oil. Under government restrictions only a limited amount of soybean oil output could be used for non-edible purposes, but the quantity available was avidly taken by industrial users."

The most important and successful industrial use was in the preparation of soybean oil-modified alkyd resins, which dry rapidly to give films of outstanding durability and color retention. Such soybean alkyds are usually a component of the beautiful white finishes on refrigerators, washing machines, stoves, and the like.

A second and highly important development was the use of soybean oil in the preparation of plasticizers. By treating soybean oil with the chemical maleic anhydride, markedly improved drying oils are produced. "Probably the most promising single development leading to increased utilization of soybean oil in the protective coating industry is the development of copolymer modified oils."

"Yellowing: J.S. Long has recently pointed out that the yellowing characteristics of drying oils are almost a direct function of their unsaturation. Thus, soybean oil yellows less than linseed oil, which in turn yellows less than the more highly unsaturated perilla oil and fish oils. The copolymerization reaction frequently reduces the amount of unsaturation and leads to oils of improved color stability.

"The Archer-Daniels-Midland Co. pioneered in exploring the reactions of drying oils with the various commercially available reactive monomeric materials. Out of the many experimental products prepared several containing soybean oil have been judged worthy of commercial exploitation and are now being sold to the paint industry. These products are characterized by unusually fast rate of set-up to a continuous film, excellent through dry, very good stability plus unusually good gloss, gloss retention and color retention. Products prepared in this manner are outstanding in their uniformity and their durability.

"The hydrolysis of soybean oil to give fatty acids and glycerine is becoming an important industrial process, and

production capacities have been greatly augmented in the last few years. The glycerine is used in the manufacture of a host of manufactured products ranging from cosmetics to dynamite. The fatty acids are becoming increasingly important. They serve as a basis for the preparation of alkyds and synthetic ester as pointed out above. In addition, they are used as chemical intermediates for the preparation of amines, amides and nitriles which are, in turn, used in the preparation of synthetic detergents, flotation agents, textile finishing compounds and a rapidly increasing list of other industrial applications. The capacity for production of these chemicals derived from fats is now being materially increased.

"The contributions of research work on soybean oil for industrial purposes are constantly opening up new vistas of usefulness. The practical paint manufacturer, who a few years ago dismissed soybean oil rather preemptorily as being interesting but not practical for a general line of paints and vehicles, is now very keenly aware of this exciting newcomer in the protective coating field. Whereas previously the usage of soybean oil was confined to specialty applications, the modified soybean oils now produced as the result of the technical ingenuity of the oil chemists can be used in practically every application that was previously restricted to linseed and tung oil only. Modified soybean oils are now used in house paints, in barn paints, in flat wall paints, in the highest grades of interior enamels, in exterior enamels, in interior floor finishes, in spar varnishes, in traffic paints, in linoleum, in caulking compounds, and in a whole host of other diversified paint and protective coating products.

"On the basis of the above enumeration of some of the more important methods by which soybean oil has been upgraded for drying oil purposes the future looks extremely bright. From an economic standpoint there are some vital factors affecting the industrial utilization of soybean oil.

"In the first place, the primary usage of soybean oil is for edible purposes and as a result the market price is very closely tied in with the price of cottonseed oil. When either shortages of cottonseed oil or a heavy edible oil demand make the price of cottonseed oil high, soybean oil may be priced as high as linseed oil or may under rare circumstances even be higher in price. Whenever such conditions exist, industrial soybean oil usage will be limited to a very small number of highly specialized usages in which soybean oil is markedly superior to other competitive drying oils.

"In the second place, the variety of modified soybean oils which have been described involve a considerable amount of processing, which, of course, must necessarily increase the price above that of the ordinary commercial grades of soybean oil. Under the present cost structure, unless the price of soybean oil is about 5 or 6 cents per pound under the price of linseed oil, the soybean specialty oils will be about the same in price as linseed oil. In this case the strong tradition of linseed oil usage will result in

relatively limited sale of soybean products.

“Competition: There is a third consideration dictating the choice of drying oils to be used by the industrial user. Concurrently with the amazing advances in soybean technology, there has been a marked improvement in the processing of other oil materials. Tall oil, particularly, is coming to the forefront in the drying oil field. Tall oil is a mixture of fatty acids and resin acids which is recovered as a by-product from the processing of paper pulp from pine wood. Production of tall oil has risen from about 23 million pounds in 1937 to 202 million pounds in 1946, and according to available estimates, the production could be doubled by the introduction of recovery systems in plants which do not now produce tall oil. The low cost of tall oil as compared with normal vegetable drying oils has resulted in a markedly expanded use in the drying oil field.

“Castor, oiticica and fish oils are additional fatty materials which are competitive with soybean oil for industrial purposes. Increase in supplies and reduction in prices of any of these products would affect the usage of soybean oil. This is particularly true in the case of castor oil which is primarily imported from Brazil and which when dehydrated is directly competitive with soybean oil for high quality architectural enamels.

“Looking into the future, the position of soybean oil in this highly competitive field is very favorable. As a result of continuing research and investigation, soybean oil now stands as the second most widely used drying oil. Based on statistics on the utilization of oils in the paint, varnish and allied industries during the first half of the current year, it seems probable that 30-40 percent as much soybean oil will be used as linseed oil compared to a few percent prior to the war.

“This tremendous increase in the utilization of soybean oil did not just happen. Sustained research has led to the development of modified soybean oils which are incomparably better than soybean oil itself in their speed of drying, hardness of films and flexibility of usage in the hands of competent technologists. These new developments in soybean oil technology have led to a diversified group of specialized drying oils which cover the whole gamut of industrial application.

“However, we cannot regard the job as completed—it has really only begun. Many competitors for soya oil’s hard-won place are apparent. It will take the best combined efforts of grower, chemist and processor to prevent usurpation. A continued program directed toward the most economical production and processing is necessary to keep the utilization of soybean oil in industry on the increase.” Address: Research Director, Archer-Daniels-Midland Co.

240. *Soybean Digest*. 1948. Grits and flakes... from the world of soy: Harold Anderson buys Toledo, Ohio, plant from ADM. Sept. p. 104.

• **Summary:** “Harold Anderson, Lucas County, Ohio, elevator and grain man, has bought the East Toledo soybean processing plant from Archer Daniels Midland Co. A-D-M closed the plant in June. Anderson bought it for grain storage. Processing equipment not involved in the deal is being removed.”

241. *Soybean Digest*. 1948. Grits and flakes... from the world of soy: Paschke of ADM to edible soya products division. Sept. p. 106.

• **Summary:** “Edward O. Paschke, for 14 years Chicago [Illinois] sales manager of Archer Daniels Midland Co., has been named sales manager of the firm’s edible soya products division at Minneapolis [Minnesota]. Joseph W. Gorman, formerly in charge of local soybean and linseed meal sales, will now manage all sales in Chicago for A-D-M.”

242. USDA Northern Regional Research Laboratory. 1948. Soybean processing mills in the United States. *USDA Bureau of Agricultural and Industrial Chemistry*. CA-5. 14 p. Sept.

• **Summary:** Footnote: “This is a revision of AIC-26 [Nov. 1943]—Revised June 1946 under the same title.”

“The following list of soybean processing mills is divided into three parts: (1) Mills specializing in soybeans. (2) Mills processing soybeans on part-time basis. (3) Distribution of soybeans processed by solvent extraction, screw press, and hydraulic press methods (Estimates based on data compiled by Bureau of the Census in cooperation with the Northern Regional Research Laboratory). A year by year table from crop year 1936-37 to 1946-47 (Oct. to Oct.) shows the number of tons processed and the percentage of the total processed by each of the three processes. The percentage processed by solvent extraction doubled from 13.2% to 26.6% while the percentage processed by hydraulic press dropped by half from 18.4% to 9.5%. The total tons of soybeans processed rose 8.2 fold from 619 to 5,107 during the 11 year period.

Processors are listed by state (alphabetically), and within each state alphabetically by city. Three symbols are used (in parentheses) to express each plant’s processing capacity in tons of soybeans per day: S = Small—less than 50. M = Medium—50 to 200. L = Large—more than 200. Three other symbols are used to express the type of soybean processing equipment used: X = Extraction (solvent). P = Screw press [or expeller]. H = Hydraulic press.

“1. Mills specializing in soybeans. Arkansas—West Memphis: Arkansas Mills, Inc. (MX). Wilson: Wilson Soya Corporation (MXP). Delaware—Laurel: Laurel Processing Co. (SX).

“Illinois—Alhambra: Alhambra Grain and Feed Co. (SP). Bartonville: Allied Mills, Inc. (LP). Bloomington: Funk Brothers Seed Co. (MP). Ralston Purina Co. (LX). Champaign: Swift and Co. (LXP). Chicago: Archer-Daniels-Midland Co. (MX). The Glidden Co. (LXP). Spencer

Kellogg and Sons, Inc. (LP). Colchester: Colchester Processing Co. (SP). Decatur: Archer-Daniels-Midland Co. (LXP). Decatur Soy Products Co. (MP). Spencer Kellogg and Sons, Inc. (LXP). A.E. Staley Manufacturing Co. (LXP). Galesburg: Galesburg Soy Products Co. (MP). Gibson City: Central Soya Co., Inc. (LXP). Kankakee: Borden's Soy Processing Co. (MX). Mascoutah: Phillip H. Postel Milling Co. (SP). Monmouth: Ralph Wells and Co. (SP). Nashville: Huegly Elevator Co. (SP). Norris City: Norris City Milling Co. (SP). Pana: Shellabarger Soybean Mills (MP). Poplar Grove: Northern Illinois Processing Corporation (SP). Quincy: Quincy Soybean Products Co. (MP). Roanoke: Eureka Milling Co. (SP). Rock Falls: Sterling Soybean Co. (SP). Springfield: Cargill, Inc (MP). Taylorville: Allied Mills, Inc. (MX). Virden: Hulcher Soy Products Co. (SP).

“Indiana–Bunker Hill: Ladd Soya, Inc. (MP). Danville: Hendricks County Farm Bureau Cooperative Association (SX). Decatur: Central Soya Co., Inc. (LXP). Frankfort: Swift and Co. (MX). Indianapolis: The Glidden Co. (LX). Lafayette: Ralston Purina Co. (MP). Marion: Hoosier Soybean Mills (MP). Oaktown: Knox County Farm Bureau Cooperative Association (SP). Portland: Haynes Soy Products, Inc. (MP). Rockport: Martin Serrin Co., Inc. (SP). Rushville: Rush County Farm Bureau Cooperative Association (SP). Wabash: Wabash County Farm Bureau Cooperative Association (SP).

“Iowa–Belmond: General Mills, Inc. (LX). Cedar Rapids: Cargill, Inc. (MX). Iowa Milling Co. (MP). Centerville: Pillsbury Mills, Inc. (MP). Clinton: Pillsbury Mills, Inc. (MX). Des Moines: Spencer Kellogg and Sons, Inc. (LX). Swift and Co. (MP). Dike: Farmers Cooperative Association (SP). Dubuque: E.E. Frith Co. (SP). Eagle Grove: Boone Valley Cooperative Processing Association (SP). Fairfield: Doughboy Industries, Inc. (MP). Fayette: Fayette Soybean Mill (SP). Fort Dodge: Cargill, Inc. (LXP). Gladbrook: Central Iowa Soybean Mill (MP). Hubbard: Boone Valley [Cooperative] Processing Association (SP). Iowa Falls: Ralston Purina Co. (LXP). Manly: North Iowa Cooperative Processing Association (SP). Marshalltown: Marshall Mills, Inc. (SP). Martelle: Farmers Cooperative Elevator (SP). Muscatine: Hawkeye Soy Products Co. (SP). Muscatine Processing Corporation (MX). New Hampton: Eastern Iowa Milling Co. (SP). Plainfield: Roach Mills (SX). Quimby: Simonsen Mill Rendering Plant (MP). Ralston: Farmers Cooperative Association (SP). Redfield: Iowa Soya Co. (MX). Sac City: Williams Milling Co. (MP). Sheldon: Big Four Cooperative Processing Association (MP). Sioux City: Sioux Soya Co. (MP). Spencer: Cargill, Inc. (SX). Washington: Cargill, Inc. (MX). Waterloo: Borden's Soy Processing Co. (LXP). West Bend: West Bend Elevator Co. (SP).

“Kansas–Coffeyville: Consumers Cooperative Association Soybean Mill (MP). Emporia: Kansas Soya Products Co., Inc. (MXP). Girard: Farmers Union Jobbers

Association (SP). Hiawatha: Thomson Soy Mill (SX). Kansas City: Kansas Soya Products Co., Inc. (MP). Wichita: Soy-Rich Products, Inc. (MXP). Kentucky–Henderson: Ohio Valley Soybean Cooperative (MXP). Louisville: Buckeye Cotton Oil Co. (LXP). Louisville Soy Products Corporation (MX). Owensboro: Owensboro Grain Co. (MXP).

“Maryland–Baltimore: Soya Corporation of America (MP). Michigan–Concord: Concord Soya Corporation (SP). Saline: Soybrands, Inc. (SX). Minnesota: Lakeville: Consumers Soybean Mills, Inc. (MP). Mankato: Honey mead Mankato, Inc. (LXP). Minneapolis: Crown Iron Works Co. (SX). Preston: Hubbard Milling Co. (SP).

“Missouri–Kansas City: Ralston Purina Co. (MP). Kennett: Hemphill Soy Products Co. (MP). Mexico: MFA Cooperative Grain and Feed Co. (MP). New Madrid: Buckeye Cotton Oil Co. (MX). St. Joseph: Dannen Mills, Inc. (MXP). St. Louis: Blanton Mill, Inc. (MP). Ralston Purina Co. (MP). Pennsylvania–Jersey Shore: Pennsylvania Soybean Cooperative Association (SP). Rossmoyne Processing Co. (?). Paoli: The Great Valley Mills (?). South Dakota–Sioux Falls: Western Soybean Mills (MP).

“Tennessee–Tiptonville: West Tennessee Soya Mill, Inc. (LXP). Virginia–Harrisonburg: Central Chemical Corporation of Virginia (SP). Norfolk: Davis Milling Co. (SP). Portsmouth: Allied Mills, Inc. (MP). Wisconsin–Janesville: Janesville Mills, Inc. (SP). Menomonie: Northwest Cooperative Mills (SP).

“Mills processing soybeans on part-time basis.”  
Alabama (6 mills), Arkansas (13), California (7), Florida (1), Georgia (7), Illinois (2), Iowa (2), Kansas (1), Louisiana (9), Minnesota (2), Mississippi (13), Missouri (1), New York (2), North Carolina (14), North Dakota (1), Ohio (2), Oklahoma (13), Pennsylvania (2), South Carolina (4), Tennessee (4), Texas (27), Wisconsin (1).

Note: This is the earliest document seen (June 2018) that mentions Crown Iron Works Co. in connection with soybeans or with solvent extraction plants.

243. *Gazette (The) (Cedar Rapids, Iowa)*. 1948. Traffic court. Oct. 27. p. 8, col. 1.

• **Summary:** “Failure to yield right of way–Reuben Andreas, 525 Vernon drive SE, fined \$2 and costs...”

244. *Soybean Digest*. 1948. Grits and flakes... from the world of soy: Minneapolis Grain Exchange. Nov. p. 42.

• **Summary:** “Arthur M. Hartwell, vice president of General Mills, Inc., has been elected president of the Minneapolis Grain Exchange. R.C. Woodworth, assistant to the president, Cargill, Inc., was named second vice president; and Philip S. Duff, vice president Archer-Daniels-Midland Co., was elected to the board of directors.”

245. National Soybean Processors Association. 1948. Year book, 1947-1948 (Association year). Chicago, Illinois. 71 p.

• **Summary:** The section titled “Officers, directors, and committees” (p. 12-15) lists the following standing committees and the companies and individuals that are members of each: Traffic and Transportation, Research, Technical, Soybeans Grades and Contracts, Oil Trading Rules, Meal Trading Rules, Crop Improvement, Soybean Research Council, Trade Development, Edible Soybean, Uniform Rules and Standards for Soybean Oil Meal, Fire Insurance Committee.

The following organizations and individuals are members of NSPA: Allied Mills, American Soybean Association (George M. Strayer), Archer-Daniels-Midland Co., Borden’s Soy Processing Co., Buckeye Cotton Oil Co., Cargill, Inc., Central Soya Co., Clinton Industries, Inc., Decatur Soy Products Co. Drackett Co., Durkee Famous Foods, Funk Bros. Seed Co. (E.D. Funk, Jr.), General Mills, Inc., Glidden Co., Gooch Milling and Elevator Co., Hoosier Soybean Mills, Inc., Iowa Milling Co., Louisville Soy Products Corp. (E.F. Johnson), Northern Regional Research Laboratory, Pillsbury Feed Mills, Ralph Wells and Company, Ralston Purina Co., Roach Soybean Mills (Howard L. Roach), Shellabarger Soybean Mills, Simonsen Mill-Rendering Plant, Sioux Soya Co., Southland Cotton Oil Co., Soya Processing Co., Spencer Kellogg Co., Swift & Company, Toledo Soybean Products Co. Address: 3818 Board of Trade Building, Chicago 4, Illinois.

246. *Soybean Digest*. 1949. Grits and flakes... from the world of soy: A memorial gift of over \$100,000 to Miller Memorial Hospital in St. Paul, Minnesota. Feb. p. 34, 36.

• **Summary:** “... in memory of Shreve M. Archer, late president of Archer-Daniels-Midland Co., Minnesota, has been made by his widow, Mrs. Doris C. Archer. Mr. Archer was chairman of the hospital’s board of governors for 20 years.”

247. *Soybean Digest*. 1949. Plan soy foods for use in Germany. March. p. 24-25. [3 ref]

• **Summary:** The food nutrition laboratory of Archer-Daniels-Midland Company, Minneapolis, Minnesota, is developing two new foods (tasty soybean “sausages”) based on soy flour, for use in postwar Germany. One sausage is a mixture of 50% meat and 50% soya and vegetables. The other contains no meat, only soya and vegetables.

“A German nutritionist, Dr. William Bening of Frankfurt, can be credited with starting the search for these new and palatable soya foods. He first proposed the use of soybeans to allied food production officials in Germany only a short time after the war had ended in Europe.

“It was already apparent then that it would be a decade or so before his demolished country could expect to be back on a normal meat diet. The individual German, Dr. Bening declares, still is getting less than a pound of meat per month. Milk, fish, and eggs, other sources of animal proteins, are

also extremely scarce.

“The answer, he reasoned, was to use soybeans to fill the breach. He selected the soybean as the best protein source for a logical reason. It is the one vegetable protein that contains a proper balance of the 10 essential amino acids found in meat, and thus, he explains, it can take the place of animal proteins as a tissue builder and source of energy for the German people.

“Moreover, edible soya products contain 50 percent protein and cost only about 5 cents per pound.”

A photo shows Geo. M. Strayer (American Soybean Assoc. Secretary-Treasurer), Dr. William Bening (a German nutritionist from Frankfurt), and R.G. Brierley (Archer-Daniels-Midland Co., Minneapolis).

248. Archer-Daniels-Midland Co. 1949. Cracking the soybean. 600 Roanoke Building, Minneapolis 2, Minnesota. 16 p. Undated. 26 cm. Summarized in *Soybean Digest*, July 1949, p. 23.

• **Summary:** Contents: How America rediscovered the soybean. Edible oils from soybeans. Industrial oils from soybeans. High-protein foods from soybeans. High protein foods from soybeans. Milk, eggs and meat from soybean meal. Materials for modern living from soybeans. Products unlimited from soybeans. What next from the soybean? The meaning of “The scientific shortcut.” On each left-hand page is a full-page photo.

“This company first entered into soybean operations during the 1920’s. In 1934, after long study of European research, ADM opened the first U.S. plant for extraction of soybean oil by the solvent process.” In recent years ADM has introduced new soybean oils for use in paints, varnishes, enamels, and lacquers: Soyagel, Varsoy, Soyalene, Ardol, and OKO. “Recently, ADM created a sensation with the introduction of Admerols—a series of basic new materials for paint-making.” Linoleum can now be made with a high content of ADM soybean oils.

“Among the specialty soy food products created by ADM research are Bakers Nutrisoy, Packers Granular, various granulations of Soy Grits, Nutriwhip, and Archer Brew Flakes. Bakers Nutrisoy adds many values to baked goods of every kind. Packers Granular is a wholesome, nutritious binder used in making sausage and meat loaves. Nutriwhip, made from soybean grits, is a whipping agent used in marshmallow, frappe, [mazetta and nougat], and many delightful bakery and candy products. ADM Soybean Brew Flakes are used as a yeast food and foam stabilizer, in the finest modern brewing.”

In 1947 nearly 25 million pounds of soybean adhesives were used in the manufacture of softwood plywoods. These adhesives, made by ADM, though not waterproof, are highly water resistant. ADM also makes Kaysoy, an adhesive which binds the decorative coating to wallpaper. Kaysoy proteins are also used in the manufacture of coated printed papers (to

hold clay coating to the sheet), in making tape joint cement, in insecticide sprays (to make them spread easier and stick better), and cold water-based paints, and in many other industrial applications.

ADM also makes lecithin for use in baking and candies, soaps and dry cleaners, cosmetics, gasoline and oils.

In the section titled “What next from the soybean?” we read: “Or ponder this potent fact: Two acres of land can produce about 8 to 10 pounds of wool per year, but the same acres can produce about 400 pounds of soybean protein, for synthetic wool. Such facts and figures have explosive force, in any free economy.” Address: Minneapolis, Minnesota.

249. *Soybean Digest*. 1949. Grits and flakes... from the world of soy: George Schmidt, Archer-Daniels-Midland Co., Decatur, Illinois, has announced the invention of a new car unloader. July. p. 46.

• **Summary:** “His working table model is distinctive for its moveable telescoping boom, by means of which one operator can place the shovel into any corner of the car. Two hydraulic cylinders on the side break down the doors, saving time.”

250. *Barron's National Business and Financial Weekly*. 1949. Lower commodity prices accounted for the 10% drop in earnings for Archer-Daniels-Midland Co... Aug. 29. p. 35.

• **Summary:** “Lower commodity prices accounted for the 10% drop in earnings for Archer-Daniels-Midland Co. for the fiscal year ended June 30. Volume was higher; net profits were down 2.5% at \$12,041,752. Sales results since 1939 pleased T.L. Daniels, president, who said: ‘... A very large part of our sales growth has resulted from (value added by processing). We have won business on new products and in new fields which accounts for 40% of the total sales gain.’” Address: New York.

251. Fisher, H.J. 1949. Commercial feeding stuffs: Report on inspection, 1948. *Connecticut Agricultural Experiment Station, Bulletin No. 533*. 130 p. Aug. [51 ref]

• **Summary:** Contents: The feed law. Regulations. Registrations. Inspection, summary of: Commercial feeding stuffs, vitamin D carriers, miscellaneous feeds, biological specimens examined for poisons, A.F.C.O. samples [AFCO = American Feed Control Officials]. The Connecticut broiler ration. Determining guaranties. Analyses: Table 1. Commercial feeds. Table 2. Vitamin D carriers. Index.

Connecticut’s “feed law” regulates commercial feeding stuffs (p. 3-6).

Under 1948 regulations we read that for this calendar year, 244 firms registered 1,413 brands of feeding stuffs. An asterisk after the number of brands means that the word “soybean” is mentioned—typically as “soybean oil meal.” Two asterisks means that all brands listed contain the word “soybean.” Soy related companies include:

Albers Milling Co., 111 W. Massachusetts St., Seattle

4, Washington (1 brand). Allied Mills, Inc., 3400 Board of Trade Bldg., Chicago, Illinois (38). Archer Daniels Midland Co., Minneapolis 2, Minnesota (5\*). Bisbee Linseed Co., 2100 Lincoln-Liberty Bldg., Philadelphia 7, Pennsylvania (2\*). Borden’s Soy Processing Co., Div. of the Borden Co., Kankakee, Illinois (1\*\*). The Buckeye Cotton Oil Co., Cincinnati, Ohio (3\*). Cargill, Inc., 761 Chamber of Commerce, Minneapolis 15, Minnesota. (3\*). Central Soya Co., Inc., 300 Ft. Wayne Bank Bldg., Fort Wayne, Indiana (2\*).

It is surprising to see what things end up being sold for animal feed. Brewers and distillers (such as Anheuser-Busch, Seagram, or Hiram Walker) sell “Budweiser Brewers’ Dried Grains,” “Corn Distillers Dried Solubles,” “Corn Distillers Grains with Solubles,” “Distillers’ Dried Grains,” or “Dried Grains with Solubles.” Rendering companies (which convert waste animal products from slaughterhouses into stable, saleable products) sell “Bone Meal” “Steamed Bone Meal,” “Meat and Bone Scrap,” or “Fish Meal.” Dairy processors sell “Feed Grade Dried Skim Milk” or “Dry Buttermilk.” Sugar refineries sell “Molasses Dried Beet Pulp.” Condensing companies sell “Condensed Whey-Product” or “Dried Whey.”

Of the 967 “Commercial feeding stuffs” tested, 10% (96 samples) were deficient, but 96% met all guaranties of protein, fiber, and fat content. Address: Chemist in Charge, New Haven, Connecticut.

252. Brierley, R.G. 1949. Soy flour in European occupied areas. *Soybean Digest*. Sept. p. 44-45, 88.

• **Summary:** “Soybeans are worth more money! Your able officers have made that statement a by-word to an ever growing soybean industry, and there isn’t a thinking member here who doesn’t heartily subscribe to that well chosen slogan.”

The “sound permanent way to make soybeans worth more money is to so increase the value of their end products in human nutrition, in animal nutrition, and in industrial utilization, that the processor can afford to pay better prices for his raw material. In a sound economy the products made from the soybean have to be worth more before soybeans can command better prices. To be worth more, the products of the soybean must first give more value to civilization, and secondly be so recognized that they get into every day usage.

“I’ve been asked to talk today about my recent trip to Germany and the status of the German soy flour program. I want to tell you first that the trip was the outcome of our conviction that soybean products can be worth more. It was the culmination of work done over the last 7 years by a small group of determined processors to establish edible soy flour as a premium product that could increase the gross revenue of the processor and build new values for the soybean.

“Dr. Bening, my able collaborator while I was in Germany, and the man who has done more for the soybean

industry in Germany than any other man, fortunately is here to give you some first-hand information on the soy flour program we started in Germany. But I want to introduce the subject by sketching some of the background that led up to this German soy flour program, and in so doing, to give you some idea of what the processor goes through in creating new and more lucrative markets for soybean products, so that he can afford to increase his bids to you on soybeans.

“Prewar infant: Soy flour was a rather new and struggling infant when the war started. But it was sound economically and nutritionally, and had more to offer a protein starved world than any other single food product. As compared with the familiar protein foods, milk, eggs, and meat, it was ridiculously cheap. On a unit protein basis it was only 25 percent the cost of the next lowest competitive protein food, milk powder, and so far as calories per pound were concerned soy flour was the same as carcass beef and 25 percent less than other foods which were essentially carbohydrate foods. From a nutritional standpoint soy flour, if properly processed, was the equal of milk in protein quality. We had proved that it was the greatest supplement food there was when incorporated into other basic foods. By adding it to bread, meat products and many allied foods, we were not only adding superlative protein, but the protein was increasing the efficiency of the other proteins in those familiar foods. Our Dr. Hayward and other investigators spent many weary and expensive hours proving that edible soy protein was nutritionally one of the finds of the century.

“But in competitive business, having a superlative product is not enough. It has to be sold. It has to take its place and win its recognition alongside other established products. We can tell you from personal experience that it takes time, money, courage, and faith to establish a new product. Normal prejudice toward a new product is hard enough to overcome; but even harder is the fight against calculated prejudice—calculated prejudice originating from competitive products that see in your new product a threat to their future—calculated prejudice coming from a few complacent members of your own industry who feel you should withdraw from the market until your product is absolutely perfect—calculated prejudice from those few government officials who resist progress and change.

“Despite its merits, soy flour started out as a sort of bootleg item in meat products. It took years of concentrated effort and exhaustive evidence (with a new product you are wrong until proved right) before the Bureau of Animal Industry finally recognized soy flour as a permitted binder for sausage. It took expensive technical talents to prove the case for soy flour as an optional ingredient in bread during the food and drug hearings in Washington [DC]. It has taken much promotional and demonstration work to introduce soy flour and then resell it every time a demonstrator of other competitive foods takes it out of a customer’s formula. It has taken persistence and exhaustive evidence to

disprove the many bizarre rumors that have been started by unscrupulous competition.

“Difficulties: The difficulties involved in introducing a new product and creating new value for soybeans is typified by the difficulties which sent me to Germany. The Army had sent about 200,000 tons of soy flour to Germany. The industry had turned everything upside down to produce the soy flour on practically no notice. Then just as suddenly the program was stopped. Ill-advised political pressure had fostered a costly and ridiculous potato flour program on the Army. At the same time rumors started to come back from Germany, indicating the soy flour program was a failure because of inherent weaknesses in the product. We were told that the soy flour we had shipped contained residual solvent and was ‘dangerous’ to health, that the soy flour was not adequately debittered and gave an off flavor to the bread in which it was used, that soy flour was in the grain allocation and would have to be taken out before it could be distributed, that soy flour was being distributed by oil millers who knew nothing of the product, that soy flour was so bad it was making bread unsalable, that soy flour was backing up so much in distribution that we’d have a surplus of soy flour in Europe for years to come, and that soy flour couldn’t compete with potato flour as a bread ingredient.

“In view of that imposing list of objections, my firm [ADM] decided to take the plunge and send me to Europe to get a factual report for the future if nothing else. It was an expensive gamble but one of the many we’ve taken in trying to realize new values for the soybean.

“Upon arriving in Germany, I was literally adopted by a highly competent but terribly understaffed food group to get the real story on soy flour usage in Germany and then find ways and means of moving the soy flour stocks, and then sell the German food administration on the absolute necessity of proper soy flour utilization if the protein crisis in Germany was to be met.

“6-weeks’ tour: I traveled for 6 weeks in Germany with Army car and driver and with Dr. Bening as interpreter, advisor, and friend. During that time I saw virtually all the key food men in the Allied zone. I talked to most of the responsible allied food men, to the leaders of the German food administration, to the principals of the Ruhr coal control group, to the doctors of the Max Planck Institute (the most prominent human nutrition laboratory in Germany), to the key baby doctors in Bremen and Hamburg, to the principals of the Kralog relief group, to mayors, senators and administration men in most of the principal cities of Germany, to bakers, meat packers, consumer representatives, union leaders, and to a group of over 50 soybean processors and importers. I inspected stocks of soy flour. Dr. Bening and I worked day and night on the most intensive job I’ve ever been on.

“I feel that the findings of that trip are significant for the future of making soybeans worth more by incorporating

them directly in food products. These facts have already been turned over to the Army.

“I found first that the quality of the soy flour was excellent except for two small lots made by two new processors whose minor production had meant virtually nothing in the large over-all program. There was no bad odor or rancidity as per samples carefully drawn and subsequently re-examined” (Continued). Address: Asst. Vice President, Archer-Daniels-Midland Co., Minneapolis, Minnesota.

253. Brierley, R.G. 1949. Soy flour in European occupied areas (Continued—Document part II). *Soybean Digest*. Sept. p. 44-45, 88.

• **Summary:** (Continued): “I found the man that started the benzine odor story. He had mentioned, incidentally, in a report that a color he observed in samples examined under a fluoroscope might show residual solvent, but had subsequently found the same color in samples of whole soybeans. Because of this he had dropped his investigation and was so little concerned that he was taking his laboratory samples home and feeding them to his child with excellent results.

“Bread troubles: I found next that the trouble with any soy flour in bread was that it was the last of a series of grain flour substitutes, and therefore bore the brunt of the criticism of bread in general. Bread was being made with potato flour, corn flour, rye flour, and wheat flour almost incidentally. The incorporation of high percentages of soy flour on top was the straw that broke the camel’s back. To add to the difficulties scheduling of soy flour shipments and stock was so upset by shipping difficulties that the soy flour came in all at once on German distributors who knew nothing more about soy flour than that the name made it sound like a type of wheat flour. Maldistribution and the lack of wheat flour resulted in some bread that was almost 100 percent corn flour, and other breads predominately soy flour. The resulting bread was an abomination. Corn flour and soy flour took the brunt of the public criticism because they were the new and unknown products.

“I found next a soybean industry hopelessly divided and pulling against each other. If there was ever proof for the necessity of a united soybean industry, I found it here. The full fat manufacturers, the oil millers, the growers, the soy importers were all pulling in different directions. There was no united front to present to the government and competitive food interests were having a merry time punching away at the soy program. I gave one of the most difficult speeches of my life, with interpretation, sentence by sentence, to a group of 50 soybean principals in Hamburg, urging them to recognize the needs of Germany for new protein foods and to present a united program to their government food men calling for more soybeans and soy products. I am happy to say that they did present such a program and that it was the start of the present utilization of soy flour in sausage.

“I found next a universal recognition of the terrible lack of protein which could not be touched in any foreseeable future by meat production increases. The prewar production of meat in Germany was 45 kilos per person. The consumption at the turn of the year was 9 kilos. Even the most optimistic estimates for the next 5 to 8 years were for about 50 percent of prewar meat consumption. The problem, however, was to get public recognition of this situation and to stop the wish-thinking philosophy that something would suddenly pop up to solve the meat problem other than the actual development of new protein foods.

“The first few weeks of the trip convinced me that politics in Washington [DC] was going to force large quantities of corn flour and potato flour into German bread. This left no place for soy flour in bread. It was necessary therefore to look around for another outlet for soy flour and the logical place was the meat program. Meat was so short that the ration was a farce—so short that the black market was in full operation, and little could be done about it. Soy flour had been used successfully in meat in this country so it seemed a logical starting point. The first problem was to take the products that were available and try to compound them into new protein foods that could be put up in casing form so that they would resemble meat. The technical problems were imposing and destruction had been so devastating that research facilities were almost non-existent. It was decided to start the work in the United States and then complete it in Germany.

“Our research laboratory as well as others in the industry were put to work on the problem and samples were sent to Germany. The soy flour association [sic, Soy Flour Association, Chicago, Illinois] brought Dr. Bening to the United States and I traveled with him for 4 weeks to show him American facilities and to show him the progress of work here. He then went back to Germany where work continued under the sponsorship of the German and Allied food men. The end result was a new product containing 50 percent meat and 50 percent soy flour and vegetables and other ingredients, which when made up and put in casing was so good that it fooled the experts. After substantial trials and tribulations, this product was produced and introduced into consumption.

“Bright future: The introductory job has been an imposing one. The meat people had to be sold. The chemists and food police had to be placated and cajoled into some sort of cooperation. The consumer took the product without question and with considerable enthusiasm, because it was not only good, but about half the price of meat. The sales promotion job is only just started, but the future looks bright, and before another 6 months have passed we will have proved that this new product can solve what seemed like an insuperable problem when we first tackled it. Dr. Bening will undoubtedly tell you more of this...” Address: Asst. Vice President, Archer-Daniels-Midland Co., Minneapolis,

Minnesota.

254. National Soybean Processors Association. 1949. Year book, 1949-1950 (Association year). Chicago, Illinois. 73 p.  
 • **Summary:** On the cover (but not the title page) is written: "Year Book and Trading Rules, 1949-1950." Contents: Constitution and by-laws (incl. committees, code of ethics). Officers, directors and committees for 1949-50. Membership of the National Soybean Processors Association. Trading rules governing the purchase and sale of soybean oil meal. Appendix to trading rules on soybean oil meal: Official methods of analysis (moisture, protein, oil, crude fiber—official, sampling of soybean oil meal). Trading rules on soybean oil. Appendix to trading rules on soybean oil: Uniform sales contract, standard specifications for crude soybean oil for technical uses, methods of analysis (A.O.C.S. official methods): Refining loss (expeller and hydraulic soybean oil)—Ca 9a-41, refining loss (extracted soybean oil)—Ca 9b-46, refining loss (degummed hydraulic and extracted types soybean oil)—Ca 9c-49, refining loss (degummed expeller type soybean oil)—Ca 9d-49, bleaching test (refined soybean oil)—Cc 8b-49, grading soybean oil for color (N.S.P.A. tentative method), color—Wesson method using Lovibond glasses—Cc 13b-45, sampling—C 1-47, flash point (A.O.C.S. tentative method—Cc 9b-48). Moisture and volatile matter: Vacuum oven method—Ca 2d-25. Break test—Modified Gardner method—Ca 10-40. Iodine value—Wijs method—Cd 1-25. Unsaponifiable matter—Ca 6a-40.

Handwritten: *Soybean Farming* is now available; prices are given for non-members and members, for 100 to 1,000 copies. Assessments: Regular \$.0004 per bushel, 40 cents per 1,000, \$400 per million. Max. \$3,200 per year. Min. \$100 per year. July 6 meeting decreases the regular assessment to \$0.0003 per bushel.

The section titled "Officers, directors, and committees" (p. 12-15) states: President: R.G. Houghtlin. V.P., Chairman Executive Committee: G.G. Golseth. Secretary: W.L. Shellabarger. Treasurer: H.E. Carpenter. Executive Committee: R.G. Golseth, Chairman, H.E. Carpenter, E.A. Cayce, Philip S. Duff, W.H. Eastman, Jasper Giovanna, R.G. Houghtlin, W.L. Shellabarger.

Board of Directors (Term expiring Sept. 1950): D.O. Andreas, E.A. Cayce, Jasper Giovanna, R.G. Golseth, H.R. Schultz, H.R. Scroggs. (Term expiring Sept. 1951): Dwight Dannen, Roger Drackett, W.H. Eastman, R.B. Jude, W.H. Knapp, Karl Nolin. (Term expiring Sept. 1952): S.E. Kramer, Philip S. Duff, D.W. McMillen, Jr., Clarence E. Peters, J.J. Quinlan, Ralph Wells.

Standing committees: For each committee, the names of all members (with the chairman designated), with the company and company address of each are given—Traffic and transportation. Technical. Soybean grades and contracts. Oil trading rules. Meal trading rules. Crop improvement. Soybean research council. Uniform rules and standards for

soybean oil meal. Safety and insurance. Lecithin. Regional: Ohio, Michigan, and East; Illinois, Indiana, Kentucky, Wisconsin; Iowa, Minnesota, Nebraska, South Dakota; Missouri, Kansas, and Mississippi River Delta Sections. Handwritten on blank facing pages: Nominating committee. Reception committee. Official weights committee. Crop Improvement steering committee. Two new members (people; Francis E. Calvert, The Drackett Co., Oct. 1949).

The following organizations, and individuals are members of NSPA: Albers Milling Co., Los Angeles, California (W.P. Kyle). Allied Mills, Inc., Board of Trade Bldg., Chicago, Illinois; Peoria, Illinois; Taylorville, Illinois; Omaha, Nebraska; Portsmouth, Virginia. Archer-Daniels-Midland Co., Box 839, Minneapolis 2, Minnesota; Chicago, Illinois; Decatur, Illinois; Fredonia, Kansas. Big 4 Cooperative Processing Assn., Sheldon, Iowa (Chas. W. Hanson). Blanton Mill, Inc., St. Louis, Missouri (Ross A. Woolsey, Jr.). Boone Valley Cooperative Processing Assn. Eagle Grove, Iowa (Edward Olson); Hubbard, Iowa (D.E. Weld). Borden's Soy Processing Co., Chicago 4, Illinois (C.E. Butler -> J.R. Pentis); Kankakee, Illinois; Waterloo, Iowa. Buckeye Cotton Oil Co. (The), Cincinnati, Ohio (W.H. Knapp); Louisville, Kentucky; New Madrid, Missouri; Raleigh, North Carolina; Memphis, Tennessee. Cargill, Inc., Minneapolis, Minnesota (D.O. Andreas); Springfield, Illinois (Eric Nadel); Cedar Rapids, Iowa (C.W. Bohlander); Fort Dodge, Iowa (H.E. Marxhausen -> R.F. Hubbard); Spencer, Iowa (W.J. Wheeler); Washington, Iowa (Hugo Lensch). Central Iowa Bean Mill, Gladbrook, Iowa (Paul H. Klinefelter). Central Soya Co., Inc., Fort Wayne 2, Indiana (E.W. McMillen, Jr.); Gibson City, Illinois (T.H. Allwein); Decatur, Indiana (C.I. Finlayson); Marion, Ohio (R.W. Fay). Clinton Industries, Inc., Clinton, Iowa (E.W. Myers). Colchester Processing Co., E. St. Louis, Illinois (E.L. McKee). Concord Soya Corporation, Concord, Michigan (Harold K. Rapp; crossed out). Consumers Co-op Assn., Kansas City 13, Missouri (F. Dean McCammon). Consumers Soybean Mills, Minneapolis 15, Minnesota (Riley W. Lewis). Dannen Grain & Milling Co., St. Joseph, Missouri (Dwight L. Dannen). Decatur Soy Products Co., Decatur, Illinois (Jasper Giovanna). Delphos Grain and Soya Products Co., Delphos, Ohio (Floyd E. Hiegel). Doughboy Industries, Inc., Fairfield, Iowa. Drackett Co. (The), Cincinnati 32, Ohio (Roger Drackett). Eastern Iowa Milling Co., New Hampton, Iowa (G.A. Ward). Farmers Cooperative Assn., Ralston, Iowa (Karl Nolin). Farmers Cooperative Co., Dike, Iowa (C.M. Gregory). Farmers Cooperative Elevator, Martelle, Iowa (H.B. Lovig). Fayette Soybean Mill, Fayette, Iowa (L.A. Rose). Fremont Cake and Meal Corp., Fremont, Nebraska (Harry E. Wiysel). Frith (E.E.) Company Inc., Dubuque, Iowa (E.M. Weicher). Funk Bros. Seed Co., Bloomington, Illinois (H.A. Abbott). Galesburg Soy Products Co., Galesburg, Illinois (Max Albert). General Mills, Inc., Chem. Div., Minneapolis 1,

Minnesota (W.H. Eastman); Belmond, Iowa (E.E. Woolley). Glidden Co. (The), Chicago 39, Illinois (R.G. Golseth). Gooch Milling & Elevator Co., Lincoln 1, Nebraska (M.R. Eighmy). Haynes Soy Products Inc., Portland, Indiana (Clarence E. Peters). Hemphill Soy Products Co., Kennett, Missouri (W.A. Hemphill). Holland Pioneer Mills, Inc., Ohio City, Ohio (G.A. Holland). Honeymead Products Co., Mankato, Minnesota (L.W. Andreas); Hoosier Soybean Mills, Inc., Marion, Indiana (J.H. Caldwell, Jr.). Huegely Elevator Co., Nashville, Illinois (J.W. Huegely). Hulcher Soy Products, Virden, Illinois (Norman E. Hulcher). Iowa Milling Co., Cedar Rapids, Iowa (Jos. Sinaiko). Iowa Soy Co., Redfield, Iowa (H.R. Straight). Ipava Farmers Processing Co., Ipava, Illinois (F.P. Brown). Janesville Mills, Inc., Janesville, Wisconsin (A. Roger Hook). Kansas Soya Products Co. (The), Emporia, Kansas (Ted W. Lord); Kansas City 3, Kansas (Richard W. Lord). Ladd Soya, Inc., Bunker Hill, Indiana (Wayne Ladd). Lexington Soy Products Co. (The), Lexington, Ohio (H.E. Carpenter). Louisville Soy Products Corp., Louisville, Kentucky (H.A. Miller). Marshall Mills Inc., Marshalltown, Iowa (J.I. Johnson). Muscatine Processing Corp., Muscatine, Iowa (G.A. Kent). North Iowa Cooperative Processing Association, Manly, Iowa (Glenn Pogeler). Northwest Cooperative Mills, St. Paul, Minnesota (Anthony H. Roffers). Ohio Valley Soybean Co-op, Henderson, Kentucky (G.W. Allen). Owensboro Grain Co., Owensboro, Kentucky (William M. O'Bryan). Pacific Vegetable Oil Corp., San Francisco 7, California (B.T. Rocca, Jr.). Pillsbury Soy Mills, Clinton, Iowa (H.R. Schultz); Centerville, Iowa (H.R. Schultz). Postel (Ph. H.) Milling Co., Mascoutah, Illinois (A.S. Lee). Quincy Soybean Products Co., Quincy, Illinois (Irving Rosen). Ralston Purina Co., St. Louis 2, Missouri (D.B. Walker); Kansas City, Missouri (F.G. Franze); Lafayette, Indiana (Ralph Guenther); Iowa Falls, Iowa (H.N. Johnson); Circleville, Ohio (A.V. Couch); Champaign, Illinois -> Bloomington, Illinois (N.B. Morey). Roach Soybean Mills, Plainfield, Ohio (Howard L. Roach). Shellabarger Soybean Mills, Inc., Decatur 30, Illinois (W.L. Shellabarger). Simonsen Mill Rendering Plant, Quimby, Iowa (W.E. Simonsen). Sioux Soya Co., Sioux City 2, Iowa (J.L. Ward). Southern Cotton Oil Co. (The), Goldsboro, North Carolina (W.V. Westmoreland); Tarboro, North Carolina (W.A. Moore). Southland Cotton Oil Co., Paris, Texas (Richard H. Blyth). Soya Processing Co., Wooster, Ohio (H.H. Heeman). Soya Extraction Div., Continental Grain Co., Columbus 9, Ohio (D.H. Wilson—company crossed out). Soy-Rich Products, Inc., Wichita, Kansas (Ralph S. Moore). Spencer Kellogg and Sons, Inc., Buffalo 5, New York (Robert B. Jude); Chicago, Illinois; Decatur, Illinois; Des Moines, Iowa; Bellevue, Ohio (Harry Stokely). Sterling Soybean Co., Inc., Rock Falls, Illinois (Edward J. McGinn). Swift & Co., Union Stock Yards, Chicago 9, Illinois (S.E. Cramer). Thomson Soya Products, Hiawatha, Kansas (A.G. Thomson). Toledo Soybean

Products Co., Toledo, Ohio (J.H. Brown). Wells (Ralph) & Co., Monmouth, Illinois (Ralph Wells). West Bend Elevator Co., West Bend, Iowa (R.W. Jurgens). Western Soybean Mills, Sioux Falls, South Dakota (E.A. Woodward). Williams Milling Co., Sac City, Iowa (Leo W. Williams).

Organizations represented on committees: U.S. Regional Soybean Laboratory, Urbana, Illinois (John C. Cowan, R.T. Milner).

Handwritten: New members added since publication of the Trading Rules Book—1949. Falk & Co., Pittsburgh, Pennsylvania (Willard Lighter, Jan. 1950). Minnesota Linseed Oil Co., Minneapolis 21, Minnesota (R.J. Lundquist, May 1950). Farmers & Merchants Milling Co., Glencoe, Minnesota (L.H. Patten, Mgr., May 1950). Riverside Oil Mill, Marks, Mississippi (William King Self, Aug. 1950). Planters Manufacturing Co., Clarksdale, Mississippi (A.K. Shaefer, Sept. 1950).

Associate Members: Arcady Farms Milling Co., Chicago 6, Illinois. Armour & Co., Chicago 9, Illinois (John H. Noble). Aubrey & Co., Louisville, Kentucky. Best Foods, Inc., New York, NY. Capital City Products Co., Columbus, Ohio. Cooperative Mills Inc., Baltimore 30, Maryland. Cox (Chas. M.) Co., Boston, Massachusetts. Foxbilt Inc., Des Moines, Iowa. Humco Co. (The), Memphis 1, Tennessee. Kraft Foods Co., Chicago, Illinois. Lever Bros Co., Lever House, Cambridge, Massachusetts. Pittsburgh Plate Glass Co., Paint Div., Pittsburgh, PA. Procter & Gamble Co., Cincinnati, Ohio. Spartan Grain & Mill Co., Inc., Spartanburgh, South Carolina. Tuckers (Mrs.) Foods, Inc., Sherman, Texas. Wilson & Co., Chicago, Illinois. Handwritten: New Associate Members: Clark Mills Inc., Minneapolis 15, Minnesota.

Note: Apparently Continental Grain Co. was not a member this year. They were a member by 1975. Address: 3818 Board of Trade Building, Chicago 4, Illinois.

255. *Soybean Digest*. 1949. Back from Europe. Sept. p. 108. • **Summary:** Dwayne Andreas and Dr. Julius Hendel returned recently from Europe after attending the International Association of Seed Crushers Conference at Montraux, Switzerland. “Both men are vice presidents of Cargill, Inc., Minneapolis, Minnesota.”

“Andreas and Hendel also traveled in Germany, France, Denmark, Holland and Belgium conferring with Cargill agents and customers in the vegetable oil and oilseed business. They spent some time studying the German situation in Hamburg and Frankfurt and were amazed to see the rapid progress being made under the impetus provided by tremendous American expenditures and the apparent determination of some Americans to rebuild Germany as soon as possible.” A small portrait photo shows Dwayne Andreas.

256. Hunter, Robert. 1949. Archer-Daniels: Research,

new products lead way to tremendous postwar growth. A company study. *Barron's National Business and Financial Weekly*. Oct. 31. p. 11.

• **Summary:** Today the ticker tape symbol of the Archer-Daniels-Midland Co., the largest company of its kind in America, was changed to "ADM" from "ADD." The old symbol was an apt one for postwar progress. "To the investor in search of 'growth' companies Archer-Daniels ranks as a find."

Growth during the last four postwar years has been startling. Net sales rose from \$61.9 million in 1939, to \$181.9 million in 1946, up to \$277.0 million in 1949. Net income, after income taxes, was \$1.8 million in 1939, \$6.6 million in 1946, \$15.7 million in 1947, \$12.3 million in 1948, and \$12.0 million in 1949. For the past 4 years, net income averaged 4.3% of sales. Stated another way, since 1946, net sales have 287% and net income 346%.

ADM is the leading processor of linseed oil, the fourth largest flour miller, "and one of, if not the largest processor of soybeans in the country. It leads all others in the production of core oils for foundries." Its sales to industry are much more important than its direct sales to consumers. Whenever possible, ADM management hedges its purchases of raw materials by sales in the futures market or by forward sales of the completed products. Though prices of the raw materials it processes fluctuate sharply, the company has earned a profit every year since it was incorporated in 1923 and has never failed to pay a dividend since 1927. At the end of the past fiscal year, on 30 June 1949, the company had no bank debt, no notes, and no preferred stock. "ADM's growth has been due to its excellent research department and to the 'plough-back' or earnings into the business." Over the past 4 years the net value of ADM's plants has risen to \$29.9 million from 9.5 million.

The central laboratory of ADM's research department has played a leading role in finding new uses for current products and developing new products and processes. ADM claims to have had many "firsts." During the 1920s it claims to have been the first to use the solvent extraction process on soybeans to recover the oil. [Note: Several companies used solvent extraction on soybeans before ADM began in 1934]. In the 1930s ADM, along with associates, found a way to separate lecithin from soybean oil and helped to reduce the price of lecithin from \$10/lb to less than \$1/lb. Address: New York.

257. *Illinois Central Magazine*. 1949. Soybeans: The miracle crop. Illinois Central helped establish crop in Illinois, which today leads the entire country in production. 38(5):8-9. Nov.

• **Summary:** Contents: Introduction. Once little known in America. Railroad took lead. Illinois raises big third. Is leading vegetable oil. Widespread medicinal use. Harvest is one of greatest.

Not many years ago, the soybean "was known to [most]

Americans only as the zestful Chinese sauce used to pour over chow mein and chop suey.

"In less than two decades soybeans have become a heavy tonnage crop for the railroads. Soybean traffic on the Illinois Central has continued to grow by leaps and bounds during the past 14 years. In 1935 the railroad handled approximately 175,000 tons of beans amounting to 4,300 cars with a revenue of \$367,000. By 1948, soybean tonnage had reached the astounding total of more than a million tons loaded in more than 20 thousand cars with a revenue of \$2,701,453, an all-time high."

"This phenomenal growth in tonnage is a tribute to the early faith and efforts of the Illinois Central in promoting soybean cultivation among the farmers along its lines. Grown on only a few thousand acres in 1922, soybeans advanced in the succeeding 25 years to become the fourth largest cash grain crop in the United States.

"The leguminous plant, identified with the history of China as a source of food for man and beast for thousands of years, was introduced into this country in 1804. However it remained only a curiosity for more than a century. A shortage of vegetable oils during World War I focused attention to the soybean as a possible source for an oil substitute. After that war the first commercial plantings were established in North Carolina. However, soybean cultivation migrated westward to become firmly developed in the Corn Belt states of the middle west, where more favorable growing conditions were found.

"Railroad Took Lead: During the initial period of development of the soybean industry, the Illinois Central took a key part in promoting its expansion in the Corn Belt states. The first step in this direction occurred in 1927, when a special 'Soybean Train' was operated in Illinois under the supervision of the Agricultural Department in co-operation with the University of Illinois and several soybean processing establishments. This train attracted great attention. More than 33,000 farmers visited it to learn of the economic value of soybeans as a cash crop for their farms. Farmers soon turned from growing a few acres of beans for hay to planting thousands of acres for threshing and shipment of carload volumes at harvest time. The greenish-yellow beans went to processing mills, where chemists were busy discovering more and more commercial and industrial uses. Corn Belt states, which at times have suffered from a one-crop system, welcomed this supplemental crop that promised to bring new-found wealth.

From this introductory step, interest in the soybean cultivation expanded rapidly. In 1940 two special Illinois Central trains toured Illinois and Iowa bringing further information about soybean cultivation to farmers in those states to aid them in obtaining maximum yields. As a result, Illinois today is the leading soybean producer in country, followed by Iowa and Indiana.

Illinois Raises Big Third: In Illinois alone, production

rose from less than 2½ million bushels in 1927 to almost 50 million bushels in 1941. The high peak came last year when 78½ million bushels flowed like a green-gold river to processing mills.

“Last year national production reached 220 million bushels, Illinois’ share was one-third of the total. The four Corn Belt states of Illinois, Iowa, Indiana and Ohio produce the greatest part of the national crop, although there are some commercial plantings in North Carolina and along the Mississippi River where the four states of Missouri, Arkansas, Kentucky and Tennessee meet. Since 1927, the Illinois Central’s percentage of carloadings from the national production of soybeans has averaged 15 per cent. One year, in 1939, the railroad hauled 20 per cent, or one-fifth of all soybean carloadings.”

A photo (p. 9) shows an aerial view of Decatur, Illinois: “Hungry Mills—Long strings of freight cars, poured millions of bushels of soybeans into the maws of Decatur’s processing mills last month as the harvest hit its peak. In the foreground above is the A.E. Staley Manufacturing Company. The Spencer Kellogg and Sons plant is in the background and behind it is the Archer-Daniels-Midland Company. Another soybean processor, the Decatur Soya Products Company, is not in the picture. Photograph by Decatur Newspapers, Inc.”

258. *Barron’s National Business and Financial Weekly*. 1949. How’s business? Corporate news in review. Dec. 12. p. 16.  
 • **Summary:** “On an overall basis, profit margins are narrower than they were a year ago, said T.L. Daniels, president of Archer-Daniels-Midland Co., but he added that prospects volume-wise are good. All company plants currently are running at capacity.

“For the first quarter, ended September 30, the company earned \$2,063,556, or \$1.26 a share, compared with \$2,627,333, or \$1.60 a share, in the like period last year.” Address: New York.

259. **Product Name:** ADM Supersoy S, and Supersoy C (Salad and Cooking Oils).

**Manufacturer’s Name:** Archer-Daniels-Midland Co.

**Manufacturer’s Address:** 600 Roanoke Building, Minneapolis 2, Minnesota.

**Date of Introduction:** 1949 December.

**Ingredients:** Soybeans.

**New Product–Documentation:** Ad in *Soybean Digest*. 1949. Dec. p. 41. “Announcing... ADM Supersoy. These are ADM’s new soybean salad and cooking oils. Supersoy oils are now in production at our new ultra-modern refinery at Decatur, Illinois. Archer-Daniels-Midland Company: Creating New Values from America’s Harvests.”

260. *Soybean Digest*. 1949. Archer-Daniels-Midland Company’s new soybean oil refinery at Decatur, Illinois...

Dec. p. 36.

• **Summary:** “... was ready to go into production Oct. 30.” The refinery will use crude oil from the company’s new solvent plant at Decatur which went into production last summer. Plans have been announced for a new pilot plant in Minneapolis, Minnesota.

261. *Soybean Digest*. 1949. Announcing—ADM Supersoy (Ad). Dec. p. 41.

• **Summary:** See next page. “The little man with the big spoon has some good news for soybean growers everywhere. He’s the Supersoy Chef who is now telling the world about Supersoy ‘S’ and Supersoy ‘C’, ADM’s new soybean salad and cooking oils.

“Supersoy oils are now in production at our new ultra-modern refinery at Decatur, Illinois. We think they are the finest quality salad and cooking oils ever offered. If industry agrees, Supersoy will help build the market for your soybean crops year after year.

“Aggressive advertising and promotion of soybean products is an old tradition with ADM. In the case of Supersoy we plan to make the little man with the big spoon one of the best salesmen *you’ve* ever had.”

Across the bottom of this ad is written: “Creating New Values from America’s Harvests.” Address: 600 Roanoke Building, Minneapolis, Minnesota.

262. **Product Name:** Soy Gluten Flakes.

**Manufacturer’s Name:** Archer Daniels Midland Co.

**Manufacturer’s Address:** 600 Roanoke Building, Minneapolis 2, Minnesota.

**Date of Introduction:** 1949.

**New Product–Documentation:** Soybean Blue Book. 1949. p. 100.

263. **Product Name:** Kaysoy (Industrial Soy Flours).

**Manufacturer’s Name:** Archer-Daniels Midland Co.

**Manufacturer’s Address:** 600 Roanoke Building, Minneapolis 2, Minnesota.

**Date of Introduction:** 1949.

**New Product–Documentation:** Booklet. 1949. *Cracking the soybean*. ADM also makes Kaysoy, an adhesive which binds the decorative coating to wallpaper. Kaysoy proteins are also used in the manufacture of coated printed papers (to hold clay coating to the sheet), in making tape joint cement, in insecticide sprays (to make them spread easier and stick better), and cold water-based paints, and in many other industrial applications.

Ad in *Soybean Digest*. 1951. Jan. p. 39. “Charting the future of the soybean.” Kaysoy is listed. Ad in *Soybean Digest*. 1954. Feb. p. 21. “Nature locked the cupboard, but ADM found the key.” Kaysoy is listed.

*Mankato Free Press* (Minnesota). 1962. “Mankato firm processes products from soybeans: Archer-Daniels-

# announcing...



**T**he little man with the big spoon has some good news for soybean growers everywhere. He's the Supersoy Chef who is now telling the world about Supersoy "S" and Supersoy "C", ADM's new soybean salad and cooking oils.

Supersoy oils are now in production at our new ultra-modern refinery at Decatur, Illinois. We think they are the finest quality salad and cooking oils ever offered. If industry agrees, Supersoy will help build the market for your soybean crops year after year.

Aggressive advertising and promotion of soybean products is an old tradition with ADM. In the case of Supersoy we plan to make the little man with the big spoon one of the best salesmen you've ever had.

**ARCHER-DANIELS-MIDLAND COMPANY**

*"Creating New Values from America's Harvests"*  
600 Roanoke Building • Minneapolis 2, Minnesota

ADM  
**Supersoy**

DECEMBER, 1949

41

Midland.” Feb. 23. Kaysoy flour, made in Mankato, is the basis for adhesives used mainly by the plywood and wallpaper industries.

Soybean Blue Book. 1963. p. 101. “Glues, Plywood adhesives.” Address: 733 Marquette Ave., Minneapolis 2, Minnesota.

Note: This flour was probably subjected to a minimum amount of heat so that it had a high PDI (protein dispersibility index).

264. *Soybean Digest*. 1950. New ADM plant [at Mankato, Minnesota]. Jan. p. 21.

• **Summary:** T.L. Daniels, president of the Archer-Daniels-Midland Co., Minneapolis, Minnesota, has announced plans to build a new 3-million-bushel soybean processing plant in Mankato, Minnesota.

The plant is expected to be ready next October in time for the 1950 soybean crop. Plans call for a 150-foot-high grain elevator, a processing structure 3 stories high, and a five-story solvent plant.

Note: An earlier plant was announced by ADM for Mankato in Nov. 1945.

265. *Decatur Daily Review (Decatur, Illinois)*. 1950. What, challenged again?: Mankato, Minnesota, is processing center. Feb. 21. p. 14.

• **Summary:** This is largely a reprint of a recent article from the *Mankato Daily Free Press* that gives a complete history of the soybean crushing plant at Mankato, Minnesota.

Mankato, where 3,600,000 bushels of soybeans were turned into oil and meal last year, is the biggest soybean crushing center west of the Mississippi [river], local processors estimate. “And next to Decatur, Illinois, its the biggest in the nation.

“Next year that figure, handled by Honeymead Products, Inc., will be doubled when Archer-Daniels-Midland opens a huge new plant here.

“When Honeymead’ took over a small soybean plant here in August, 1947, about 300,000 bushels were processed in Mankato annually.

“The credit for founding the soybean processing industry in Mankato—and thus laying the base for its phenomenal growth—belongs to a group of Mankato businessmen headed by T.M. Coughlan and S.B. Wilson, however. It was in 1939 when they and their associates set up a Mankato Soybean Products Inc., plant in West Mankato. But, although the business was rated a success, they found it difficult to convince Southern Minnesota farmers that soybeans would be a profitable crop. As a result the production of beans in the area wasn’t much more than one or two per cent of its present total. The Mankato plant found it necessary to ship [soy] beans from Iowa and Illinois for processing.

“In 1943 the Mankato plant was sold to the Washington Cooperative Egg and Poultry association, which operated it

until 1947, when Honeymead took over.”

“Eleven years ago Southern Minnesota farmers found it hard to see the possibilities in a grain which sold for 65 cents a bushel.

“Today the rich soil of Blue Earth county produces more soybeans than any other county in Minnesota. “The state’s top soybean-growing area lies within a 60-mile radius of Mankato.

“Almost 63,000 acres in this county produced 1,500,000 bushels of soybeans in 1948 to lead the state. Last fall’s figures, not yet compiled, will probably be somewhat higher.

“Soybeans today are the No. 2 money crop of Blue Earth county farmers, right behind corn.

“Blue Earth County Agent Quentin Marsh estimates that in 1949, 119,000 acres were planted with corn, 81,000 in oats and 65,000 in soybeans. Oats, while topping soybeans in acreage, doesn’t bring the cash return of beans, selling today at 64 cents a bushel against \$2.13 for soybeans.

“What turned Mankato—an agricultural retail center—into one of the nation’s main processing centers?

“How to account for what amounts to a crop revolution which hiked just one county’s soybean production by 60 times in a decade?

“Price, for one thing. In that time soybeans jumped from 65 cents a bushel to a peak of more than \$4 a bushel. The price now has settled to \$2.13 as of today and has stayed at about that level for the last year. But other things helped.

“Quentin Marsh, county agent, says Blue Earth county’s flat terrain and clayish soil makes the area a soybean-growing Eden.

“For example, the county’s yield per acre in 1948–24 bushels per acre—was the highest in the state.

“C.L. Marshall, Honeymead Products, Inc., vice president, says local soybean-processing facilities create a much better market for farmers.

“Favorable freight rates, gained by Mankato’s location, was another reason cited by Otis Smith, general manager of Hubbard & Palmer, a local firm which buys and ships up to five million bushels of grain a year.

“Mankato’s central location in the soybean-growing area was a major factor in locating the new Archer-Daniels-Midland processing plant here, according to President T.L. Daniels.

“The service by four railroads and a large local market for soybean oil were still other reasons given by Daniels.

“Whatever the reasons. Southern Minnesota’s underdog crop has pulled an ironic trick. Processors imported soybeans 10 years ago. Today, as much as two-thirds of Minnesota’s production is at times shipped to Iowa and Illinois for processing.”

266. Brierley, R.G. 1950. Problems in the promotion of soy flour. *Soybean Digest*. Feb. p. 18-20.

• **Summary:** From an address before the Peoria, Illinois,

soybean conference. "The basic problem in promoting soy flour is that its greatest selling point is nutrition and no one seems to give a darn about nutrition in human food." This is a sad commentary on life in America. Another key selling point is its price. But we have to educate people. "How many people realize that soy protein is the cheapest vegetable protein available for human consumption... How many know that since the start of the war 900,000 tons of soy flour have been used in human feeding? How many know that 26 countries have had American soy flour?" The author would like to "change the name of soy flour to soy protein or soy powder or something that gets away from the 'flour' terminology. Soy flour bears no resemblance to wheat flour. It has no gluten, no starch, you cannot make a loaf of bread from it. It is more analogous to milk powder and is strictly a protein fortifying agent." In 1947-48 more than 9% of all soybean oil meal was turned into soy flour, up from 1% 6-7 years ago. Address: Asst. Vice President, Archer-Daniels-Midland Co., Minneapolis, Minnesota. And secretary of the Soya Food Research Council.

267. *Soybean Blue Book*. 1950. Soya Food Research Council. p. 18.

• **Summary:** Organized 1936. Address—828 Barr Building, Washington 6, DC. Officers: Director—Edward J. Dies. Chairman of research—Dr. J.W. Hayward. Chairman executive board—E.A. Buelens. Vice chairman—R.G. Bierley. Treasurer—H.A. Olendorf. Secretary—Douglas Dies.

"This Council has been the principal part of the Soy Flour Association since organization of the Association in 1936. Inasmuch as most activities are centered in the Council, it was voted at a meeting on Dec. 9, 1949, to drop the name of the Soy Flour Association, which has been somewhat unique as a trade group as its major effort has been along the lines of scientific research, new product studies, and market development.

"On the Council the soybean growers are now represented through membership of George M. Strayer, Secretary-Treasurer of the American Soybean Association, along with producers of soy flour and other interested groups."

268. *Soybean Digest*. 1950. Grits and flakes... from the world of soy: Brierly and Shuman leave for Germany. March. p. 46.

• **Summary:** R.G. Brierly, assistant vice president of Archer-Daniels-Midland Co. (Minneapolis, Minnesota) and Kenneth Shuman, Glidden Co. (Indianapolis, Indiana), left Feb. 16 for a four-week trip through Germany.

269. Brierley, R.G. 1950. Report from Germany. *Soybean Digest*. June. p. 22-23, 43.

• **Summary:** Brierly and C.K. Shuman of the Glidden Co. visited Germany on invitation of the German Foods Ministry.

"Low cost Protein is still the major food deficiency in

Western Germany. Small percentages of soy flour in German bread could solve this problem with no increased cost to the consumer or change in national food habits. Substantial amounts of ECA [European Cooperation Administration] food dollars for Western Germany would be saved by the American taxpayer. At the same time there would be a new market for 100,000 tons per year of American soy flour.

"The foregoing is a summary of the findings of Ken Shuman of the Glidden Co. and the Soya Food Research Council, and myself, after a tour of Germany at the invitation of the German Food Ministry. We had been asked to further investigate in Germany the recommendations of the ECA technical assistance team of Strayer and Carter who had suggested that a major contribution could be made by the addition of soy flour to German bread and meat products.

"For four intensive weeks we studied the protein food problem in Germany. We traveled over 3,000 miles by car, participated in group meetings of bakers, millers, nutritionists, government officials, cooperatives, consumer and union organizations and representatives of various Allied food manufacturers. Over 300 key food leaders of Western Germany were conferred with during these meetings and in many individual discussions. We carried the good will and the soybean food technology of the United States to a country much in need.

"We found Germany a sparkling facade under which lay a multitude of misery, cynicism, fear, and despair.

"Everywhere there was an outward appearance of prosperity. Shop windows shouted with food and merchandise. Rebuilding of everything but residential homes was going on at rapid rate. Controls and rationing were a thing of the past. For a traveler with money, everything was procurable at prices which, when converted to dollar equivalents, were in line with American prices. Even luxury foods such as oranges and bananas, nonexistent a year ago, were in evidence everywhere.

"Looking through this surface prosperity, we found quite a different picture, one that the American soybean farmer and processor should know in forming judgment on the future market possibilities for American soybean materials in Europe.

"Millions out of work: First, we found approximately 15 million people out of the 50 million population in Western Germany either unemployed, displaced or without retirement incomes, or otherwise financially incapable of getting more than essentially carbohydrate foods as a regular diet.

"Second, prices of protein foods were terribly high when considered in light of average income. In one of Western Germany's largest cities there was an adequate supply of per capita protein foods, but during the month before our arrival there had been only 50 percent consumption. This was entirely because of inadequate incomes. While prices were in line with American prices, incomes were roughly 20 percent of the average American income. German experts estimate

that high quality animal proteins are available regularly to only 15 percent of the population. Another 35 percent are borderline in their ability to regularly purchase protein foods, while 50 percent find such foods much beyond their budget.

“Third, we found that the protein available to the average population was coming primarily from cereal sources. The total meat protein available in Germany averaged 25 kilos per person per year against prewar figures of 48 kilos per person per year.

“Fourth, we found that even though there was no actual rationing, money had become the rationing system. The few fortunate were living well but the average person was still on a very inadequate diet. In our many meetings with the German Food Ministry and ECA people in Germany, we were informed that they realized this apparent ready availability of food in general could not long exist. We were asked to investigate and prepare the way technically for the use of soy protein in the German dietary. Why soy protein? Because it had been proven over and over again to be the cheapest and most readily available high quality protein food in sight.

“Our technical investigation started with the premise that the introduction of any new ingredient into the human dietary, if it were to be effective, must be accomplished in a manner that would not alter existing food habits and in a form that had consumer appeal.

“Use in bread: It was decided to first study the inclusion of soy flour in German bread. Here could be made the greatest nutritional contribution to the average diet, because of the extremely high consumption of cereal products in the form of bread by most of the population of Western Germany. The primary problem studied was whether soy flour could be used in German bread without changing it so that its consumption would change existing food habits or have less consumer appeal.

“Large scale feeding tests conducted in the United States had shown that 6 percent of soy flour could be added to American white bread without any taste fatigue or impairment of the average daily bread consumption. Even though German bread was unlike American white bread, it seemed logical to assume that a smaller percentage, such as 3 percent, could well be used in Germany. Tests were run, therefore, in several bakeries, technical bread laboratories, and flour milling test bakeries. Scoring of bread including 3 percent of soy flour combined with various German wheat flours indicated by the opinion of numerous observers, both expert and amateur, that such additions could be made without changing the bread and without adversely affecting consumer appeal. Supplementary tests are now being run in several approved establishments in Germany to further confirm this finding.

“Our next approach was to the ways and means of actually getting 3 percent of soy flour into the German bread. Because there was an over supply of German dried milk

powder, we also investigated the possibilities of adding milk powder along with soy flour.

“There were an estimated 30,000 small bakers in Western Germany. The educational program involved in having them add 3 percent of soy flour and/or milk powder and the distribution problem of getting them supplies was staggering. It was decided, therefore, to approach the flour millers with the idea of having them mix the soy flour and milk powder with wheat flour at controlled levels in their mills. The German flour mills, which service the majority of the bakers in Western Germany, were well equipped to control the admixture on an economical basis. As we left Germany, the Food Ministry was working with these German millers on the program and the millers indicated that they were willing to cooperate.

“It was decided that such a plan would require a revision in flour standards or a creation of a new standard flour terminology to designate wheat flour to which 3 percent of soy flour and/or milk solids had been added. Our discussion with food authorities indicated that such a standard might well incorporate a terminology which would compare to the meaning of the American term ‘Enriched Flour.’

“The next consideration was the economic aspects of the inclusion of soy flour in wheat flour for subsequent use in bread. The world market price of soy flour was less than wheat flour. While we were in Germany, however, local subsidies on wheat flour changed this relationship. There is every prospect now, however, that by July 1st these subsidies on wheat flour will be dropped and the natural world market price relationship between soy flour and wheat flour will be restored. This will make soy flour an item that could be substituted in the ECA program for more expensive protein foods at a considerable saving to the American taxpayer. It isn’t often that money can be saved by giving a population better nutrition, but this would be the case with the addition of soy flour to German bread...” Address: Asst. Vice President, Archer-Daniels-Midland Co., Minneapolis, Minnesota.

270. Hayward, J.W. 1950. Recent developments in soybean oil meal processing, research, and utilization. *Feedstuffs*. July 29. 18 p. \*

271. *Soybean Digest*. 1950. Grits and flakes... from the world of soy: Purchase of the Hubbard & Palmer line of elevators has been announced by T.L. Daniels, president of Archer-Daniels-Midland Co., Minneapolis [Minnesota]. June. p. 36. • **Summary:** “Most of the newly acquired stations are in Minnesota’s principal soybean producing area. They will add 26 country elevators to the ADM system.”

272. Brierley, R.G. 1950. Soy flour in Germany. *Soybean Digest*. Sept. p. 72-73.

• **Summary:** The author has recently spent 6 months in

Germany and Europe on two consecutive trips in 1948 and 1950. He has travelled 5,000 miles in Germany and talked with hundreds of Germans who represent government, agriculture, industry, consumers, and unions. After World War II, the U.S. soy flour industry was “asked to produce and ship 150,000 tons of soy flour to Germany. Although we had recommended that the soy flour be incorporated in wheat flour, it was sent from here as soy flour. When we suggested that our experts would assist in seeing that the product was properly used, we were told that the army experts knew all about it and would ably take care of the situation. It was not until first Ersel Walley, and then myself went to Germany that we learned that neither the Germans nor the military occupation authorities knew about the soy flour until just before it arrived, and neither knew how to use it...

“Soy flour shipments were just as suddenly shut off when Congressional pressure forced potato flour on the army... During this period the German food ministry was interested only in building up meat production for psychological and political reasons. There still remained large stocks of soy flour which had backfired when it was added at high levels to bread containing levels of corn flour and potato flour and peanut flour that made the bread unpalatable. Rather than use the soy flour in small recommended levels, to bring real nutrition to the lower income people, it was finally decided to feed it to animals. And the American taxpayer paid for that colossal misuse.” Address: Asst. Vice President, Archer-Daniels-Midland Co., Minneapolis, Minnesota.

273. Hayward, J.W. 1950. Research affecting the feeding of soybean oil meal. *Soybean Digest*. Sept. p. 30-34. Also in *Feedstuffs*. 22(41):36. 1950. Amaral 1958. [7 ref]  
 • **Summary:** Contents: Introduction. Big markets. In chick starters. Phosphorus. Solvent meal (including APF = “animal protein factor” and vitamin B-12). Antibiotics.

Concerning antibiotics: “We understand that the antibiotics, penicillin, streptomycin, aureomycin, and terramycin are equally effective in increasing the growth rate of chicks, poult, and pigs, and that their effect is in addition to vitamin B-12. The antibiotics are certainly not a part of the APF complex, or at least, we have no knowledge of these antibiotics being contained in the natural sources of vitamin B-12, such as fish meal, fish solubles, milk and other animal byproducts.

“For those of you interested in a rather recent good review on aureomycin, I suggest that you read the article cited by Stokstad of Lederle Laboratories.” Address: Nutritional Research Dep., Archer-Daniels-Midland Co., Minneapolis, Minnesota.

274. Hayward, J.W. 1950. Research affecting the feeding value of soybean meal. *Feedstuffs*. Oct. 4. \*

275. Archer-Daniels-Midland Co. 1950. New ADM soybean processing plant located at Mankato, Minnesota: Good news for Minnesota and Iowa soybean growers (Ad). *Soybean Digest*. Oct. p. 21.

• **Summary:** An illustration shows the new solvent processing plant and elevators, which are almost ready for use. The plant will have an annual capacity of 3 million bushels of soybeans; the 150 foot concrete tanks are among the tallest in the country. Other ADM soybean processing plants are located at Decatur, Illinois; Minneapolis, Minnesota; Edgewater, New Jersey; Los Angeles, California; Portland, Oregon; Fredonia, Kansas; Buffalo, New York; Chicago, Illinois; Kennedy, Texas. Across the bottom of the ad is the slogan “Creating New Values from America’s Harvests” and the “Archer Quality” logo.

Note: Talk with Lowell Andreas. 2003. July 23. ADM eventually had a feed mill adjacent to its soybean processing plant. This plant is still in operation and still owned by ADM; Lowell has his office there. The ADM plant does solvent extraction of soybeans and refines soybean oil. Years ago, ADM sold the adjacent feed mill to Hubbard Milling Co., which now receives its soybean meal from the plant next door by conveyor belt. So the Honeymead plant that Lowell worked so long to build is now in head-to-head competition with ADM’s plant in Mankato. Address: 600 Roanoke Building, Minneapolis 2, Minnesota.

276. **Product Name:** Soybean Oil, and Soybean Oil Meal.  
**Manufacturer’s Name:** Archer-Daniels-Midland Co.  
**Manufacturer’s Address:** Mankato, Minnesota.  
**Date of Introduction:** 1950 November.

**Ingredients:** Soybeans.

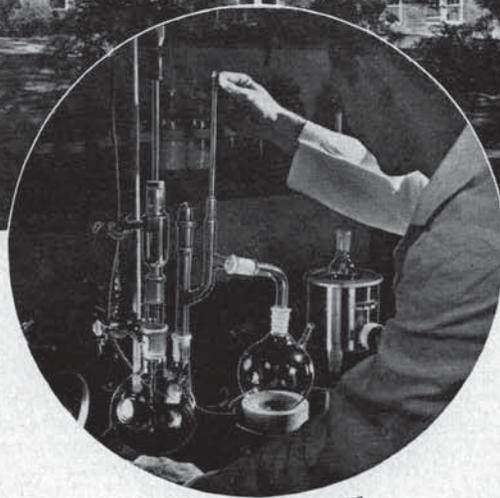
**How Stored:** Shelf stable.

**New Product–Documentation:** Ad in *Soybean Digest*. 1950. Oct. p. 21. “New ADM soybean processing plant located at Mankato, Minnesota: Good news for Minnesota and Iowa soybean growers.” An illustration shows the new solvent processing plant and elevators, which are almost ready for use. The plant will have an annual capacity of 3 million bushels of soybeans; the 150 foot concrete tanks are among the tallest in the country.

277. Archer-Daniels-Midland Company. 1951. Charting the future of the soybean (Ad). *Soybean Digest*. Jan. p. 39. Also in *Soybean Blue Book* (1951).

• **Summary:** A full-page ad. “Here in ADM’s big, modern laboratory, a team of highly skilled research men are planning the future of your crops.

“For 25 years, ADM has been a leader in creating new uses for the soybeans you grow. Dozens of new products born in this famous laboratory and produced in ADM plants across the nation help fill vital needs in our everyday life. This is the way markets are built—and with each new product created by ADM research, the market for your soybeans has



## Charting the future of the Soybean

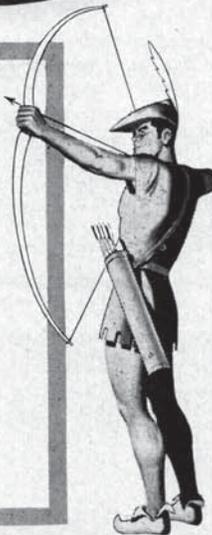
**H**ERE in ADM's big, modern laboratory, a team of highly skilled research men are planning the future of your crops.

For 25 years, ADM has been a leader in creating new uses for the soybeans you grow. Dozens of new products born in this famous laboratory and produced in ADM plants across the nation help fill vital needs in our everyday life. This is the way markets are built . . . and with each new product created by ADM research, the market for your soybeans has grown.

Although ADM is proud of the part it has played in the past, its attention is always on the future. Today, ADM research men are busier than ever . . . learning new secrets . . . developing new products . . . creating new markets . . . for YOU.

### Some ADM Products Made from Soybeans

- ADM Soybean Brew Flakes
- Archer "C" (Cooking Oil)
- Archer "S" (Salad Oil)
- Archer 41% Soybean Oil Meal
- Archer 44% Soybean Oil Meal, Pea-Size, Pellets, Flakes
- Archer 50% Low Fibre Soybean Oil Meal
- Archer Quality-First Feeds
- Arlecine (Soybean Lecithin)
- Bakers Nutrisoy
- Daniels' Supreme
- Kaysoy
- Nutriwhip
- Packers Granular
- Paint Vehicles
- Soya Fatty Acids
- Soy Flour



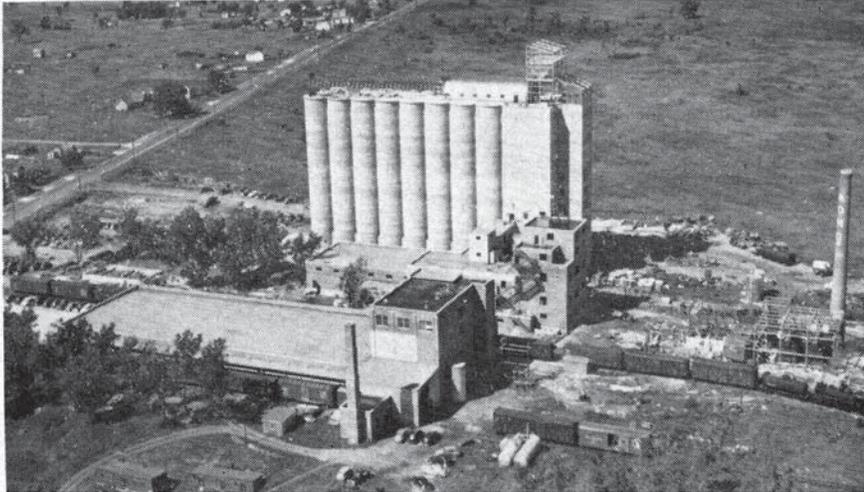
JANUARY, 1951

## ARCHER · DANIELS · MIDLAND COMPANY

600 ROANOKE BUILDING • MINNEAPOLIS, MINNESOTA

*Creating New Values from America's Harvests*

## A-D-M's 3-Million-Bushel Plant



grown.

“Although ADM is proud of the part it has played in the past, its attention is always on the future. Today, ADM research men are busier than ever—learning new secrets—developing new products—creating new markets—for You.

“Some ADM products made from soybeans: ADM Soybean Brew Flakes, Archer “C” (cooking oil), Archer “S” (salad oil), Archer 41% Soybean Oil Meal, Archer 44% Soybean Oil Meal, Pea-Size, Pellets, Flakes, Archer 50% Low Fibre Soybean Oil Meal, Archer Quality-First Feeds, Arlecín (soybean lecithin), Bakers Nutrisoy, Daniels’ Supreme, Kaysoy, Nutriwhip, Packers Granular, Paint Vehicles, Soya Fatty Acids, Soy Flour.”

Across bottom of ad: “Creating New Values from America’s Harvests.”

A half-page photo shows ADM’s new research laboratory. Two ADM logos, each with an archer shooting an arrow in a bow, appear on this page. Address: 600 Roanoke Bldg., Minneapolis, Minnesota.

278. *Soybean Digest*. 1951. A-D-M’s 3-million-bushel plant (Photo caption). Jan. p. 20.

• **Summary:** A photo shows an aerial view of the huge plant. The text below the photo reads: “Annual processing capacity of this new solvent extraction plant of Archer-Daniels-Midland Co. at Mankato, Minnesota, is 3 million bushels, the largest in Minnesota. Located next to the firm’s Mankato Mills (a formula feed unit), the plant consists of five separate buildings, a storage elevator, a cleaning and drying facility, a processing building, a five-story solvent extraction unit and a warehouse. Storage capacity is 1 million bushels. Plant was formally dedicated last fall.”

279. Brierley, Richard G. 1951. Chemurgy is success factor at A-D-M. *Chemurgic Digest*. Feb. p. 4-7.

• **Summary:** “Archer-Daniels-Midland Company has

emerged as the nation’s largest producer of vegetable oils, and as one of the world’s largest processors of farm-crops. Directly this growth can be traced to the application of the principles of Chemurgy, for the company has held fast to its slogan, ‘creating new values from America’s harvests through chemical research.’”

In the company’s 149-year history, it has never finished a year in the red, “and hasn’t skipped a dividend since 1927. As of June 30, 1950, the company was a \$250,000,000 a year business with no bank loans, bonds, notes, or preferred stock, and a net worth of \$80,000,000.” During the last 5 years alone, over \$30 million has been invested in new plants, including a modern soybean solvent extraction plant that began operating in

Mankato, Minnesota, in Oct. 1950.

“The company’s present operations are far flung and could be divided into five major departments: flaxseed, soybean, The Commander-Larabee Milling Division (wheat flour), Werner G. Smith Division (core oils); and the grain department.”

A-D-M is the world’s largest handler and processor of flaxseed, from which linseed oil is extracted.

“Strip America’s machines of parts made by foundry casting, and hardly a machine anywhere could move. Linseed oil, in the guise of core oil, plays a key role in making these castings. It literally makes America’s wheels go ‘round.

“Floor coverings made of linseed oil are found everywhere—in homes, shops, factories, banks, theaters, offices. For linseed oil is the key ingredient of linoleum, a word derived from the Latin and meaning literally ‘the oil of the flaxseed.’

“The remarkable story of the growth of the soybean industry is in part the story of A-D-M. It pioneered in soybean research and is today one of the leading processors of the crop.”

“Many Soybean Uses: From the soybean comes America’s leading edible oil, special industrial oils, high protein foods. soybean oil meal for animal feeds, adhesives for plywood, coatings for wallpaper and paper, and emulsifiers for paints and foods.

“The last ten years has seen a phenomenal growth in the soybean industry. But it all didn’t just happen. Research had to pave the way.

“Uses for the products of the soybean had to keep pace with the expanded production of the crop. Less than twenty years ago, a 5% to 10% content of soybean oil in any food product was considered a maximum if taste and appearance were to be ideal. But today, some 100% soybean

oil shortenings are used. Obviously, wonderful technical progress has been made.

“In its crude state, soybean oil is not a good industrial oil. It ‘bodies’ slowly in the kettle, and dries too slowly for general use. Laboratory research has literally transformed soybean oil for use in paints. Drying has been speeded, and brushability, acid and alkali resistance, elasticity and other needed properties have been made competitive with more expensive oils.

“The by-product left over after the extraction of soybean oil is called soybean oil meal. It had many disadvantages when first sold to the mixed feed industry. So experts developed scientific processing equipment to further process soybean oil meal into an efficient protein supplement in mixed feeds, and then worked through the agricultural colleges and other nutritional feed experts to prove that soybean oil meal could be made into the best-balanced vegetable protein for livestock and poultry. Today the soybean oil meal of the industry is considered the ‘yardstick for protein feed ingredients’.

“The next job was making these byproducts of oil extraction more valuable. Soybean oil meal has been further refined through research as a basic ingredient for vegetable glues for use in plywood, and as adhesives for all sorts of industrial coatings. Even cold water paints have been developed as new markets for high protein industrial soy flour. Edible soy flours have been developed for use in bread, cereals, cakes, sausage, yeast foods. Millions of pounds have been used in relief feeding by the Army, UNRRA, and Lend-Lease. To a world deficient in protein foods, soy flour will undoubtedly bulk large in the future through new developments coming out of the food and bakery research laboratories.

“Lecithin: One of the most fascinating of all soybean products is a viscous fluid called lecithin. The peculiar chemical character of lecithin makes it valuable in the baking industry (in bread, rolls, doughnuts, pies), in soaps and dry cleaners, in cosmetics, and chemists say its usefulness will be much further explored. Lecithin was originally a bothersome by-product that had to be thrown away. Chemurgy, at work in research laboratories, made lecithin a valuable and sought after product for industry.

“Through its Commander-Larabee Milling Division, Archer-Daniels-Midland Company is the fifth largest flour miller in the United States. The major part of the production is sold directly to bakers. Research, however, is fast finding more lucrative industrial uses for flour. So far, special products have been developed for manufacturers of wallpaper cleaners, dry batteries, insulation board, and oil drilling muds. A-D-M is convinced that, with the vast supplies of wheat in this country, the overcapacity in the milling industry, and the keen competition in bulk flour, Chemurgy must lead the way in finding new and better uses for products of wheat.

“Core Oils: A-D-M, through its Werner G. Smith Division, is the largest United States producer of core oils used by foundries and a major supplier of fatty acids and alcohols. ‘There are many different types of core oils. Essentially they all are used as the binder that holds together the sand that serves as the mold for the casting. About one gallon is used to a thousand pounds of sand. The oil preserves the mold when the hot metal is poured around it during the actual casting process. It then displays that unique property known as ‘collapsibility’; that is, it burns out and causes the molds to disintegrate at just the right moment, leaving the casting free.”

Photos show: (1) Mr. Brierley, age 35, who joined A-D-M in 1942 and by 1945 was manager of its Soya Products Division. (2) T.L. Daniels (president) and Samuel Mairs (chairman of the board) as they examine a vacuum-pressure kettle. (3) The A-D-M processing plant at Decatur, Illinois, which includes five units, namely the elevators, two solvent plants, an oil refinery, and a soy flour plant. A-D-M also produces lecithin and core oils from linseed oil. Address: Asst. Vice-President, Archer-Daniels-Midland Co.

280. *Soybean Digest*. 1951. A-D-M opens plant. June. p. 32.  
 • **Summary:** “Election of a new member to the board of directors and opening of a new product development or pilot plant at Minneapolis were announced May 9 by Archer-Daniels-Midland Co.

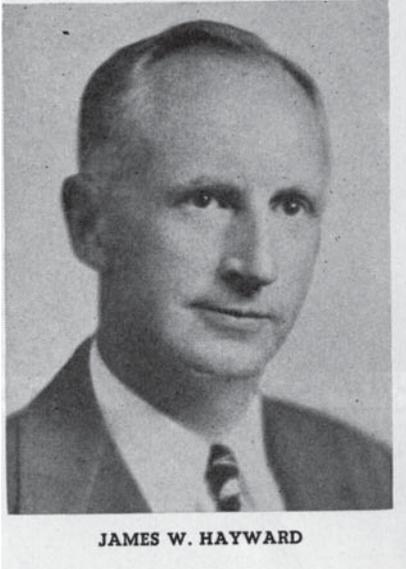
The new director is Grant Keehn, executive vice president of the First National Bank of the City of New York. A former industrial financial consultant and vice president of Kelsey-Hayes Wheel Corp. of Detroit, Keehn is also a director of Great Northern Railway Co., G.D. Searle & Co., Diesel Publications, Inc. and Kelsey-Hayes Wheel Corp.

“The new four-story product development plant, designed by ADM’s chemical engineering section. will process all types of oils and fatty acids. Here oils can be oxidized and modified under varying conditions of heat, vacuum, pressure and chemical reaction.

“The plant will be operated by the ADM research division headed by S.O. Sorensen, vice president. James Konen, director of research, will be in charge. He will be assisted by Newton D. Farel, formerly in charge of ADM’s Los Angeles [California] refinery.”

281. *Soybean Digest*. 1951. Honorary life members 1951 [American Soybean Assoc.]: James William Hayward and Frank S. Garwood. Sept. p. 22.

• **Summary:** James W. Hayward was born near Angola, Indiana, in 1898. In 1925 he was made director of the department of agriculture at Notre Dame University, which position he held until 1932, when he entered the University of Wisconsin to pursue a PhD degree in animal nutrition. He was awarded that degree in 1935. “He became director of the new department of nutritional research of the soybean



JAMES W. HAYWARD

division of Archer-Daniels-Midland Co. at Milwaukee, Wisconsin, in 1935, and transferred with the department to Minneapolis, Minnesota, in 1937, where he now lives.

“The name Jim Hayward has long been intimately connected with soybean oil meal. He did some of the early research on its use as a livestock feed... For many years he has been recognized

as a leading authority on the use of soybean oil meal in livestock feed.”

“Frank S. Garwood, farmer and seedsman, operates over 600 acres of land in Christian County, Illinois.” With his two sons (Harold and Donald), he grows certified soybean seed and seed corn; their farm and business is named F.S. Garwood & Sons. “He is a member of the Illinois Crop Improvement Association, and is active in testing new varieties of soybeans, wheat or oats as they develop.

“Mr. Garwood was one of a number of progressive farmers who pioneered soybean production in Illinois [in the early 1920s] and were responsible for the rapid progress of the crop. For the first 15 years of soybean production he was one of the most consistent producers of large acreages of soybeans in Illinois, averaging 300 to 600 acres a year.

“The first small combine for harvesting soybeans was assembled and put into use on the farm of Frank Garwood in 1924. Before that time soybeans had been harvested as were wheat and oats, with the binder and threshing machine. Mr. Garwood had some difficulty in getting the major machinery firms to see the usefulness of a small combine thresher that farmers could use on soybeans. The Massey-Harris Co. consented to build him one. Farmers and machinery men came from many miles to see if it would work. It did. From then on the combine harvester came into use fast, not only for soybeans but for small grains as well.

“Mr. Garwood graduated from the University of Illinois College of Agriculture. He has spent all of his life on the farm. His ancestors came with the original colony that settled in Christian County, Illinois, from Stonington, Connecticut, about 120 years ago. He helped pioneer the establishment of the Farm Bureau and has served on its board as well as the board of the Christian County Farm Supply Co. He was the first president of the Stonington Cooperative Grain Co., a position he now holds.”

A photo shows each man.

282. Mining, Metallurgical and Chemical Section, Industry and Merchandising Division, Dominion Bureau of Statistics, Department of Trade and Commerce, Canada. 1951. The vegetable oils industry 1950. Ottawa, ONT, Canada. Vol. 2—Part XVIII—p. J-1 to J-8. Oct. 13.

• **Summary:** Ontario province is Canada’s leading producer of vegetable oils. The leading oilseed, in terms of value at the mill, is flaxseed (\$18.5 million) used to make linseed oil and meal, followed by soya beans (\$14.4 million). Most of the soya bean oil in Canada is processed by companies in the slaughtering and meat packing industry to make shortening, etc. Other major uses are in fish packing (5.5%), paints (3.3% of total), and miscellaneous foods (3.2%). In 1950 Canadian imports included \$878,794 worth of edible soya bean oil and \$627,095 of non-edible soya bean oil, \$1,265,296 of soya bean oilcake and oilcake meal, and \$269,120 of soya bean flour. Page J-8 gives a “Directory of Canadian firms in the vegetable oils industry, 1950,” including: (1) Victory Soya Mills at 285 Fleet St. E., Toronto. (2) Toronto Elevators, Limited (Oil Crushing Division), Queens Quay, Toronto. (3) Edible Oils Limited, Fort William.

Note: This is the earliest document seen (Aug. 2019) that mentions “Victory Soya Mills.” Address: Ottawa, ONT, Canada.

283. National Soybean Processors Assoc., Soybean Research Council. 1951. The Duren disease: English translations of pertinent foreign language articles. Vol. 1. Soybean Research Council, National Soybean Processors Association, 3818 Board of Trade Building, Chicago 4, Illinois. 101 p. Oct. Translations of 21 articles are included. Edited by Warren Goss. [62 ref. Eng]

• **Summary:** During the early part of 1951, a number of cattle deaths in the Midwest were tentatively diagnosed as poisoning caused by the feeding of trichloroethylene extracted soybean meal. The symptoms appeared identical to those first described by Stockman in 1916.

Contents: Cover letter, by Warren H. Goss (dated 15 Oct. 1951). Foreword, by Goss. Bibliography: English language (8 references). Translations (all typewritten) of foreign-language documents: German, Finnish, French. Bibliography: Foreign language: 30 references.

The cover letter is on Soybean Research Council letterhead (3818 Board of Trade Building, Chicago. Phone: HARRISON 7-7605). Members: J.L. Krider, Chairman. O.H. Alderks, Ernest Bechtel, H.C. Black, Francis E. Calvert, James C. Fritz, Warren H. Goss, J.W. Hayward, M. McMillan, Wesley Nelson, Kenneth Shuman, Robert L. Terrill, Harold L. Wilcke.

The cover letter states: “Gentlemen: Enclosed is a collection of translations we have prepared of foreign-language articles on the Duren disease, i.e., a hemorrhagic

illness in cattle which has been attributed to the feeding of trichloroethylene-extracted soybean oil meal. Additional articles are being translated, and copies will be sent as soon as they are available. The present transmittal is being sent without awaiting completion of the entire task, because many research workers are anxious to obtain the material as fast as it becomes available.

“Further information about these translations and the manner in which they are being made available is contained in the accompanying Foreword. We hope you will read it and arrange to file or bind your translations in such a way as to permit the addition of more from time to time.

“It is also hoped that this literature will prove of value to the scientists in research institutions where investigations of the Duren disease are in progress. The efforts of these workers are deeply appreciated by the entire soybean industry, and the Soybean Research Council offers this material, as a contribution toward solving the problem.

“Yours sincerely, Warren H. Goss.”

The 2-page Foreword states: “During the early part of 1951, a number of cattle deaths in the Midwest were tentatively diagnosed as poisoning caused by the feeding of soybean oil meal produced by extraction with trichloroethylene. The symptoms, cause, and other features of the ailment appeared identical with those described by Sir Stewart Stockman (3) in 1916 and later by Ralph Stockman (2). The former article, of which an abstract also appeared in 1916 (1), is a well-documented study of bovine mortalities which occurred first in 1912 in Southern Scotland and of experimental feeding tests from which it was concluded that, although soybean oil meal prepared by usual extraction methods (benzine or hexane) is a valuable feed ingredient, the use of trichloroethylene as a solvent in its manufacture yields a product that is toxic to cattle. In another contribution, Stockman (4) furnished data on the operating conditions employed, in the mill where the suspect meal was produced.

“Additional published information on this subject in the English language is meager. Mimeographed reports by Vollertsen (6), (7), were made available by E.I. du Pont de Nemours & Co., Inc., in 1939 and 1941, the latter of which presented indications that processing temperatures influence the degree of toxicity in the finished meal. Through the courtesy of Mr. H. Jasperson of J. Bibby Sons, Ltd., Liverpool, a report by Wakelam (8) was furnished to the writer covering a literature search of the poisonous effects attributed to trichloroethylene-extracted soybean oil meal. Sweeney, Arnold, and Hollowell (5) included, in a bulletin describing the trichloroethylene extraction process, a limited review of the literature and a summary of the Vollertsen results (7).

“Although occasional references to articles in the foreign literature appear in some of the preceding English-language publications, not a great deal of attention seems

to have been called to a major outbreak of the same hemorrhagic disease in Germany and nearby countries in 1923. Because it appeared first in the province of Duren, the illness became popularly known as the “Duren disease”. A perusal of certain German articles reveals that this particular epidemic was very serious and was the object of intense study and many scientific publications during the ‘twenties.’ Members of the Soybean Research Council were impressed with the extent of the foreign-language literature and the findings disclosed therein. In view of the apparent recurrence of the disease in this country, the Council considers it essential that all this material be made available in the form of English translations.

“Through the cooperation of Council members, the Minnesota and Iowa Agricultural Experiment Stations, and the Northern Regional Research Laboratory, mimeographed copies are being prepared of all pertinent foreign-language papers that can be found in the literature. These number forty-three at the present writing and, together with the English-language references cited above, constitute as complete a literature survey as we have been able to compile of the Duren disease.

“The first mailing of these translations is furnished herewith, and more will be sent to the same recipients as they are completed. It is hoped that these will be filed or bound in such a way as to permit the inclusion of additional articles from time to time.

“The individual translators, most of whom performed this task without compensation, have converted the foreign literature into English as accurately as possible, but no guarantee of accuracy is intended or implied. Readers are urged to consult the original foreign-language texts if in doubt as to details of any of the experiments described and statements contained herein. It is not always possible to express in concise English the complete or exact import of expressions used in other languages. The Soybean Research Council, through its office at 3818 Board of Trade Building, Chicago 4, Illinois, will gladly help anyone desiring to consult original texts not readily available in libraries.

“The Duren disease is a baffling problem. Its study is expensive and time-consuming because it affects only bovines. Intensive research is needed to determine specifically what the toxic principle is, how it can be avoided or eliminated in the production of the meal, and how it can be detected analytically. It is hoped that the preparation and distribution of these translations will aid in the conducting of these investigations. The Soybean Research Council is deeply appreciative of the contributions made to this project by the individual translators and extends its thanks to each.

“Warren H. Goss.”

Note: The numbers in parentheses refer to the English-language bibliography at the end of the Introduction. Address: Soybean Research Council, National Soybean Processors Assoc., 3818 Board of Trade Building, Chicago 4, Illinois.

Phone: HArrison 7-7065.

284. *Soybean Digest*. 1951. Solvent plant by Toronto Elevators. Oct. p. 35.

• **Summary:** Toronto Elevators Ltd. is constructing a \$1 million solvent plant for extraction of vegetable oils on the Toronto waterfront, according to an announcement by H.E. Bryant, manager of the vegetable oils department. The plant, which will be used primarily for soybean oil extraction, is the most modern of its kind in Canada, incorporating a number of processing features new in Canada.

A pioneer in Canada's soybean crushing industry, Toronto Elevators Ltd. has been actively engaged in this field since 1938.

Located near the company's grain elevators, master feed plant, and vegetable oils refinery, the new plant is expected to be in operation by about the end of 1951. The crude soybean oil will be pumped to the refinery for processing to meet the requirements of the paint industry. The new solvent plant will also produce edible oils.

The present expeller plant operated by Toronto Elevators Ltd. will be continued in use for crushing flaxseed.

285. Liener, Irvin E. 1951. The intraperitoneal toxicity of concentrates of the soy bean trypsin inhibitor. *J. of Biological Chemistry* 193(1):183-91. Nov. [27 ref]

• **Summary:** A concentrate of soy bean trypsin inhibitor, which had been treated so as to destroy its antitryptic activity, still retained the ability to inhibit the growth of weanling rats when administered by intraperitoneal injection. The LD<sub>50</sub> for rats and chicks was 200 and > 2000 mg. per kg respectively. By-passing the gastrointestinal tract in this manner affords a means of studying a substance's mode of action without introducing the complicating factor of intestinal proteolysis. The evidence suggests the existence of a heat-labile, non-dialyzable toxic principle in hexane-extracted raw soy bean meal (Nutrisoy XXX, made by Archer-Daniels-Midland Co., Minneapolis, Minnesota) which, although closely associated with factors which inhibit trypsin, is not identical with them.

Note 1. Intraperitoneal means within or administered through the peritoneum. The peritoneum is a thin, transparent membrane that lines the walls of the abdominal (peritoneal) cavity and contains / encloses the abdominal organs such as the stomach and intestines.

Note 2. By 1952 the author showed this other toxic substance to be a hemagglutinin. Address: Div. of Agricultural Biochemistry, Univ. of Minnesota, St. Paul, Minnesota.

286. *Dawson Sentinel (Minnesota)*. 1951. Soybean products have multitude of uses in many fields. 68(14):8. Dec. 7.

• **Summary:** "There is a saying in the Orient: 'When you grow the soybean, you grow meat, butter and milk.'" But

there are many other uses. They are summarized from a booklet prepared by ADM.

287. Hayward, J.W. 1951. Soybean oil meal for livestock and poultry. In: K.S. Markley, ed. 1951. Soybeans and Soybean Products. Vol. II. New York: Interscience Publishers or John Wiley & Sons. xvi + 1145 p. See p. 891-948. [263 ref]

• **Summary:** Contents: 1. Production and utilization. 2. Types and forms of soybean oil meal products: Definitions, specifications, and nomenclature of products. 3. Nutritive value of soybeans and soybean oil meal: Composition, effect of heat on the nutritive value of proteins (raw vs. cooked soybeans, meals processed at different temperatures compared with soybeans), comparison of commercial meals, function of heat, trypsin inhibitor concept, effect of heat and moisture (overheating). 4. Tests for predetermining nutritive value of protein. 5. Unknown factors required for growth and reproduction: Chick growth and hatchability (chick growth, hatchability), reproduction and growth of swine (reproduction of swine, growing pigs), growth and lactation of rats, growth of calves. 6. Supplementing of soybean protein with other proteins. 7. Supplementing soybean oil meal with minerals and vitamins: Minerals (availability of phosphorus), vitamins. 8. Goitrogenicity of soybean products. 9. Feeding value of soybean oil meal for livestock and poultry: Beef cattle (fattening calves, fattening yearlings, fattening heavy cattle, wintering and pasture feeding, miscellaneous, summary), dairy cattle (calves, dairy cows, palatability of different kinds of meals, soybean oil vs. urea, soybean products as sources of dietary fat, effect of feeding soybean products upon milk and butter {quality}, summary), sheep (fattening lambs, breeding ewes, nutritive value determinations, summary), swine (growing and fattening pigs, the sow and her litter, summary), poultry (starting and growing chicks, egg production, reproduction, turkeys, summary).

Section 5, titled "Unknown factors required for growth and reproduction" states: "There seems to be little doubt that all vegetable protein concentrates, including a properly cooked soybean meal, require supplementing by an unidentified factor(s), sometimes called 'animal protein factor,' for good growth of animals with critical protein requirements, for good reproduction in swine, and good hatchability of poultry eggs."

Note: In this section there is no mention of phytoestrogens, isoflavones, or anything related to them. Address: Archer-Daniels-Midland Co., Minneapolis, Minnesota.

288. Langhurst, Louis F. 1951. Solvent extraction processes. In: K.S. Markley, ed. 1951. Soybeans and Soybean Products. Vol. II. New York: Interscience Publishers or John Wiley & Sons. xvi + 1145 p. See p. 541-90. [26 ref]

• **Summary:** Contents: 1. Introduction. 2. Solvents:

Chlorinated solvents, alcohol, hydrocarbon solvents (development of extraction naphthas, hazards of petroleum solvents, ventilation, asphyxiation, fire control, flame arrestors, sewer traps, safety tools, electrical equipment). 3. Power, steam, and water requirements. 4. Extractors: Batch-type extractors, basket-type extractors, vertical U-tube extractors, vertical gravity-type extractors, other types of extractors (Ford inclined screw-conveyor, Detrex Corp. drag chain, Blaw-Knox Rotocel, etc.). 5. Preparation and handling soybeans for solvent extraction: Flaking, flake conveyors, vapor seals (rotary-vane seals, screw plug seals). 6. Extracted Meal: Meal dryers (horizontal jacketed dryers, vertical dryers, recycled vapor dryers), toasting, grinding. 7. Miscella: Pumps, filtration (plate and frame filters, enclosed leaf filters, revolving-plate filters), centrifugation, distillation (horizontal short-tube evaporators, vertical or calandria evaporators, falling-film evaporators, rising-film evaporators, recirculating evaporators), stripping (packed tower, sieve plate towers, bubble cap towers), combination of distillation and stripping, spray drying. 8. Condensation and recovery of solvent: Condensation of solvent, vapor scrubbers, solvent-water separation, vent condensing systems. 9. Degumming and recovery of phosphatides: Degumming, bleaching and drying.

“Chlorinated solvents: The use of the nonflammable solvent trichloroethylene is limited to a few rather small extraction plants processing soybeans. The use of this solvent is inviting because it entails none of the fire and explosion hazards encountered in using petroleum hydrocarbons. Table 93 shows the physical properties of trichloroethylene.” According to a private communication from L.K. Arnold (1948): “Studies on the solvent extraction of soybean oil by trichloroethylene were initiated by the Engineering Experiment Station at Iowa State College and from 1937 to 1939 this work was carried out under a fellowship from the DuPont Company. The later work was done with state funds. The early studies resulted in a pilot plant extractor in which the flaked soybeans were carried down into the solvent and out by screw conveyors. Research by the Detrex Corporation on this type of extractor led to the development of a commercial unit...” (p. 545-46).

Continuous extractors—“Basket-type extractors: The original Bollmann extractor was patented in 1919 (German Patents 303,846 and 322,446) and operated by Hansa-Muehle of Hamburg, Germany, who subsequently sold complete installations to foreign processors. Two such plants were purchased and erected in the United States, the first by the Central Soya Co., Decatur, Indiana, in 1937, and the second by Archer-Daniels-Midland Co., Decatur, Illinois, in 1940. Both these plants had a capacity of several hundred tons per day. The principles of the Bollmann [paternoster] extractor are shown schematically in Figures 128 and 129” (p. 556-57).

“Vertical U-tube extractors: The first Hildebrandt

extraction plant erected in the United States was imported from Germany in 1934 and installed by the Archer-Daniels-Midland Co. at Chicago” (p. 561). It based on 3 revolving screws in a u-shaped tube.

“Vertical gravity-type extractors:... The first continuously operating solvent extraction plant employing this type of extractor was built in 1938 by the Allis-Chalmers Manufacturing Co. following the principle patented by M. Bonotto (U.S. Patent 2,086,181, of 6 July 1937). This plant was built for the Honeymead Products Co., Cedar Rapids, Iowa, and was designed to operate at 50 tons per day, but was later modified to operate at well over 100 tons per day.”

“Other types of extractors:... A unique type of soybean extractor developed by the Blaw-Knox Co. and known as the Rotocel has been in successful operation at the Indianapolis [Indiana] plant of the Glidden Company since 1949.”

Illustrations show each of these extractors. Address: The Iowa Milling Co., Cedar Rapids, Iowa.

289. Wittcoff, Harold. 1951. *The phosphatides*. New York, NY: Reinhold Publishing Corp. xviii + 564 p. See p. 219-23 (Soybeans), p. 483-89 (The Manufacture of Phosphatides), and p. 504-22 (Industrial uses). (American Chemical Society Monograph Series, No. 112). 24 cm. Summarized in *Soybean Digest*, Jan. 1953, p. 28. [100+\* ref]

• **Summary:** An excellent and comprehensive overview. Describes and interprets the nomenclature, isolation, structure proof, properties, synthesis, physical chemistry, enzymic relationships, analysis, sources, biochemistry, medical aspects, metabolic relationships and commercial uses of all known phosphatides. In Chapter XV, titled “Phosphatides of cereals, grains, and oil-producing plants,” a long section on soybeans (p. 220-23) gives a review of the literature under the following headings: Phosphatide content, complex formulation, fatty acids, and phosphatide distribution.

Chapter XXVI (p. 483+) titled “The manufacture of phosphatides” notes that “The phosphatides used industrially are obtained, for the most part, from soybeans and may be considered as by-products resulting from the production and refining of crude soybean oil.” The Bollmann process, which is used almost universally, makes it possible to obtain the phosphatides from the oil without solvent extraction. Table 1 (p. 483) shows that the yield of phosphatides from soybeans is greater than from other commercial oil seeds: Soybean 0.45–0.50%, rapeseed 0.35%, linseed 0.25%, peanut 0.20%, sunflower (with hulls) 0.15%, palm kernel 0.10%.

Page 484-85: “Prior to 1934, commercial lecithin used in this country was imported largely from Germany and Denmark. The principal German manufacturer, Hanseatische Muehlenwerke A.G. (Hansa-Muehle), marketed its lecithin products in the United States through the American Lecithin Corporation. The principal Danish manufacturer, Aarhus Oliefabrik, A/S (Aarhus), marketed its lecithin products in

the United States through Ross & Rowe, Inc.”

Note: This is the earliest document seen (April 2016) that mentions Aarhus Oliefabrik (in Denmark) in connection with lecithin.

“In 1934 the first commercial lecithin plant in America was built in Chicago [Illinois] by the Archer-Daniels-Midland Company, and in 1935 the Glidden Company built a similar plant in Chicago.

“All the above foreign and domestic corporations either owned or controlled process and use patents or operated under license agreements from one another. In order to promote the widespread distribution and use of lecithin in the United States and because of the very confusing and complicated patent situation in 1935, the above concerns entered into an agreement to pool their patent interests. Under this agreement all the companies except Ross & Rowe, Inc. received stock in a new patent holding and licensing company—The American Lecithin Company, Inc. This new company granted exclusive manufacturing licenses to Archer-Daniels-Midland Company and the Glidden Company and a sales license to Ross & Rowe, Inc. The American Lecithin Company also, for a time, continued to sell lecithin in competition with its licensee, Ross & Rowe, Inc. For the most part no royalties were imposed on lecithin consumers.

“Under this arrangement the volume of lecithin production expanded, and at times large quantities of lecithin accumulated at the plants in excess of demand. As the quantity of domestic lecithin increased, the price continued to decline to provide a broader market.

“Certain trade practices of the American Lecithin Company were modified by Federal Trade Commission action in 1941, and the patent pool arrangement was terminated by Consent Decree in 1946.

“There are now about a dozen known producers of commercial lecithin in the United States, most of whom are operating under license from the American Lecithin Company.”

Chapter XXVII, “The industrial uses of phosphatides, chocolate” (p. 504-05) notes that Lecithin-chocolate mixtures were favorite dosage forms before 1908. Address: Research Dep., General Mills, Inc.

290. Matagrín, Am. 1952. La vérité sur le soya: son réveil et son avenir en France [The truth about soya: its awaking and its future in France]. *Terre d'Oc (La): Revue moderne d'agriculture des pays occitans* 34:50-63. Feb.; 34:91-100. March. [24 ref. Fre]

• **Summary:** This two-part article appeared in two consecutive issues. Contents: Introduction: The strengths and weaknesses of the soybean, Haberlandt and the Vienna World Exhibition, soymilk, tofu, soy sauce, USDA, Bresse-Jones, Le Clerc / LeClerc, Morse, Hilbert, Horvath, ADM, Muscatine processing Corp., Galesburg Products Co.,

Glidden Co. (Soya Products Div.). 1. The soybean in agriculture and in market gardening: Favorable climates and soils (temperature, light and photoperiodism, humidity, physical soil needs, chemical and pH soil needs, microbiological soil needs, soil amendments [soil conditioners], fertilizers, use as green manure, chemical fertilizers, bacterial fertilizers { *Vaccinograin* }, crop rotation). Varieties of soybeans; selection of the seeds, Asian classifications, based primarily on color.

1. Varieties of soybeans for all uses: Domestic and industrial: Early or near-early (*mi-précoces*): yellow varieties, green varieties, brown varieties, black varieties. Late: yellow varieties, green varieties, brown varieties, black varieties.

2. Soybean varieties for forage: Early or near early. Late. European varieties, Russian varieties, French selected varieties, mutations are rather frequent but spontaneous hybridization is quite rare, the selection of seeds.

3. Preparation of the land (*terrain*); planting and seeds; tillage, and protection against diseases and pests.

Footnote 12: Li Yu-ying was the founder of a plant making soyfoods in the suburbs of Paris in 1911, and former president of the Scientific Academy of Peking (*Académie Scientifique de Pékin*). He returned to stay for a while in France around 1940. Li and L. Grandvoinet (a French agronomist whose tombstone is in our village in the region of Chautagne [in east Central France]) wrote a book about soya in 1912 that is still useful.

Mechanized agriculture (*motoculture*), tractors, date of seeding.

Part 2: Planting. Maturation, harvest, yield, and storage of the soybean seed (*soya-grain*). Appendix: Names of early American soybean varieties according to earliness.

1. Yellow varieties that are early and productive, adopted and preferred in 1948-1951 in Canada and neighboring U.S. states: Blackhawk, Dunfield, Earlyana, Flambeau, Goldsoy, Hawkeye, Kabott, the various Mandarins, Monroe, Richland. These mature in 105 to 125 days. Varieties suited for northern France are Harrow Manchu, Mansoy, Tokio yellow, etc.

Note: This is the earliest document seen (June 2019) that mentions the soybean variety Harrow Manchu.

2. Semi-early yellow varieties preferred in the areas of less-cold temperature: Chief, Lincoln, Wabash (less often Adams, Dunfield, Hawkeye, and certain Mandarins). These varieties mature in 125 to 140 days after planting. Several highly regarded green varieties are Nahto [Hahto?], and Giant Green.

3. Yellow varieties that are more or less late, grown in the southern USA: Arksoy, Dortchsoy 31, J.E.W. 45, Oden, Improved Pelican, Ralsoy, Roanoke, Volstate. These varieties in 140-170 days. The fine variety Imperial, which matures in about the same time in Savoie, can be added as well as Barchet (brown) or O-too-tan (black).

These late varieties are suited to Roussillon, Bas-Languedoc, Provence maritime, northern Africa, and in the tropical regions of the French Union (*l'Union Française* [which lasted 1946-1958]).

At the very end of the article we read: The author of this article regrets that, from now on, he will not be able to reply free of charge (as he has very often done) to the numerous demands for information that he receives concerning soya. Unlike the majority of his compatriots, he has neither a salary nor an appointment, nor is he retired nor pensioned, nor is he a property owner nor a renter. He lives solely on the modest income from his publications and from consultations on applied chemistry. He hopes not to appear greedy by asking future correspondents to add 8 stamps of 15 francs (or an equivalent amount) to their requests for information so that he will be able to answer promptly. While cultivating soybeans for his personal use, he is not a grain merchant and he will not be able to supply even the smallest quantities of well acclimatized varieties, but he will willingly make such shipments against reimbursement of postage costs and compensation for any product or object of fair exchange.

Hervé Berbille writes (5 May 2014): “This article is very rich in teachings. I think especially in this footnote (3) A. Matagrín confirms what I always suspected. Namely, the Vichy government never had a policy displaying a proactive attitude in favor of the soybean. Moreover, the Vichy government never really intended to promote the culture of this plant, even though the dietary restrictions suffered by the French population during the Nazi Occupation urgently required it. All indications are that powerful interests who foiled the development and cultivation of soybeans in the 1920s under the deceased Third Republic still remained very influential in the Vichy government.” Address: at Chindrieux (Savoie).

291. Clandinin, D.R.; Robblee, A.R. 1952. The effect of processing on the enzymatic liberation of lysine and arginine from soybean oil meal. *J. of Nutrition* 46(4):525-30. April. [5 ref]

• **Summary:** Conclusions: “1. Amino acid or alpha-amino-nitrogen values obtained subsequent to *in vitro* enzymatic hydrolysis do not necessarily constitute a reliable index of the relative nutritive value of soybean oil meals processed for varying periods of time under the same or under different autoclave conditions. 2. Maximum values at any one autoclave processing temperature would, however, characterize a good meal.” Address: Poultry Div., Univ. of Alberta, Edmonton, ALB, Canada.

292. Pellett, K. 1952. Do latex paints threaten market for soybean oil? *Soybean Digest*. April. p. 17-19.

• **Summary:** No! says world’s largest processor for the paint industry, Archer-Daniels-Midland (ADM).

293. *Quincy Herald-Whig (Illinois)*. 1952. One soybean expeller plant shut down: Adverse price ratio between beans and products blamed. May 9. p. 18.

• **Summary:** The Quincy Soybean Products company, like many other companies in the soybean oil and meal industry, has shut down its expeller plant at the foot of Main street—for two months. Its more efficient solvent plant will continue to run, but Irving Rosen, company president, could not say for now long. Mr. Rosen said that he has never seen conditions as bad in the soybean industry as they are now. “This is due to price limits set by the office of price stabilization.” He pays farmers \$2.85 a bushel for grade No. 2 soybeans, but can get only 9-9½ cents/pound for the soybean oil he crushes from these beans. That results in a net loss for the company on every bushel processed.

In the middle of this article is an Associated Press story titled “Processors sit out ‘squeeze’”—with the dateline “Chicago, May 9.” It states that A.E. Staley Mfg. Co., Archer-Daniels-Midland Co., and Swift and Co. have all closed soybean crushing plants, and are closing more, in order to “sit out what they term a ‘squeeze’ between prices on raw materials and finished products.” Either an increase in oil or meal prices, or a drop in soybean prices, would probably warrant reopening the mills—said a spokesman for the Archer-Daniels plant in Chicago.

Note: Harry Truman, a Democrat, is president of the USA.

294. *Soybean Digest*. 1952. Grits and flakes... from the world of soy: “‘Saved’ is the title of a story about the soybean in the Orient and the U.S. and the part played by Archer-Daniels-Midland Co... Dec. p. 28.

• **Summary:** “... in the June issue of *Archer*, periodical of that firm.”

295. Konen, J.C. 1952. Where are soybeans going? How much soybean oil can we use in industrial products? *Soybean Digest*. Sept. p. 41-42.

• **Summary:** Total industrial usage of soybean oil increased rapidly during the war and early postwar period (1943-1948). This trend has been reversed since 1948 because of the greater supply of industrial oils. The drying oil industry is the largest consumer, accounting for 75% to 85% of the total industrial utilization of soybean oil. The paint and varnish industry accounts for 75% of the drying oil consumption of soybean oil. Other industrial uses for soybean oil include: sulphonated oils for textile and leather treatment, lubricants and greases, rubber, soap and chemicals. Address: ADM.

296. *Chemurgic Digest*. 1952. Archer-Daniels-Midland Company celebrates 50th anniversary. Nov. p. 18.

• **Summary:** “A small linseed oil mill has become one of the largest processors of agricultural crops—largely because its leaders utilized science to alter the basic structure of

America's harvests.

"The Daniels Linseed Company was organized fifty years ago. John W. Daniels who established the company, had been processing flaxseed since 1878. George A. Archer joined the company in 1903. The same year the company hired Samuel Mairs, who is now chairman of the board. The company was then known as the Archer-Daniels Linseed Company.

"The three men had very little capital, but big ideas. In the early twenties, they made a decision which was destined to lift the young firm from its place in the ranks of small industry and make it a leader in its field. They decided to use science to alter the basic chemical structure of linseed oil.

"From this decision came the slogan: 'Creating New Values from America's Harvests.' Better products, expanded markets and continued growth have been the result.

"Today Archer-Daniels-Midland Company manufactures more than 700 standard products. These are used directly or indirectly by every major manufacturing industry in the country.

"This same research program, repeated with soybean products, was instrumental in converting soybean oil so it could be used in paints and helped make it America's leading edible oil.

"In 1902 the company consisted of a single flax crushing plant in Minneapolis. Today, it operates 120 plants, ranging from grain terminals to chemical processing plants.

"Recently, the firm started producing chlorophyll, the 'green Gold' of the plant world. Marketing experts and chemists foresee scores of new chlorophyll products within the next few years.

"In addition to making oil well drilling muds from cereal grains, tow for cigarette paper and U.S. currency from flax straw, special fats used in tinplating, it also is interested in whaling.

"Thomas L. Daniels summed up the story of ADM in this manner: 'Since its founding 50 years ago, the history of ADM has been the story of a company that has never stopped pioneering. In the tradition of its founders, it continues to diversify and expand its operations wherever there is a need, an opportunity, and an idea.'

A photo shows: "Samuel Mairs, chairman of the board, accepts 50th Anniversary Cake from Ellis English, vice-president, as Thomas L. Daniels, president and son of the founder looks on. The Minneapolis firm was founded September 30, 1902."

297. *Soybean Digest*. 1952. 50th anniversary [Archer-Daniels-Midland Co.]. Nov. p. 22.

• **Summary:** The firm was founded in 1902 [as Daniels Linseed Company] by John W. Daniels, later joined by George A. Archer [in 1903]. They hired Samuel Mairs as bookkeeper.

"When ADM started in business, it made only linseed

oil and meal in a single flax crushing plant in Minneapolis, Minnesota. Today it manufactures over 700 standard products in 120 plants. The headquarters is in Minneapolis.

A photo shows Samuel Mairs, chairman of the board, as he passes a piece of the firm's 50th anniversary cake to T.L. Daniels, president.

298. Goldberg, Ray A. 1952. *The soybean industry:*

With special reference to the competitive position of the Minnesota producer and processor. Minneapolis, MN: The University of Minnesota Press. xv + 186 p. Index. 24 cm. [156 ref]

• **Summary:** Contents: 1. Introduction: Purpose and scope, source of data, procedure. 2. Production: World production, national production, acreage changes in the Corn Belt, Minnesota production, areas of production, suitable varieties, acreage changes in Minnesota, summary.

3. Utilization: World utilization, national utilization, soybean meal utilization, soybean oil utilization, world and national trade movements, price relations, shortening, margarine, other edible uses, industrial uses (paints, varnishes, linoleum), Minnesota utilization, summary.

4. The processing industry: Marketing channels of the crop, historical evolution, the national processing industry, the Minnesota processing industry, technical development, processing costs, Minnesota processing costs, summary.

5. Factors affecting the competitive position of the Minnesota soybean processor: Transportation, Minnesota transportation, Buffalo–New York, Fargo–North Dakota, St. Cloud–Minnesota, Chicago soybean prices, qualifications, foreign market, summary, storage, commodity markets, price formulation, government action, the Minnesota processor, crushing margins, specific example, crushing-margin relationships over time.

6. Summary and conclusions: The producer, the processor. Appendixes. I. Tables. II. Interviews. Bibliography.

Although Minnesota was one of the last states to develop a soybean crop, the state now ranks 6th in total soybean production in America. In the decade from 1940 to 1950 the dollar value of the Minnesota soybean crop rose from \$76,000 to \$37,000,000.

The U.S. Regional Soybean Laboratory is discussed on pages 24 and 56,

Tables: (1) A comparison of the twelve leading soybean producing states for 1920 to 1950. (2) A summary of protein content, and iodine number of soybeans, by area, three-year averages, 1945-1947. (3) The results of tests on two groups of varieties of soybeans. (4) The averages for soybean varieties for date mature and oil content at three locations, Waseca, Blue Earth, and southwestern Minnesota. (5) Percentage changes in the use of land by forty-two Minnesota farmers, 1941 through 1945 (1940 = 100 per cent). (6) Changes in crop acreages between 1939

and 1949. (7) Index numbers (by percentage) of acreage on fifty southern Minnesota farms, 1941 through 1950 (1941 = 100 per cent). (8) Percentage of total tillable land in specific crops on fifty southern Minnesota farms, 1941 through 1950. (9) Tillable land and specified crops in Minnesota. (10) Percentage of total tillable land in specified crops in Minnesota. (11) The dollar value per acre of grain crops in Southern Minnesota. (12) The comparative cost and returns per acre for grain crops in southern Minnesota, 1945-1949. (13) The indicated frequency with which forty-seven selected farms produced soybeans, 1941-1950. (14) The number and percentage of fifty southern Minnesota farms producing soybeans. (15) Soybean acreage and soybean farms in Minnesota. (16) Canada: Soybeans crushed, soybean oil, cake and meal production, 1950, with comparisons. (17) Canada: Imports of soybeans, edible and inedible soybean oil, 1950, with comparisons. (18) The production and distribution of soybean meal by states, 1945. (19) The deficit in protein for all livestock, using requirements given in feed standards as the quantity needed, 1937 through 1949. (20) Prices paid by farmers per 100 pounds of cottonseed meal and soybean meal, by months, United States, 1950. (21) The production and processing of soybeans in Minnesota, Iowa, and Illinois. (22) Minnesota monthly production of soybean meal, October 1950 through September 1951, and monthly consumption of soybean meal, October 1945 through September 1946. (23) Marketing channels for soybeans, Illinois, 1947-1948 crop years, as a percentage of total sales off farms. (24) The relative costs of acquiring soybeans for large and small processing plants, Illinois, crop year 1948. (25) Soybean-processing plants in the United States, 1950. (26) The estimated soybean-processing capacities of the nine largest operators, May 1945 and January 1951. (27) The number of soybean plants in the United States on July 1, 1944 by size. (28) The number of soybean plants in the United States on January 1, 1951, by size. (29) Soybean mills in operation in Minnesota, October 1, 1945. (30) Soybean production in Minnesota, actual and potential, December 1951. (31) A summary of soybean-processing facilities and operation status, excluding mills crushing soybeans temporarily or less than half their operating time, United States, May 1945 and January 1951. (32) Soybean processing margin by size and type of plant, 1943-1944. (33) The processing costs of six Minnesota soybean plants, percentage breakdown and actual cents-per-bushel range, 1951. (34) The capacity of soybean mills in specified areas, excluding mills crushing soybeans temporarily or less than half their operating time, May 1945 and 1950. (35) The overall freight advantages per ton of meal shipped, as used by commercial men for territories rather than specific locations. (36) Available storage space and estimated requirement for United States soybean mills, 1951-1952 crush. (37) Monthly sales of soybeans by farmers, as percentage of total sales, in ten soybean-producing states, marketing year, 1947-

1948. (38) Soybean stocks on Minnesota farms, quarterly, 1943-1952, by thousand bushels. (39) Range of contract cash prices of soybeans at Chicago, monthly. (40) Range of contract cash prices of soybeans at Chicago, yearly. (41) Receipts of soybeans at Chicago and Minneapolis grain centers for the last five years. (42) Price supports, price ceilings, and average prices received by farmers for soybeans, crop years 1940-1951. (43) Country elevator base ceiling prices for No. 1 and No. 2 yellow and green soybeans. (44) Ceiling prices for crude soybean oil, in tank cars, in cents per pound. (45) Estimated differences in crushing margins among Illinois, Iowa, and Minnesota processing plants.

Appendix I tables: (1) Soybeans: Acreage, yield per acre, and production in specified countries, average 1935-1939, annual 1948-1950. (2) Soybeans: Exports from specified countries, average 1935-1939, annual 1947-1950. (3) Soybean oil: Exports from specified countries, average 1935-1939, annual 1947-1950. (4) Suez Canal: Northbound movement of Manchurian soybeans, December 1950-June 1951. (5) Soybeans: Acreage, yield, and production in the United States, 1924-1950. (6) Acreage of soybeans harvested for beans, United States and selected groups of states, averages 1925-1929, 1930-1934, and 1935-1939, and annually 1940-1950. (7) Soybeans: Supply and utilization in the United States, 1924-1950, by number of thousand bushels. (8) Acreage changes in the six leading soybean states. (9) Soybeans harvest for beans: Acreage, yield, and production for the ten leading states, 1945-1950. (10) Soybeans: Yield per acre, oil content, and oil yield per acre in the principal soybean-producing states, by states, 1944 and 1945. (11) Soybean oil content, temperature, and length of day in the principal soybean-producing states, May-October averages, 1944 and 1945. (12) Soybean oil meal and cake: Supply and utilization in the United States, 1924 through 1949, by number of thousand tons. (13) State-to-state movements of soybean meal in the six main meal-producing states, 1948, 1949, and 1950. (14) Protein concentrates: Estimated use for feed in the United States, prewar average and years 1944 through 1950, year beginning October 1, by number of thousand tons. (15) Relationships between the prices of soybean meal and prices of other high-protein feeds. (16) Soybean oil, crude basis: Production, trade, stocks December 31, and apparent disappearance, 1910-September 1950, by number of thousand pounds. (17) State-to-state movement of soybean oil, 1950. (18) Vegetable oils: Wholesale prices, in cents per pound, at specified markets, annual averages, 1930 through 1950. (19) Wholesale prices, in cents per pound, of leading fats and oils, United States, for specified periods. (20) State-to-state movements of soybeans. (21) The cost of the component parts of a 300-ton capacity, solvent extraction-plant. (22) The price per ton of shipping soybean meal from Decatur, Illinois, December 1951. (23) The average per-ton railroad

freight revenue for soybeans, soybean meal, cottonseed, cottonseed meal, linseed meal, and flax, United States, 1947 through 1950. (24) The total freight traffic, by number of cars, for 1947 (including duplications). (25) The total freight traffic, by number of cars, for 1950 (including duplications). (26) Soybeans: Stocks in various positions, United States, quarterly dates, 1942-1951, by number of thousand bushels. (27) The typical cost to farmers, in cents per bushel, for soybean storage on farms and at country elevators, for three-month and six-month storage periods, Midwestern soybean-producing states. (28) Official United States grades and grade requirements for all classes of soybeans. Continued. Address: Minnesota.

299. Goldberg, Ray A. 1952. *The soybean industry: With special reference to the competitive position of the Minnesota producer and processor* (Continued—Document part II). Minneapolis, MN: The University of Minnesota Press. xv + 186 p. 24 cm. [156 ref]

• **Summary:** (Continued): List of figures (graphs unless otherwise stated). 1. Soybean acreage harvested for beans, Minnesota, 1934-1950. 2. Soybean production, Minnesota, 1934-1950. 3. Value of Minnesota soybean production, 1935-1950. 4. Map: International trade in soybeans, average for 1935-1939. 5. Map: International trade in soybeans, average for 1948-1949. 6. Acreage of soybeans for beans and other specified crops harvested in Indiana, Illinois, and Iowa, 1924-1950. 7. Map: Ten soybean-producing areas. 8. Prices received by farmers for soybeans, corn, and oats, United States, season average, 1924-1950. 9. Map: Concentration of soybean production in the various types of farming areas in Minnesota, 1949-1950. 10. Map: Types of soils in Minnesota.

11. Bar chart: Cash receipts by commodities, Minnesota, 1949-1950. 12. Bar chart: Destination of exports of soybeans and soybean oil from the United States under the Economic Cooperation Administration (ECA, established in 1948 to administer the Marshall Plan): April 3, 1948-June 30, 1951. 13. Pie chart: United States exports of soybeans. 14. Diagram: The soybean: Uses—derivatives—applications. 15. Map: Distribution of soybean meal in 1945 and production of soybean meal in 1950, by states. 16. Production of specified protein concentrates, United States, 1937-1949. 17. Utilization of soybean oil meal among classes of livestock: Percentage distribution, United States, 1950. 18. Prices of soybean, cottonseed, and linseed oil meals, 1940-1950. 19. Utilization of soybean oil in food and non-food products, percentage distribution, United States, 1940-1950. 20. Supply of cottonseed, soybean, coconut, and other oils and food fats, not including butter and lard: Percentage distribution, United States, 1920-1949.

21. Supply of food fats and oils, United States, 1920-1949 (cottonseed oil, coconut oil, soybean oil). 22. Map: Location of principal producers of shortening, margarine,

salad and cooking oils, United States, June 1945. 23. Supply of butter, lard, and other major food fats and oils: Percentage distribution, United States, 1920-1950. 24. Wholesale prices of cottonseed oil and soybean oil, United States, 1935-1949. 25. Utilization of fats and oils in shortening: Percentage distribution, United States, 1920-1950. 26. Map: Location of Minnesota soybean-processing plants, 1951. 27. Proportion of soybeans processed by specified methods, United States, 1937-1950. 28. Flow chart: Soybean oil meal processing, hydraulic method. 29. Flow chart: Soybean oil meal processing, expeller method. 30. Flow chart: Soybean oil meal processing, extraction method.

31. Map of USA: Price of shipping soybean meal per ton from Decatur, Illinois, December 1951. 32. Prices of soybeans: Cash prices of number 2 yellow at Minneapolis, on track bids at Minnesota country points; and futures prices at Chicago, 1950. 33. Cash prices of number 2 yellow soybeans at Minneapolis and Chicago.

34. Soybeans under price support programs, United States, 1941-1950. The first government price support program was in 1942, designed to increase soybean acreage during World War II; both a support price and a ceiling price were established each year for soybeans (see table 42). In 1942, however, only 4,000 bushels were under this price support program; the average price received by farmers for soybeans nationwide was \$1.61/bushel whereas the price support was only \$1.60 a bushel and the ceiling price was \$1.66. From 1943 to 1946 the average price received by farmers for soybeans was higher than the support price, so essentially no soybeans were under the price support program. During the war there were also price supports for soybean oil and meal. Soybean price supports were higher than ceiling prices of soybean meal and oil. So during this time the government paid the extra cost of the processor's soybeans so the processor would be sure of an adequate crushing margin.

"Supports for soybeans were continued after the war. However the market price remained higher than the support price." Consequently, very few soybeans were purchased by the Commodity Credit Corporation (CCC). The largest percentage of the crop to be under price-support programs was 7% (16,000 bushels) in 1949; this figure fell to 5% (about 14,000 bushels) in 1950.

35. Prices of soybeans: On track bids at Minnesota and Illinois country points. 36. Prices of soybeans: On track bids at Minnesota and Iowa country points. 37. Solvent crushing margins compared to weighted processing costs, seven Minnesota farms. 38. Soybean crushing margins for solvent and expeller plants in Minnesota. 39. Soybean crushing margins for solvent plants in Minnesota and Illinois. 40. Soybean crushing margins for solvent plants in Minnesota and Iowa.

41. Soybean crushing margins for expeller plants in Minnesota and Illinois. 42. Soybean crushing margins for

expeller plants in Minnesota and Iowa. Address: Minnesota.

300. Markley, K.S. 1952. Oil processing through the ages. *Yearbook of Agriculture (USDA)* p. 497-503. For the year 1950-51. Crops in Peace and War.

• **Summary:** An excellent history by an expert in the subject. The first fats used by man were probably of animal origin—tallows and greases—which were separated from other tissue simply by heating or boiling with water. Extraction of oils from fruits and seeds was more complex and difficult, yet vegetable oils were used from the time of the earliest records, so methods for their separation must have been developed before the dawn of recorded history.

“The ancient Egyptians and Phoenicians used vegetable oils for food and for anointing their bodies, but not for illumination. The Egyptians used olive oil as a lubricant in moving large stones, statues, and building material. As early as 1400 B.C., Egyptian chariot wheels were lubricated with axle greases consisting of fat and lime. Earthen vessels predating the First Dynasty [2920-2770 B.C.] have been found which contained several pounds of oxidized palm oil. From the Egyptians and Phoenicians, knowledge of how to apply fats and oils spread to the Hebrews, and thence to the Greeks.

“The Hebrews had oil mills powered by treads that were usually operated by prisoners. Pliny [Roman, 23-79 AD] left the earliest description of an oil mill, which was used to crush olives. It resembled the ordinary edge runner, the stones being flat on the inner side and convex on the outer side. The Greeks and Romans are said to have employed screw presses, similar to wine presses for recovering olive oil.”

“The wedge, edge-runner, and screw press were used in Europe for oilseed processing until the invention of the hydraulic press. Their efficiencies were increased somewhat by precrushing and heating the seed in the presence of moisture, a practice in use today.

“The development of the hydraulic press in 1795 made possible a marked increase in the recovery of oil... By 1815, improved forms of the hydraulic press were introduced in France and Germany, where their use spread rapidly.” Bags were soon replaced by press cloths.

In the 20th century, the continuous screw press or expeller was invented in the United States; it is still in use (see p. 504). “The rise of the soybean processing industry in the United States in the 1930s created a further demand for these presses. Efficiency, as well as capacity increased until it became possible to process soybeans so as to reduce the residual oil content of the cake to 3.5 or 4.5 percent.” But “oil technologists were not satisfied to leave even this amount of oil in the extracted cake.”

“The first practical process for the solvent extraction of oil from oilseeds was developed by Jesse Fisher in Birmingham, England, in the 1840s, but no patent for the

solvent extraction of fatty oil was granted until 1856...

Solvent extraction has been practiced on a fairly large scale in Europe since 1870. The first extractors were single-unit, unagitated, batch vessels. Soon multiple unit, agitated, counter-current extractors appeared. Many attempts were made to develop a continuous solvent-extraction process, and about 1920 Hermann Bollmann in Germany developed an extractor that was especially adapted to the recovery of oil from soybeans. This extractor and its operation are discussed in detail in the next chapter.”

Soon Karl Hildebrandt in Germany developed another type of continuous solvent extractor. It “is a combination of two vertical enclosed screw conveyors connected at the bottom by a cross conveyor so that the whole forms a U. The previously rolled or flaked oilseed moves in one leg in the same direction as the flow of the solvent, and in the other leg in the opposite direction.

“This type of extractor was introduced in the United States for processing soybeans in 1934 [By ADM, began operation in April and by Glidden in Nov.] and was followed very shortly by the Bollmann, or paternoster, extractor” [By Central Soya, began operation in Nov. 1937]. Somewhat later, an extractor of American design—the rotating plate, vertical gravity extractor—was introduced [in late 1937 to American Soya Products Corp. Evansville, Indiana, by Allis-Chalmers & Michelle Bonotto]. It was followed by a modified type known as the stationary-plate [plate?] extractor.

“The rapid adoption of continuous solvent extractors for processing soybeans resulted from the fact that such plants are almost completely automatic and yield a meal containing only 0.6 to 0.8 percent of oil, or a recovery of about 97 percent.”

There follows a good history of refining crude oils. “The earliest methods consisted simply of settling and filtering out the solid or gummy materials. Later certain earths or clays were added before filtering to help remove solid impurities and also some of the pigments., thereby imparting a clear and bright appearance. One of the most important in the refining process consists in removing the free fatty acids naturally present in the oil.” Address: Head, Oil and Oilseeds Div., Southern Regional Research Lab., New Orleans, Louisiana.

301. Burlison, W.L. 1952? Looking ahead with soybeans. Urbana, Illinois. 14 p. Undated. Unpublished manuscript.

• **Summary:** Dr. Burlison, who had retired in June 1951, prepared this undated, handwritten manuscript for a talk on soybeans he gave or intended to give in about 1954. Contents: Introduction. 1. The challenge of the past: Publications, research, extension work, early soybean farmers (Stoddard of Carlinville), American Soybean Association, soybean processors in the USA and Illinois, Illinois Farm Advisers Assoc., H.G. Atwood and the Peoria Plan, establishment of Regional Soybean Laboratory 1936

is most significant recent event in soybean history (part is located in Peoria, headquarters in Urbana, Illinois), the challenge, Illinois still leads in soybean production.

2. The facts of the present: Strong interest by the university, researchers, farmers, and processors, average yield has more than doubled.

3. The promise of the future: Industrialists predicted needs for the future (See *Soybean Digest*, Sept. 1952. R.M. Bethke of Ralston Purina Co., H.C. Black of Swift & Co., J.C. Konen of Archer Daniels Midland Co., Ward Calland of National Crop Improvement Council, Mitsuo Hirano, president of Association of Oil and Fats Manufacturers of Japan, J.C.A. Faure of International Association of Seed Crushers, E.M. Learmonth of British Soya Products Ltd. (London), USDA Office of Agricultural Experiment Stations, George Strayer of American Soybean Association).

As early as 1897 in Illinois, "the soybean showed great future promise. To date our College of Agriculture has published 32 bulletins and 42 circulars and many hundreds of journal articles and pamphlets of various kinds. This is truly a fine record."

Today in the United States there are 260 plants which process soybeans; 37 of these are in Illinois.

"It should be noted that the first recorded effort to find an outlet for surplus [soybeans] was in 1921 when the president of the Illinois Farm Advisers Association contacted the industry for the purpose of finding a possible outlet in Illinois to handle our soybeans. Our soybean production was just getting under way which meant some uncertainty in soybean supplies.

"This uncertainty continued until 1928 when, because of heavy abandonment of winter wheat in Illinois, it seemed necessary to turn to soybeans for a part of the acreage if some assurance could be given that a sudden increase in production would not result in ruinous prices. After some negotiations with the late H.G. Atwood a price was set for soybeans as far as his company was concerned. So far as we know, this is the first instance of a case where the price was fixed before that crop was produced. This was a very important move in giving soybeans considerable stability.

"The most significant recent event in soybean history was the establishment in 1936 of the Regional Soybean Laboratory a part of which is now located in Peoria, Illinois, and a section devoted to soybean breeding with headquarters at this university."

"Illinois is still by long odds the leading soybean-producing state. Of the state's 102 counties, 41 produced from 1- to almost 4 million bushels in 1951. Outside of Illinois there are only 21 counties in the nation that produced 1 million bushels of soybeans last year. Four Illinois counties grew between 3 and 4 million bushels in 1951." Champaign County leads the nation with almost 4 million bushels. Address: Univ. of Illinois.

302. Liener, Irvin E.; Hill, Eldon G. 1953. The effect of heat treatment on the nutritive value and hemagglutinating activity of soybean oil meal. *J. of Nutrition* 49(4):609-20. April. [17 ref]

• **Summary:** From unheated soybean flour the authors have isolated a heat-labile protein fraction which is toxic to rats. "A characteristic property of this toxin, which was given the name 'soyin'\*, is its marked *in vitro* agglutinating action toward the red blood cells of the rabbit." (Footnote: \*\*"Pending proof of their non-identity, the terms 'soyin' and 'hemagglutinin' will hereafter be used interchangeably"). The term "hemagglutinating activity" is used several times in this article. Hemagglutinins, like trypsin inhibitors, are easily destroyed by heat. Nutrisoy XXX, a defatted soybean oil meal which had been subjected to a minimum amount of heat treatment, was made by Archer-Daniels-Midland Company (Minneapolis, Minnesota) and was used in this experiment. Address: Div. of Agricultural Biochemistry and Poultry Husbandry, Univ. of Minnesota, St. Paul.

303. *Soybean Digest*. 1953. Grits and flakes... from the world of soy: Hall S. Dillon has been named head of the Archer-Daniels-Midland Co. paint laboratory, Minneapolis, Minnesota... Dec. p. 28.

• **Summary:** "... He succeeds Floyd Nelson who will be technical sales representative of ADM in several Southern and Western states. Dillon joined ADM in 1949."

304. Pallansch, Michael J.; Liener, Irvin E. 1953. Soyin, a toxic protein from the soybean. II. Physical characterization. *Archives of Biochemistry and Biophysics* 45(2):366-74. Aug. [19 ref]

• **Summary:** The authors describe a procedure for the preparation of soyin from defatted soybean flour Nutrisoy XXX (made by Archer-Daniels-Midland Co., Minneapolis, Minnesota). Various physical constants were provisionally reported: isoelectric point (6.1), diffusion constant, sedimentation constant, molecular weight (105,000), and frictional ratio. Address: Dep. of Agricultural Biochemistry, Univ. of Minnesota, St. Paul.

305. Pellett, Kent. 1953. Many unheralded uses for soybean fatty acids. *Soybean Digest*. Oct. p. 8-10.

• **Summary:** Soybean fatty acids used to be seen as almost worthless by-products of the soybean oil refiner's foots kettle. They were sold only to soap manufacturers, who bought them for little more than transportation costs. "Now they are convertible into fatty acids of uniform grades which enter into products as various as rubber and paints, perfumes and paper, and insecticides and cosmetics. And fatty acids are quoted on commodity exchanges at about the price of crude soybean oil. Few products have a wider range of usage yet are more unheralded. The consumers of the end products never hear of fatty acids.

“The fatty acids industry has undergone a big expansion in the past five years... There are about 24 manufacturers of soybean and other fatty acids... General Mills, one of the world’s largest flour millers,... entered the fatty acids field when it built its Chemoil plant at Kankakee, Illinois, a few years ago.”

It was the process of fractional distillation, developed by the petroleum industry, which made it possible to separate fatty acids and tailor them to desired end uses. “Soap and protective coatings are still the chief uses for vegetable oil fatty acids. Paint and varnish lead, with the two uses together consuming 80 percent of the fatty acids produced. Other sizable fields are: rubber 5 percent and chemicals 6 percent.

“Soybean fatty acids are important in many other fields such as linoleum and oilcloth, metal working, cutting and core oils, textiles, leathers, adhesives, cosmetics and pharmaceuticals, though the volume used in these products is small...”

“The producers of fatty acids have their own organization, the fatty acids division of the Association of American Soap & Glycerine Producers, Inc. The following firms, in addition to General Mills, are producers of soybean fatty acids: Acme Hardesty Co., New York, N.Y. Principally for hand soaps and resins. Archer-Daniels-Midland Co., Minneapolis, Minnesota. Armour & Co., Chicago, Illinois. E.F. Drew & Co., New York, N.Y. Emery Industries, Inc., Cincinnati, Ohio. A. Gross & Co., New York, N.Y. For alkyd resins and specialty soaps. W.C. Hardesty Co., Inc., New York, N.Y. For soap and alkyd resins. Southern Cotton Oil Co., New York, N.Y. For protective coatings, synthetic resins, soft soaps, waxes and polishes, and printing inks. Swift & Co., Hammond, Indiana. Vegetable Oil Products Co., Los Angeles, California. For alkyd resins, lubricating greases, soap and rubber. Wilson-Martin Division, Wilson & Co., Philadelphia, Pennsylvania. For soap and alkyd resins. Woburn Chemical Co., Harrison, New Jersey.” Address: Managing Editor, The Soybean Digest, Hudson, Iowa.

306. Burial and death record (findagrave) for Reuben Peter Andreas; died on 30 Dec. 1953 (aged 72) at Miami Beach, Dade County, Florida. 1953. Lisbon Cemetery, Lisbon, Linn County, Iowa.

• **Summary:** Findagrave says Reuben P. Andreas born was on 31 Aug. 1881, Prairieville, Lee County, Illinois. A photo shows his simple headstone.

Parents: Martin G. Andreas (born 18 July 1845 in Lancaster County, Pennsylvania, died 18 Jan. 1930 in Sterling, Illinois, aged 84) and Mary H. Rutt (born 24 June 1851 in Lancaster Co., Pennsylvania, died 5 July 1907 in Sterling, aged 56, at Sterling, Whiteside Co., Illinois). Both are buried at Science Ridge Mennonite Cemetery, Sterling, Whiteside County, Illinois.

His siblings were:

Fanny R. Andreas Myers (1870-1948). William G.

Andreas (1872-1928). Anna L. Andreas Mellinger (1878-1960). Each sibling has a full record in findagrave.

His spouse was Lydia Barbara Stoltz (born 13 Nov. 1882 at Sterling, Whiteside County, Illinois, died 8 May 1938, aged 55, in Lisbon, Linn County, Iowa). She was buried next to her husband at Lisbon Cemetery, Lisbon, Linn County, Iowa. A photo shows her simple headstone.

Peter’s 5 children were: Osborn S. Andreas (1903-1907), Albert Martin Andreas (1907-1988), Glen Allen Andreas (1917-1993), Dwayne Orville Andreas (1918-2016), and Lowell Willard Andreas (1922-2009).

Note: Reuben P. Andreas actually had six children. The missing child is Lenora “Lenore” Jeanette Andreas. Born 21 July 1913 in Nobles Co., Minnesota, died 9 May 1969 in Miami, Dade County, Florida. Her first marriage was to George G. Schunknedt on 21 April 1932 in Lisbon, Linn Co., Iowa. She was also married to Harlon Sober and Marvin R. Steele. See separate record about Lenora/Lenore. Address: Lisbon Cemetery, Iowa.

307. *Gazette (The) (Cedar Rapids, Iowa)*. 1953. R.P. Andreas, 72, Honeymead plant founder, is dead. Dec. 31. p. 1, col. 3; p. 2, col. 5.

• **Summary:** “Cedar Rapids News—Reuben Peter Andreas, 72, of Cedar Rapids, who pyramided a hand mixer into a huge Midwest feed business, died at 3:30 p.m. Wednesday at Miami Beach, Florida, following a long illness.

Founder of the Honeymead Products Company of Cedar Rapids, he was chairman of the board of that firm until earlier this year when ill health forced his retirement. He was living in Florida because of his health.

“Mr. Andreas, bread truck driver, farmer and feed dealer, was the guiding hand of the Honeymead firm in its early years and was responsible for the building of the first continuous soybean solvent extraction plant in the United States.

Born Aug. 13, 1881, at Sterling [or perhaps Prairieville, Lee County], Illinois, Mr. Andreas attended school at Prairieville, Illinois, graduating in 1896. He then took a business college course at Sterling and for a time drove a bread wagon there.

“Began farming: Following his marriage to Lydia Stoltz on Nov. 28, 1902 [sic, Nov. 27, 1902], he began farming near Prairieville. Nine years later he went to Minnesota and continued farming for eight more years before moving to a farm near Lisbon, Iowa.

“In 1922 Mr. Andreas retired from farming to take over a grain, coal, and seed business in Lisbon, which included the Lisbon elevator.

“Five years later he began the operation that was to expand into one of the largest feed firms in the Midwest.

“In 1927 he began manufacturing mixed feeds at Lisbon on a small scale, using a hand mixer in a small room there. The feed end of the business was a sideline proposition



covering a territory in and around Lisbon.

“Business expanded: During the next three years the business expanded and in 1930 the firm installed molasses tanks and started handling molasses in tank car lots. A feed mixer also was purchased at that time.

“With the introduction of corn molasses to the feed trade, the firm began to expand and in 1936 it was renamed the Honeymead Products Company, manufacturers of livestock feed, and moved [from Lisbon] to Cedar Rapids. Mr. Andreas was named president. By that time four of his sons were in partnership with him.

“During its first year of operation in Cedar Rapids the Honeymead Company grossed more than a million dollars.

“It was in 1937 that the company installed the first continuous solvent extraction process plant in the United States. Note: Who designed and built that plant?

In Civic Affairs: In later years large portions of the Honeymead properties were sold to other firms until today the main Honeymead operation is in Mankato, Minnesota.”

After disposing of much of his business interests, Mr. Andreas remained active in civic affairs in Lisbon and Cedar Rapids.

“He served on the board of directors of the Lisbon Trust and Savings bank and, while living in Lisbon, served on

the school board. He was also a member of the Evangelical church there.

“His home in Cedar Rapids was at 525 Vernon Drive SE.

“Mr. Andreas was a member of the Chamber of Commerce, the Elks, the Masons, and the Cedar Rapids Country club.

“His wife died in 1938. He later [10 Aug. 1940 in Dubuque, Dubuque County, Iowa] was married to Pauline Stoltz Herrick, the sister of his first wife.

“Funeral Saturday: Survivors include his wife; a daughter, Mrs. Marvin (Lenore) Steele of North Miami, Florida; five sons, Lowell W. of Mankato [Minnesota]; Osborn, of Chicago; Albert M., of Miami Beach [Florida]; Dwayne O., of Excelsior, Minnesota; and Glenn A., of Pella [Iowa]; two sisters, Mrs. Ben Mellinger and Mrs. Ida LeFevre, both of Sterling, Illinois; 15 grandchildren and three great-grandchildren.

“The body will arrive in Cedar Rapids Saturday morning and services will be conducted at 1:30 p.m. Saturday at Beatty-Beurle chapel. Burial will be in the Lisbon cemetery.

“Friends may call at the chapel after 10 a.m. Saturday.”

A portrait photo shows Reuben Peter Andreas.

308. *Soybean Digest*. 1953. Grits and flakes... from the world of soy: Archer-Daniels-Midland Co., Minneapolis, opened its new vegetable oils processing plant in Los Angeles, California, recently. Dec. p. 28.

• **Summary:** “The plant, described as the most versatile of its kind on the West Coast, will convert linseed, soybean and other industrial oils into products used in the paint, varnish, printing ink and linoleum industries.”

309. Archer-Daniels-Midland Co. 1954. Nature locked the cupboard—but ADM found the key (Ad). *Soybean Digest*. Feb. p. 21.

• **Summary:** A full-page black-and-white ad. “Nature was generous when she created the soybean.

“In each tiny bean are precious ingredients—raw materials for modern industry. The problem, then, is to unlock this rich supply—to extract and separate, to purify and improve—to get out everything which nature put in.

“Take the meal, for example. It’s naturally rich in protein, but without man’s help, much of this protein remains ‘locked-up’ in an indigestible form.

“Archer-Daniels-Midland has developed a carefully controlled cooking process which releases the full growth promoting power. The result? 20% greater protein efficiency—and extra gains worth as much as \$91 more per ton than those produced by some soybean oil meals.

“This is nothing new for ADM. For 25 years, it has been a leader in creating new and better uses for the soybeans you grow. Scores of products born in ADM laboratories and produced in ADM processing plants play vital roles in

# Nature locked the cupboard

## ...but ADM found the key

Nature was generous when she created the soybean.

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This is the way your markets are built ... and this is how they will continue to grow.

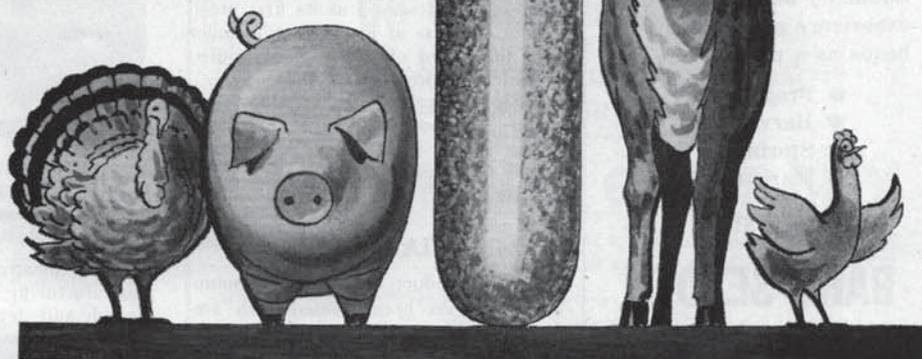
### Some ADM Products made from Soybeans

- ADM Soybean Brew Flakes
- Admex 710 (a plasticizer for vinyl resins)
- Archer "S" (Salad Oil)
- Archer 44% Soybean Oil Meal, Pea-Size, Pellets, Flakes
- Archer 50% Low Fibre Soybean Oil Meal
- Archer Booster Feeds
- R-Lecin (Soybean Lecithin)
- Bakers Nutrisoy
- Daniels' Supreme
- Kaysoy
- Nutriwhip
- Packers Granular
- Paint Vehicles
- Soya/Fatty Acids
- Soy Flour

### Archer-Daniels-Midland Co.

600 Roanoke Building • Minneapolis 2, Minnesota

*Creating New Values from America's Harvests*



America's daily life.

"This is the way your markets are built—and this is how they will continue to grow."

"Some ADM products made from soybeans: ADM Soybean Brew Flakes. Admex 710 (a plasticizer for vinyl resins). Archer "S" (salad oil). Archer 44% soybean oil meal, pea-size, pellets, flakes. Archer 50% low fibre soybean oil meal. Archer booster feeds. R-Lecin (soybean lecithin). Bakers Nutrisoy. Daniels' Supreme. Kaysoy. Nutriwhip. Packers granular. Paint vehicles. Soya fatty acids. Soy flour.

"Creating new values from America's harvests."

Address: 600 Roanoke Building, Minneapolis 2, Minnesota.

310. Terrill, R.L. 1954. The soybean research council: Information gathered by processor group benefits entire soybean industry. *Soybean Digest*. July. p. 18-20.

• **Summary:** Contents: Introduction. Annual meeting. Meal in feeds. A good overview of the goals and activities of the SRC which "is officially a standing committee of the National Soybean Processors Association."

Its "work is of considerable indirect benefit to soybean growers because the information it develops concerning many of the technical aspects of the soybean industry basically serves to increase the utilization of soybean products. Its activities range from studies relating to breeding and cultural practices on soybeans to the utilization of the multitudinous soybean-containing products of today's market. In virtually no other American industry do the processors involved maintain entirely at their expense a group of technical experts whose basic purpose is to gather, evaluate, and distribute technical information for the benefit of the entire industry."

Total membership now stands at 14. Membership is made up not only of men from various member firms but may also include members of outside organizations, for example Dr. J.C. Cowan, head of the oil and protein division of the Northern Regional Research Laboratory at Peoria, Illinois.

The chairman of the council is elected by vote and generally by custom serves for at least 2 years. Dr. Howard C. Black (of Swift & Co., Chicago) is the current chairman. The council maintains a survey (library) of literature pertaining to the soybean. "For the past nine years, the Soybean Research Council has sponsored an Annual Flavor Stability Symposium, and much of the progress in bringing soybean oil to its present status as the major edible oil of the United States can be traced to material sponsored, encouraged, and presented at these meetings. These papers are later presented at the appropriate technical society, but the symposium method is such as to encourage free and frank discussion and interchange of information..." "The most recent symposium was conducted in October 1953 at Chicago, with Harry L. Craig as chairman. Deodorization techniques, objective methods of grading flavor and flavor

stability, and a panel discussion of factors limiting the utilization of soybean oil were among the items on the program."

"Present members of the Soybean Research Council: H.C. Black, Chairman, Swift & Co., Chicago, Illinois. M.L. Brinegar, Allied Mills, Inc., Libertyville, Illinois. J.W. Hayward, Archer-Daniels-Midland Co., Minneapolis, Minnesota. Albert C. Groschke, The Borden Co., New York, NY. H.L. Craig, The Buckeye Cotton Oil Co., Cincinnati, Ohio. W.W. Cravens, Central Soya Co., Inc., Decatur, Indiana. Stuart Bauer, The Drackett Co., Cincinnati, Ohio. Fred H. Hafner, General Mills, Inc., Chemical Div., Minneapolis, Minnesota. Max A. Jeter, The Glidden Co., Indianapolis, Indiana. J. Wesley Nelson, Cargill, Inc., Minneapolis, Minnesota. Everett Blasing, Pillsbury Mills, Inc., Clinton, Iowa. Harold L. Wilcke, Ralston Purina Co., St. Louis, Missouri. Robert L. Terrill, Spencer Kellogg & Sons, Inc., Buffalo, New York. John C. Cowan, Northern Regional Research Laboratory, Peoria, Illinois.

In 1952 the SRC conducted a "broad program of study with regard to the position of soybean oil meal in animal feedstuffs. It was attempted to establish two broad principles: one, the effect of various types of processing (expeller vs. solvent, etc.) on the nutritional quality of soybean oil meal, and two, whether or not this nutritional quality could be predicted on the basis of chemical tests." Soon all manufacturers were invited to submit samples for evaluation.

In 1953 another soybean oil meal survey, even more ambitious than the first, was undertaken. Address: Spencer Kellogg & Sons, Inc., Buffalo, New York.

311. Archer-Daniels-Midland Co. 1954. "Looks like another good soybean year!" *Soybean Digest*. Dec. p. 28.

• **Summary:** The bottom half of the ad shows two men talking to one another. On the top half is this text:

"Next year will be a good year for soybeans, too. And so will the year after that.

"Back in 1929, when Archer-Daniels-Midland opened its first soybean processing plant, the nation's entire soybean crop amounted to only 8.7 million bushels.

"This fall, America's farmers are preparing to harvest over 300 million bushels!

"Amazing? Certainly... for this spectacular increase could not have occurred if the demand for soybeans had not kept pace. And Archer-Daniels-Midland has played an important part in building this demand.

"Scores of new products have been created in ADM's famous research laboratories, processed at a lower cost in ADM's giant soybean plants, and distributed through the skill of ADM's aggressive sales and marketing organization.

"This is how markets are built... and this is how they continue to grow. This year... this month... this week... exciting new soya products are being tested and perfected by ADM scientists. Yes, this will be a good year for soybeans..."

and we at ADM predict that many more good soybean years lie ahead.”

Just below this text is:

“Archer-Daniels-Midland Co.

Creating values from America’s harvests. Minneapolis 2, Minnesota.

To the right of that is ADM’s symbol of an Archer pulling back an arrow in a bow, with a quiver full of arrows on his hip and wearing a feather upright in his cap. Address: Minneapolis 2, Minnesota.

312. Cross, Marion E. 1954. From land, sea, and test tube: The story of Archer-Daniels-Midland Company. Minneapolis, Minnesota: ADM. 88 p. Illust. Index. 28 cm. Second revised edition, Jan. 1957.

• **Summary:** Contents: 1. Flax comes to America. 2. The Daniels Linseed Company. 3. The Archer-Daniels Linseed Company. 4. Eastward ho! 5. Archer-Daniels-Midland Company is formed. 6. Formula for growth. 7. A depression is fruitful. 8. Animal, vegetable and chemical. 9. The soybean–Jack of all trades. 10. New products from research. 11. New horizons. 12. Directors and elected officers.

Pages 23-25: John W. Daniels hoped to have the mill at Minneapolis ready in Oct. 1910 but it was not ready until 17 Feb. 1903 to start crushing flaxseed to make linseed oil. “In the first full year of operation, which closed Aug. 1, 1904, the company showed a profit of \$72,000.

Portrait photos show John W. Daniels and George A. Archer. Shreve M. Archer and Professor H.L. Bolley.

On 7 Feb. 1905 it was voted to take the necessary steps toward changing the firm’s name to the Archer-Daniels Linseed Company. George A. Archer, who owned 50% of the company, was president. “When the Archer-Daniels Linseed Company was formed in 1905, John W. Daniels was 47 years old and George A. Archer was 55.

In about 1909-10 Prof. Bolley, at North Dakota Agricultural College, developed a variety of flax that was resistant to the parasitic fungus that had been causing extensive wilt among U.S. flax plants.

“In order to compete in the eastern market, Archer-Daniels Linseed Company built a linseed mill at Buffalo, New York, which started crushing Feb. 28, 1916.”

Pages 32-33 give a detailed discussion of the 1920 Department of Justice complaint concerning price fixing. This description makes the practice look much more reasonable. The case finally reached the U.S. “Supreme Court where a ruling was handed down in 1923 that the “open price” plan of the Bureau [of Related Industries] was a violation of anti-trust law. Within two years of the time the Bureau was forced to disband, the verdict was practically reversed by a subsequent Supreme Court ruling.

Pages 34-37: “The Midland Linseed Products Co. was, like Archer-Daniels, one of the leading firms in the [flaxseed crushing] industry. (Note: Midland Linseed Oil company

was first incorporated on 26 Sept. 1900 in Minneapolis with a capital stock of \$400,000). “On May 2, 1923, the Archer-Daniels-Midland Company was organized to take over the plants of Midland and the assets of Archer-Daniels. The new company, whose combined properties were placed in the books at \$7,466,032, became the world’s largest producer of linseed oil. Its nine mills contained a total of 334 presses.” A table shows the distribution of these presses.

“For many years the lion’s share of flaxseed crushing had been handled by 4 firms, and then, after the merger of Archer-Daniels and Midland, by 3: ADM, Spencer Kellogg and Sons, Inc., of Buffalo, and the American Linseed Company [owned by Rockefeller interests].

Pages 39-40: By a contract signed July 20, 1928, ADM and Spencer Kellogg agreed to a joint purchase of America’s linseed interests” [i.e., the far-flung mills owned by American Linseed Co.].

From a sentimental point of view the purchase must have been eminently satisfactory, particularly to John W. Daniels and George A. Archer, who more than a quarter of a century earlier had left the American Linseed Company to found their own extremely successful business.

“During 1929 ADM took two more extremely significant steps toward diversifying its manufacturing activities.

Converting the Toledo and Chicago plants to the crushing of soybeans did not seem momentous at the time because the United States was just becoming aware of the potential value of the soybean” (p. 40). A photo (facing p. 40) shows the ADM Soybean Processing Plant in Chicago, Illinois.

Chapter 9, titled “Soybean–Jack of all trades” (p. 56-63) begins with an overview of soybean history worldwide, with emphasis on the USA. “Until 1935 the supremacy of the hydraulic press was unchallenged, but within a few years, it was well on its way to becoming obsolete. An improved expeller press came on the market in 1935 that gave better results on soybeans than the hydraulic press” (p. 60).

“When ADM first started to process soybeans in 1929 at its Toledo and Chicago plants, the hydraulic presses that had been used for flaxseed were used for soybeans... ADM took a bold step in deciding to install a solvent extraction unit for soybeans at its Chicago plant. In this country solvent extraction, never used for volume production, had made very little headway because no satisfactory solvent had been found. The soybean industry was still in its early stage of development and there was no certainty that it was just on the verge of enormous expansion. Furthermore, it was still the depth of the depression and in 1933 ADM’s net sales were the lowest they had ever been. At this time plant superintendent E.W. Schmidt was sent to Europe to make a study of solvent extraction and bring back the best equipment available. Solvent extraction had originated in Europe, having been introduced by an Englishman in 1843; but only in recent years had the process been perfected to the point where it had come into wide use.

“The Hildebrandt unit that Mr. Schmidt selected in Germany consisted of a U-shaped tube about three feet in diameter. The soybeans, having been crushed and rolled into paper-thin flakes, entered one end of the tube through which they were propelled by revolving screws. The solvent, hexane, entered the other end of the tube and moved in the opposite direction while it extracted the oil from the flakes. The oil and solvent mixture came out one end of the tube and the meal came out the other. After the solvent had been removed by distillation, the oil was ready to be refined and the solvent was available for re-use. This process was so effective that only one per cent of the oil was left in the meal. The lower oil content made solvent extracted meal very hard to sell at first, even though feed purchasers were being offered a protein concentrate that contained 44 per cent protein as compared with the 41 per cent produced by hydraulic or expeller presses.

“After the extraction unit had been installed in June 1934, ADM started to produce lecithin, which is derived from crude soybean oil. Like the soybean itself, lecithin has a wide variety of uses for edible, industrial, and medicinal purposes. It is an important ingredient in bakery products, ice cream, and candy, being particularly valuable as a preservative coating for chocolate. Its industrial use ranges from anti-knock gasoline to the textile field and its medicinal uses include cosmetics and pharmaceuticals” (p. 60-61).  
Address: ADM, Minneapolis, Minnesota.

313. Haynes, Williams. 1954. *American chemical industry: A decade of new products*. Vol. 5. Toronto, New York, London: D. Van Nostrand Co. li + 622 p. Index. 24 cm. [9 soy ref]  
• **Summary:** This volume of the 6-volume history, covers the period 1930-1939. Chapter 3, “The Depression-Proof Industry,” discusses Dr. William J. Hale and the origins of chemurgy. He dramatized his idea at the 1931 meeting of the Manufacturing Chemists’ Association, then in 1934 he coined the word “chemurgy,” analogous to metallurgy, meaning working with chemicals, and published his provocative volume, *The Farm Chemurgic*. In 1935, with the active support of Francis P. Garvan and Henry Ford, the Farm Chemurgic Council met at Dearborn, Michigan, and formally organized, with Garvan as president, Wheeler McMillen as vice-president for science, etc. In 1938 Wheeler McMillen succeeded Garvan as president. The chemurgic movement spread far and fast, particularly in the South. At the second Chemurgic Conference in 1936 there was an active discussion of alcohol-gasoline blends. Garvan said that if the 33½% alcohol fuel marketed in England were adopted in the USA, it would put 90 million acres and 6 million unemployed back to work. Henry Ford became interested in growing crops for alcohol to use in lacquers and fuels (power alcohol).

Chapter 16, titled “New Raw Materials” (p. 226-42), notes that “Depression conditions put a premium upon low-

cost supplies and emphasized, especially in the chemical industry, every possible salvage of any waste... Henry Ford not only underwrote the early meetings of the National Farm Chemurgic Council, but he set up at Dearborn a farm products research group... where soybeans became the chief project.

“In the South, where the great staple crops cotton and tobacco had been true chemurgic enterprises generations before Dr. Hale had coined the word, the interest was particularly keen, and in 1937 Senator Bilbo of Mississippi introduced a bill (S. 2140) appropriating \$1,000,000 to be administered by the Department of Agriculture in establishing a research center to solve Southern agricultural problems by finding suitable new crops and profitable new uses for farm products. This idea was altogether too promising to be confined to a single section. Accordingly, the Farm Relief Act of 1938 carried a rider appropriating \$4,000,000 for the establishment of four regional laboratories devoted primarily to chemurgic research...

“Eventually the laboratories were well located at New Orleans, Louisiana; Peoria, Illinois; Albany, California, across the bay from San Francisco; and Wyndmoor, a suburb of Philadelphia [Pennsylvania].”

Pages 277-78 note that the isolation of progesterone, a female sex hormone, was announced almost simultaneously by 4 groups of workers in 1934. It “can be extracted from animal ovaries or synthesized from sterols such as stigmaterol, obtained from soybeans, or obtained from brain or spinal cord of animals...”

In the chapter “New Constituents for Coatings,” pages 355-57 note: “Henry Ford helped the soybean mightily. In 1932 the Ford Motor Company planted 8,000 experimental acres, increased two years later to 12,000, on which 300 varieties were tested, and the harvested crop was processed in an experimental six-ton plant in Greenfield Village. Over 1,000,000 gallons of [soy] oil were used in the ‘paint job’ on Ford cars, 540,000 gallons more made into glycerin to charge the shock absorbers, while 200,000 gallons were used as sand-core binder in the foundry, requirements that demanded beans from 64,000 additional acres. These chemurgic feats were not hidden under a basket, and Ford publicity induced many Middle West farmers to grow this crop.

“The soybean has had an interesting part in crushing techniques. In 1927, when the crop passed 2,000,000 bushels, only a small part of it went to the crushers, the largest at the time, A.E. Staley Manufacturing Company of Decatur, Illinois, handling that year only 165,000 bushels. Staley, which first crushed soybeans in 1922, had been followed by Funk Brothers and a little later by Allied Mills, and with the exception of the pioneer, all the early crushers used plate-type hydraulic presses, standard equipment for linseed crushing. Staley was a trail blazer, demonstrating the expeller press as more efficient for use with soybeans. In 1934 the first large-scale solvent-recovery plant was put in

operation by Archer-Daniels-Midland, followed shortly by a similar installation by the Glidden Company, which was demolished by an explosion soon after its completion. This disaster retarded the development of this process, and during the thirties expeller-type equipment was almost universally adopted. Spencer Kellogg & Sons first crushed soybeans at its Des Moines [Iowa] plant in 1934 and each year following installed equipment at another of its plants, employing both the expeller and solvent methods. In establishing this new industry, the individual leaders were Augustus Staley, late president of A.E. Staley Manufacturing Company and Whitney Eastman, formerly with Archer-Daniels-Midland and more lately with General Mills...

“The earliest extraction operations, installed in 1934-35 by Archer-Daniels-Midland and Glidden, employed Hildebrandt extractors, and a variety of solvents were tried out: acetone, benzene, gasoline, carbon bisulfide, and some of the chlorinated solvents. Glidden embarked on chemical exploitations of soybeans, extracting lecithin, marketed by the American Lecithin Company (Joseph Eichberg, president), and developing a paper-coating product known as Alpha-Protein. In 1934 Archer-Daniels-Midland reopened the plant of its subsidiary, Wm. O. Goodrich Company at Milwaukee, Wisconsin, as a soya operation, and in 1938 Spencer Kellogg purchased the Shellabarger Grain Products Company’s oil mill at Decatur. Other well-known firms interested in soybean products during the 1930s were the Buckeye Cotton Oil Company, subsidiary of Procter & Gamble, soaps, and Larowe Milling Company, feedstuffs.”

Pages 471 and 472 give the high and low price per pound for crude domestic soybean oil in tanks from 1930 to 1939.

Appendix X (p. 486-490), titled “The Farm Chemurgic Movement” by William J. Hale, gives an excellent, concise history of the subject.

Appendix XXVII gives a detailed table showing factory consumption of primary fats and oils in 1939. The leading vegetable oils (in million lb) were: cottonseed oil 1,321, coconut oil 529, soybean oil 370, linseed oil 344, and palm oil 271. The soybean oil was used mostly in shortening (201.6), followed by oleomargarine (70.8), and other edible products (32.3). The main non-food industrial uses were paint and varnish (21.7), soap (11.2), and linoleum & oilcloth (6.4). Address: Stonington, Connecticut.

314. *Soybean Digest*. 1955. Grits and flakes... from the world of soy: New ADM Department. May. p. 35.

• **Summary:** “In a move aimed at further diversification of its activities, Archer-Daniels-Midland Co. has announced the formation of a new products development department. Dr. George K. Nelsen, formerly with the Celanese Corp. and the Shell Development Co., has been named director of the newly created department which is being expanded under Nelson’s direction.

“At the present time ADM makes 850 products which range from livestock and poultry feeds to chemicals.

“In his new position Dr. Nelson will evaluate the market potential for new products developed in ADM research laboratories and will be responsible for the introduction of new products. Nelson also will supervise the company’s market research activities.”

A small portrait photo shows Geo. K. Nelson.

315. *Soybean Digest*. 1955. ADM plans major expansion at Mankato plant [in Minnesota]. Aug. p. 26.

• **Summary:** Thomas L. Daniels, president of Archer-Daniels-Midland Co. announced: “Richer, smoother doughnuts, new high-energy feeds for poultry and hogs, and glues for the plywood factories of the Pacific Northwest will result from a new group of products which will soon be manufactured from soybeans at Mankato, Minnesota.”

One group of products scheduled for immediate production at the expanded plant is a family of industrial soy flours marketed under the ADM trade name Kaysoy. Millions of pounds of such highly refined flours are now used as adhesives and coatings for water-resistant plywood glues.

An illustration shows how the soy processing plant will look next October when the expansion is completed. “Three-story addition to the soybean preparation building (center) will house equipment for dehulling soybean and for grinding soy flour.”

316. Andreas, Dwayne O. 1955. The world fats and oils situation... and its effect on U.S. soybeans. *Soybean Digest*. Sept. p. 25-26, 29.

• **Summary:** Note: Here you see can see Dwayne Andreas’ brilliant mind at work—analytical, and ultimately fair and reasonable.

“Most of the problems which lie ahead for crushers and producers are mutual problems. Our interests are much more mutual than divergent. Recognition of this fact is becoming more and more apparent and more urgent to both of us. And we in the crushing industry look forward to more and closer cooperation with you and other organizations which represent the growers of soybeans.

“We crushers are in a real sense the agents of the growers in marketing their soybeans in the form of products. If we will keep this concept uppermost in our minds we will see why it is that on most issues the crushers and the soybean growers naturally find themselves on the same side of the fence.

“Although soybeans might be considered essentially a feed grain because 85 percent by weight is protein feed eventually consumed on the farm, the value of soybeans is also affected by the value of the oil since it is the oil that goes directly into off-farm markets. Therefore, for the purpose of this discussion I would like to sum up the world fats and oils situation for the 1955 crop marketing year

beginning Oct. 1.

“World production for 1955 is estimated at approximately 26.7 million metric tons of all oils and fats. This exceeds 1954 production by some 600,000 to 700,000 tons and continues supplies at a level above prewar per capita consumption. Prewar per capita consumption was attained in 1953 for the first time.

“In the United States we again have prospects for a new record production and a record surplus for export. Although this surplus oils and fats production today is far larger than it was when our Department of Agriculture made some far-reaching decisions as to its 1955-crop price support policies, the possibilities were even then quite evident.

“On the basis of the latest official crop reports the United States supply of edible oils and fats for the new marketing year exceeds the supplies of last Oct. 1. This is a remarkable truth in spite of the fact that last year’s supplies included a huge government accumulation of cottonseed oil. Production of edible fats is indicated nearly 1 billion pounds larger than in 1954-1955. Let me repeat, we will have more fats and oils to market this year than last year even after including in last year’s supplies the entire accumulation of cottonseed oil in government hands.

“The U.S. government by supporting prices for edible oils and fats through the cottonseed products purchase program has in effect represented the farmer in disposing of his oil and fat surplus. If the government elects (as presently indicated by its announced plans for the 1955 crop) to change from this position of acting as agent of the farmer in disposing of surplus oil production then we must face some even more unpleasant possibilities.

“One puts the farmer at the mercy of cartel or government dominated buying. True, this is only with respect to the surplus oil production but this is one of the most dominant factors in determining U.S. prices for oil and in turn for oilseeds. This is always true for a surplus exporting nation.

“The other possibility is that the grower will be entirely dependent on the price support program. I am assuming of course that oilseed prices will continue to be supported above the world market level for oils and fats. This will be true if soybean supports continue at levels which are in proper relationship to other price supported crops. This latter alternative would attempt to support all edible oils and oilseeds impounding large quantities of soybeans under loan.

“That is one reason why U.S. government domestic and export policies as carried out through the Department of Agriculture and the Commodity Credit Corp. are of primary importance to you as growers. These policies also affect processors, manufacturers of products, consumers, exporters, customers abroad and probably the most important the American livestock, dairy and poultry producers.

“Nobody Consulted: A recent example of the way in which government policies affect our whole industry and

related industries was the decision to offer CCC soybeans for export at less than the price for domestic crushing. This policy—entirely a new policy for soybeans—was inaugurated without any prior consultation of any official nature with the affected segments of the industry. From the growers’ viewpoint, it can have far reaching effects and none of them good. To the extent that CCC sells for export now, precisely that much less export demand will be in the market place when your new crop begins to move.

“Even more important is the precedent involved. After all, the small quantity of 1954 crop soybeans involved is not too important in and of itself. If freely offered for domestic as well as export, it could easily have been absorbed with a minimum of market effect. As it is, buyers abroad, not being required to compete with U.S. crushers, name bargain prices. I was in Europe when this announcement was made. The unanimous reaction was in essence, ‘We can now and in the future buy soybeans cheaper from CCC.’

“Future policies could be inherently just as disruptive to growers, processors and others. We should work together to see that they are not. It is a simple fact that the major problem is one of disposing of surplus oil production. And that this could be solved on a longtime basis and with more regard to all parts of the industry by better means than the policy the government is drifting into for oilseeds. This new policy is going to be quite a shock to soybean growers who have been accustomed to selling their soybeans for prices well above support levels.

“Let’s look at the 1955 oilseed price support programs as announced by the Department of Agriculture on Mar. 16 to June 22. It puts the crusher and producer of soybeans in an untenable position.

“The March 16 and subsequent announcement of June 2 says the effect on price support activity is expected for cottonseed because of a ‘better balance between the consumption and production’ of oilseeds. Further, that the reduced levels of support provide less incentive for planting soybeans. What a different picture we have today when the official Department estimates of production are available. A record soybean crop of 420 million bushels. Cotton oil production of about 1.6 billion pounds, crude. Total edible supply larger than even the last year’s record.

“Policy by Guess: The government’s price support policy for soybeans and cottonseed seems to have been determined largely on the guess that cottonseed would sell above support levels. Even though this belief has been shared by some in the trade, it is inherently wrong for the government to make such far reaching decisions upon its assumption of market prices prevailing a year ahead.

“The people who suffer for bad government decisions are processors and others in industry who, however capable they may be of judging supply and demand factors, cannot foresee possible actions or lack of actions by the government which becomes the most dominant factor in the market place

with prices below or about the support level.

“Back when the 1955 support programs were being developed some of us urged the Department to adopt a different policy. Our proposal was based upon what we honestly believe to be best for the government and for all segments of the oils and fats industries. We proposed that the CCC implement its oilseed programs with an agreement to buy oil. We suggested that it buy soybean and/or cottonseed oil from processors who in turn agreed to pay support price or more for soybeans and cottonseed. Had this been done, the millions of bushels of soybeans already sold all would have brought you at least the full support price.

“I want to emphasize again it is quite obvious that this would not have an effect on the margin of profit for processors as such, but it would make it possible for processors to pay full support price for your soybeans and you could market them freely and in an orderly fashion. That is what we want. The proposal that CCC buy oil is no cure-all for the soybean processing industry, but it has obvious advantages for all of us. They include the following and I hope you will keep in mind that these reasons are based on a longtime view and not for a single crop year:” (Continued). Address: Chairman of the Board, Honeymead Products Co., Mankato, Minnesota.

317. Andreas, Dwayne O. 1955. The world fats and oils situation... and its effect on U.S. soybeans (Continued—Document part II). *Soybean Digest*. Sept. p. 25-26, 29.

• **Summary:** (Continued): “1—The surplus is obviously in the form of oil, not meal. Most tradesmen agree that this country could absorb the meal from not only 400 million bushels of soybeans, but within the next few years, 500 to 600 million bushels, providing it is marketed at a reasonable price.

“On the other hand if CCC should cause high domestic prices of soy meal by impounding soybeans you are apt to lose some more of your other customers to urea.

“Edible fat consumption in the United States is inelastic, one of the most inelastic items in the whole U.S. economy. Experts can predict to a fraction of a pound per capita how much edible fats will be consumed in this country regardless of price. Thus a floor price under vegetable oil does not mean any apparent change in the total domestic consumption of fats.

“2—It is a double-edged weapon, tending to increase the price of beans, and decrease the price of meal. Both edges favor the farmer whose interest CCC is supposed to represent and protect. CCC is best able to cope with the problem of cartel buying, government buying, and the needs of underdeveloped nations.

“3—Oil buying is by far the cheapest method of operation to CCC. Crude soybean oil can be stored and shipped more cheaply than soybeans. It does not have to be refined for storage as does cotton oil. The industry can and will store it for nominal charges on a quality guaranteed basis. If CCC

does encourage the marketing of soybeans at prices above the loan congested storage facilities will be relieved.

“4—Let us use simple arithmetic. If CCC puts a floor on edible oil at say 2 cents a pound over what it might otherwise sell for in the domestic market, it could take over the surplus of possibly 500 million pounds. If it sold this oil at a loss of 2 cents a pound which today seems to be a reasonable estimate, it would lose \$10 million. This operation would, however, raise the entire edible fats market for the U.S. farmer by 2 cents a pound—that is 2 cents a pound on 10½ billion pounds of edible fats production or an increase in farm income of over \$200 million.

“5—Oil buying by CCC at a proper level would permit soybeans to be marketed at prices equal to or likely above the loan level. This would restore the function of price to its proper place in our industry. Soybeans and meal could fluctuate freely according to supply and demand. Similarly cottonseed would flow freely into the market and the resultant enhancement in the price of lard would be a boon to hog producers now harassed by low prices. This would tend to get the government out of our business to the maximum extent possible.

“6—Last and perhaps most important of all is the outlook for future years. It is evident that soybean production in the United States can and should be further increased. It is a natural crop to replace other crops, the acreage of which will be further decreased. Soybean meal consumption can be expanded. Edible oils consumption can expand only in line with population increases. All of which adds up to one conclusion. The simplest and best way to handle an oil surplus is to handle it as oil.

“After outlining some of the favorable points for the proposal to CCC to buy oil at fixed levels, it is in order to give you the objections to such a program as I understand them and with some comments as to the validity of the objections.

“It has been argued that an oil purchase program would result in increased crushing in the early part of the season because of more favorable crushing margins. It is claimed that meal would then be cheap but would skyrocket later in the year when crushing decreased. First, in the past, when government operations have held oil at 12 to 13 cents per pound, processors’ margins have not widened. The enhanced value of oil has been passed right on to the grower in the soybean price. That is an indisputable fact.

“But even more important, meal storage is available everywhere. At processing plants, warehouses, feed mills, and on farms. And there are adequate futures markets. When meal prices get too low purchases for future delivery are made by buyers and by speculators. This natural action in normal market channels results in a carrying charge for meal and it is stored until needed, or else the processor delays crushing. It happens automatically—and is the normal way of doing business. I for one am confident that buyers

are perfectly capable of scheduling purchases of these requirements in any given year.

“Does it make sense to you that the spot meal market would be so glutted that meal would be too cheap and at the same time crushing margins would be excessive? Certainly not!

“Umbrella for Lard: Another objection advanced is that by supporting vegetable oils the government will be holding an umbrella for lard marketing so that lard might tend to take the place of vegetable shortening and margarine as a cooking fat. I regard this objection as not valid for the simple and obvious reason that irrespective of whether the government does or does not buy oil the lard as always will be consumed. It is a byproduct that finds its way rather quickly into consumption channels in either case, that is, with or without a vegetable oil price support. It is a fact, of course, that vegetable oil buying would tend to enhance the value of lard and from the CCC viewpoint this must be considered a plus factor.

“Furthermore, let’s face it, in either case the government will be impounding the same amount of oil. It is only a question of whether they own it as oil, or own it as beans, thereby dominating the bean and meal markets as well.

“Another school of thought simply says ‘It’s easy to export the soybeans instead.’ Let’s use more arithmetic. If CCC were to export the estimated 250,000 tons of fat in the form of soybeans, it would find itself in the extraordinary position of shipping 1,250,000 tons of soybean meal as beans to European livestock producers at prices far cheaper than the American farmer would be required to pay. Thus CCC would be engaging in the ridiculous operation of cornering the meal market against the very people it is supposed to be protecting, the American livestock producers, thereby raising the already high costs of producing milk, butter, eggs, and meat in the U.S.

“Furthermore, with CCC soybeans available at bargain prices you will lose the legitimate market for soybeans built up in Europe over a period of many years. Naturally they will buy CCC bargain counter beans and ignore the free market supplies. This will result in accumulation under the loan of the free market supplies, which Europe otherwise would have bought. This further complicates the problem. Eventually it would result in a complete two price system. CCC would take the loss not only on the small quantity of surplus oil, but on the corresponding meal portion as well, and on the entire 50 to 75 million bushels of otherwise normal soybean exports.

“The most serious concern to me and others in industry has been the apparent lack of an overall analysis of the impending situation by government, growers and industry collectively. Both industry and government have considered the oilseed price support problems on more a piecemeal expediency basis rather than on an overall longtime basis. Make no mistake—price supports are here to stay, whether we

like it or not. And price support programs should be devised on a basis which will give greatest freedom in the market place, cause the least interference with normal commerce, and at the same time effectively support prices to growers at reasonable levels. Impounding vast quantities of bulky raw materials under loan is proven to be a clumsy way to operate. On the other hand, the proposal for CCC to buy crude soybean oil seems to me to meet these criteria far better than presently announced programs and better than any other proposals we have heard. By entering the oil market they will automatically take themselves out of the soybean and soybean meal markets where their interference with the function of price is infinitely more troublesome. If there are other and better plans, I assure you the National Soybean Processors Association will consider them” (Continued). Address: Chairman of the Board, Honeyamead Products Co., Mankato, Minnesota.

318. Andreas, Dwayne O. 1955. The world fats and oils situation... and its effect on U.S. soybeans (Continued—Document part III). *Soybean Digest*. Sept. p. 25-26, 29.

• **Summary:** (Continued): “Questions to Consider: In considering the pros and cons of this entire situation you might ask the following questions:

“1—How much will the impounding of vast quantities of soybeans mean in the loss of your meal markets?

“2—How will such an accumulation of soybeans coupled with the two price system affect your soybean markets prices?

“3—Will not large loan impoundings of soybeans adversely affect both oil and meal markets whereas the oil program could only bear on future oil prices?

“Now I would like to sum up my impressions of the impending situation on soybean growers and crushers. To effectively support prices, large quantities of soybeans must be impounded under CCC loans and eventually go into CCC inventories. If not this year, then next year or the year after. It’s simply inevitable so long as wheat and corn and cotton acreage reductions continue to make land available for soybeans.

“What will such a policy mean in loss of meal markets? When meal consumption is lost for a period, that particular lost consumption is never regained. You know soybeans have been a most satisfactory crop. It is well known that your Association does not look with favor on growing soybeans for government held inventories but wants them to move into consumption through normal trade channels. If you want to further these views, the way to do it is to get behind the oil program.

“The frightening possibility is that the government by mishandling its operations even though with the best of intentions gets more and more into our business—yours of producing and marketing soybeans, ours of crushing and merchandising oil and meal. This is a drastic threat to both

producers and processors. I think the threat is so real and so great that producers and processors must unite in self defense even though it may require a great deal of effort and large sums of money.

“I extend to you, without qualification, the promise of the processors’ cooperation looking to mutually satisfactory solutions of the problems which we face.”

A small portrait photo shows Dwayne Andreas. Address: Chairman of the Board, Honeymead Products Co., Mankato, Minnesota.

319. National Soybean Processors Association. 1955. Year book, 1955-1956 (Association year). Chicago, Illinois. 48 p.

• **Summary:** On the cover (but not the title page) is written: “Year Book and Trading Rules, 1955-1956.” Contents: Constitution and by-laws and code of ethics. Officers, directors and committees for 1955-56. Membership of the National Soybean Processors Association. Trading rules on soybean oil meal. Appendix to trading rules on soybean oil meal: Official methods of analysis (moisture, protein, oil, crude fiber {only method numbers listed}, sampling of soybean oil meal). Trading rules on soybean oil: Tentative refined oil specifications. Appendix to trading rules on soybean oil: Uniform sales contract, standard specifications for crude soybean oil for technical uses, grading soybean oil for color (N.S.P.A. tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses; soap stock, acidulated soap stock and tank bottoms (only method numbers listed).

The section titled “Officers, directors, and committees” (p. 12-15) states: President: R.G. Houghtlin. V.P., Chairman Executive Committee: Dwight L. Dannen. Secretary: E.A. Cayce. Treasurer: H.A. Abbott. Executive Committee: Dwight L. Dannen, Chairman, D.O. Andreas, H.A. Abbott, R.G. Golseth (term ending Sept. 1956). E.A. Cayce, A.C. Hoehne, R.G. Houghtlin, W.E. Huge (term ending Sept. 1957).

Board of Directors (Term expiring Sept. 1956): E.A. Cayce, Jasper Giovanna, Willard C. Lighter, M.D. McVay, Ralph S. Moore, Clark Yager. Term expiring Sept. 1957: D.O. Andreas, Earl J. Brubaker, Dwight L. Dannen, R.B. Jude, W.H. Knap, Glenn Pogeler. Term expiring Sept. 1958: S.D. Andrews, Jr., S.E. Cramer, A.C. Hoehne, W.E. Huge, Donald C. Ogg, J.J. Quinlan.

Standing committees: For each committee, the names of all members (with the chairman designated), with the company and company address of each are given—Traffic and transportation. Technical. Soybean grades and contracts. Oil trading rules. Meal trading rules. Crop improvement council. Soybean research council. Uniform rules and standards for soybean oil meal. Safety and insurance. Lecithin. Regional: Ohio and East; Illinois, Indiana, Kentucky, Wisconsin and Northwestern Missouri; Iowa, Minnesota, Nebraska,

South Dakota; Kansas, and Western Missouri; Southeastern Missouri and the Mississippi River Delta Sections.

The following organizations, and individuals are members of NSPA: Albers Milling Co., Los Angeles, California (W.P. Kyle). Allied Mills, Inc., Board of Trade Bldg., Chicago, Illinois; Peoria, Illinois; Taylorville, Illinois; Omaha, Nebraska. Archer-Daniels-Midland Co., Box 839, Minneapolis 2, Minnesota; Mankato, Minnesota; Decatur, Illinois; Baldwin Oil Mill, Inc., Foley, Alabama (W.H. Sessions). Belzoni Oil Works, Belzoni, Mississippi (Irby Turner). Big 4 Co-op. Processing Assn., Sheldon, Iowa (Chas. W. Hanson). Boone Valley Co-op. Processing Assn., Eagle Grove, Iowa (Edward Olson). Borden’s Soy Processing Co., New York 17, New York (E.J. Brubaker); Waterloo, Iowa; Chicago 4, Illinois (James R. Pentis); Kankakee, Illinois. Buckeye Cotton Oil Co. (The), Cincinnati 1, Ohio (W.H. Knapp, R.B. Williams); Little Rock, Arkansas; Wilson, Arkansas; Louisville, Kentucky; Greenwood, Mississippi; New Madrid, Missouri; Raleigh, North Carolina; Memphis, Tennessee. Cargill, Inc., Minneapolis 15, Minnesota (M.D. McVay, Jay Haymaker); Chicago 3, Illinois (W.B. Saunders); Cedar Rapids, Iowa (C.W. Bohlander); Fort Dodge, Iowa (W.J. Wheeler); Washington, Iowa (Hugo Lensch); Philadelphia, Pennsylvania (R.F. Hubbard). Central Iowa Bean Mill, Gladbrook, Iowa (Paul H. Klinefelter). Central Soya Co., Inc., Fort Wayne 2, Indiana (W.E. Huge); Gibson City, Illinois (Newell Wright); Decatur, Indiana (T.H. Alwein); Marion, Ohio (W.E. Mann); Chattanooga, Tennessee (R.W. Fay). Checkerboard Soybean Co., Decatur 30, Illinois (R.E. Baer). Colchester Processing Co., E. St. Louis, Illinois (E.L. McKee). Consumer’s Soybean Mills, Inc., Minneapolis 15, Minnesota (Riley W. Lewis). Dannen Grain and Milling Co., St. Joseph 1, Missouri (Dwight L. Dannen). Delphos Grain and Soya Products Co., Delphos, Ohio (Floyd E. Hiegel). Delta Cotton Oil and Fertilizer Co., Jackson, Mississippi (Alfred Jenkins). Drackett Co. (The), Cincinnati 32, Ohio (Roger Drackett). Farmers Cooperative Assn., Ralston, Iowa (Karl Nolin). Farmers Cooperative Co., Dike, Iowa (C.M. Gregory). Fremont Cake and Meal Co., Fremont, Nebraska (Harry E. Wiysel). Funk Bros. Seed Co., Bloomington, Illinois (H.A. Abbott). Galesburg Soy Products Co., Galesburg, Illinois (Max Albert). General Mills, Inc., Chem. Div., Minneapolis 1, Minnesota (Sewal D. Andrews, Jr.); Belmond, Iowa (Walter B. Hotvet); Rossford, Ohio (Glenn W. Martin). Glidden Co. (The), Chicago 39, Illinois (Willard C. Lighter). Gooch Milling & Elevator Co., Lincoln 1, Nebraska (M.R. Eighmy). Haynes Milling Co., Inc., Portland, Indiana (Clarence E. Peters). Holland Pioneer Mills, Ohio City, Ohio (G.A. Holland). Honeymead Products Co., Mankato, Minnesota (D.O. Andreas, L.W. Andreas); Huegely Elevator Co., Nashville, Illinois (J.W. Huegely). Illinois Soy Products, Springfield, Illinois (Jasper Giovanna, Eric Nadel). Iowa Milling Co., Cedar Rapids, Iowa (Joe Sinaiko, Bob Scroggs). Iowa Soy Co., Redfield,

Iowa (Donald C. Ogg). Ipava Farmers Processing Co., Ipava, Illinois (Phil. Snedeker). Kansas Soya Products Co. (The), Emporia, Kansas (Elmer L. Buster). Lauhoff Soya Co., Danville, Illinois (R.G. Golseth). Marshall Mills Inc., Marshalltown, Iowa (J.I. Johnson). McKee Feed & Grain Co., Muscatine, Iowa (L.R. McKee). Mid-States Fats and Oils Corp., Peru, Indiana (Oren P. Cochran); Indianapolis, Indiana (Paul J. Sicanoff). Minnesota Linseed Oil Co., Minneapolis 21, Minnesota (R.J. Lindquist, Jr.). Mississippi Cottonseed Prod. Co., Jackson, Mississippi (H.E. Covington). Muscatine Processing Corp., Muscatine, Iowa (G.A. Kent). North Iowa Cooperative Processing Association, Mason City, Iowa (Glenn Pogeler). Ohio Valley Soybean Co-op, Henderson, Kentucky (A.I. Reisz). Owensboro Grain Co., Owensboro, Kentucky (William M. O'Bryan). Pacific Vegetable Oil Corp., San Francisco 7, California (B.T. Rocca, Jr.). Pillsbury Mills, Inc., Clinton, Iowa (Clark Yager, D.B. Long, E.A. Blasing). Planters Manufacturing Co., Clarksdale, Mississippi (A.K. Shaifer). Quaker Oats Co. (The), Chicago 54, Illinois (K.N. Tilden). Quincy Soybean Products Co., Quincy, Illinois (Irving Rosen, Norman Rosen). Ralston Purina Co., St. Louis 2, Missouri (Donald B. Walker); Kansas City, Missouri (F.G. Franze); Bloomington, Illinois (D.D. Rowland); Lafayette, Indiana (Ralph Guenther); Iowa Falls, Iowa (H.N. Johnson). Riverside Oil Mill, Marks, Mississippi (William King Self). Sisketon Cotton Oil Mill, Inc., Sisketon, Missouri (P.B. Bartmess). Sioux Soya Mills, Div. of Sioux Industries, Inc., Sioux City 2, Iowa (John W. Zipoy). Southern Cotton Oil Co. (The), Goldsboro, North Carolina (W.V. Westmoreland); Tarboro, North Carolina (W.A. Moore). Southland Cotton Oil Co., Div. of Anderson Clayton Co., Paris, Texas (James R. Gill). Soy-Rich Products, Inc., Wichita, Kansas (Ralph S. Moore). Spencer Kellogg and Sons, Inc., Buffalo 5, New York (Robert B. Jude); Chicago, Illinois; Decatur, Illinois; Des Moines 6, Iowa; Bellevue, Ohio; El Centro, California. Swift & Co., Union Stock Yards, Chicago 9, Illinois (S.E. Cramer). Tri-County Co-op Soybean Assn., Dawson, Minnesota (J.C. Givens). Wells (Ralph) & Co., Monmouth, Illinois (Ralph Wells). West Bend Elevator Co., West Bend, Iowa (R.W. Jurgens). West Tennessee Soya Mill, Inc., Tiptonville, Tennessee (Peter Frederickson).

Associate Members: American Feed Stores Home Organization (The), Minneapolis, Minnesota. Armour & Co., Chicago 9, Illinois (John H. Noble). Best Foods, Inc. (The), New York 17, NY. Capital City Products Co., Columbus 16, Ohio. Clinton Foods Inc., Clinton, Iowa. Cooperative Mills Inc., Baltimore 30, Maryland. Cox (Chas. M.) Co., Boston, Massachusetts. Humco Co. (The), Memphis 1, Tennessee. Kraft Foods Co., Chicago, Illinois. Lever Bros Co., New York 22, New York. Procter & Gamble Co., Cincinnati 1, Ohio. Spartan Grain & Mill Co., Inc., Spartanburgh, South Carolina. Tuckers (Mrs.) Products, Div. of Anderson Clayton Co., Sherman, Texas. Wilson & Co., Inc., Chicago, Illinois.

Address: 3818 Board of Trade Building, Chicago 4, Illinois.

320. *Soybean Digest*. 1955. Soybean Digest is 15 years old. Nov. p. 8-9. See also Dec. 1955, p. 7.

• **Summary:** The *Soybean Digest* is 15 years old this month. The first issue appeared in November 1940.

“Fifteen years ago this past August the American Soybean Association decided to establish an official monthly publication at its annual convention at Dearborn, Michigan. One purpose was to publish the proceedings of Association conventions.

“But some Association leaders foresaw a much larger role for the Digest. They thought it could become the voice of an entire industry. We believe it has.

“This magazine was born in the early days of World War II when a hungry world was beginning to cry for fats and proteins—and offering the comparatively new soybean crop a challenge and an opportunity. And it was pushing the American Soybean Association into broader fields.

“In 1940 the nation had already produced a 90-million-bushel soybean crop, and was soon to produce a 100-million-bushel crop. By the war’s end the annual crop was almost 200 million bushels.

“Some men thought the soybean would slip back to a place of minor importance as soon as the war was over. Instead, the really tremendous growth of the crop and industry was about to begin. The 1955 crop of soybeans is almost double the 200 million bushels of 1946, and nobody now believes we have reached the peak!

“There is good evidence that the fact that the soybean has now reached an unchallenged position as the leading producer of the nation’s vegetable fats and proteins has been due to the leadership within the Association and the industry. It could have been otherwise.

“The Soybean Digest is proud to have been a part of this growth.

“Plastic Fords were creating a sensation when the Digest was founded. (Editor Strayer was soon to observe soberly that plastics were consuming less than ½% [= half of 1%] of the soybean crop.)

“The Digest carried an article the first year on the use of soy flour by the German fighting forces—Hitler’s secret weapon. Hitler’s legions have long since descended into dust. But soy flour is an even better food fortifier now than it was in 1940.

“Indiana was starting a soybean yield contest, one of the best and first. Illinois University’s G.L. Jordan was predicting a 90¢ average price for 1940-crop soybeans.

“The Ogden and Chief soybean varieties were announced.

“Some of the first year’s headlines are reproduced on this month’s front cover.

“Growth of the Soybean Digest during its first 15 years is well shown by the accompanying pictures of the increasing

staff.

“The Digest was only 16 pages in size the first year. Since, there have been 72 pages in some regular issues, and up to 132 pages in convention issues.

“The magazine has received heart-warming support over the years. A surprising number of first advertisers are still with us, as shown in the accompanying list. One, Seedburo Equipment Co., has carried its message in each issue of the Digest ever published.

“We do not have a similar list of the early readers who are still with us. Their number also might be a surprise.

“We value equally the subscribers and advertisers who have joined us in recent years. We are deeply grateful to all—oldtimers and newcomers. Without them there could not be a Soybean Digest.”

A sidebar shows: “First Year Advertisers Still with the Soybean Digest:

“Ralston Purina Co.  
 “Urbana Laboratories  
 “Central Soya Co.  
 “Nitragin Co.  
 “Archer-Daniels-Midland Co.  
 “Glidden Co.  
 “Spencer Kellogg & Sons, Inc.  
 “J.I. Case Co.  
 “Seedburo Equipment Co.  
 “National Association of Margarine Manufacturers  
 “Agricultural Laboratories  
 “V.D. Anderson Co.  
 “A.E. Staley Manufacturing Co.  
 “Albert Dickinson Co.  
 “Quincy Soybean Products Co.  
 “Iowa Milling Co.  
 “Skelly Oil Co.  
 “French Oil Mill Machinery Co.  
 “Dannen Mills, Inc.  
 “Allied Mills, Inc.  
 “John Deere & Co.  
 “Allis-Chalmers Manufacturing Co.  
 “William H. Banks Warehouses, Inc.”

A large red graph, from 1925 to 1955, across the top of page 9 shows: “Rapid as was the growth of the Soybean crop before the Digest was founded, it has been much more rapid since.” However there was a basic problem with this graph. A correction, published in the Dec. 1955 issue (p. 7) stated: “It should have looked like this!” Below that was the correct graph with this caption:

“This is how the graph showing the growth of the soybean crop before and after the founding of the Soybean Digest on page 9 of the November issue should have appeared. The graph line was turned upside down and made it appear that there had been little expansion since 1940 and that production had leveled out since 1947. Gremlins sometimes creep into the best regulated printshops! Above,

you see the graph as it should be with the big expansion in the soybean crop coming in the past 15 years.”

Photos (p. 8) show: Geo. M. Strayer, editor and founder. G.G. McIlroy [Ohio], former president of the American Soybean Assoc. [ASA] with a letter he wrote on 14 Nov. 1940 that was sent out to members of ASA with the first issue of *Soybean Digest*.

Along the bottom of page 9 is a section titled “Growth of the Staff,” with small portrait photos of the following men and a caption for each:

“Kent Pellett—became managing editor in 1942. R.E. Hutchison—became an advertising representative in 1942. E.E. Yeck—became an advertising representative in 1942. Porter M. Hedge—became Washington, DC, correspondent in 1944. George McCulley—became business manager in 1946. D.C. Cobie—became director of circulation in 1952. John Hendrickson—became an advertising representative in 1942.”

321. Hayward, J.W. 1956. Soybean oil meal: Current developments in its use in formula feeds. *Feedstuffs* 28(6):26, 28, 32, 34-36, 58, 60, 62-63. Feb. 11.

• **Summary:** Longtime outlook for soybean oil meal appears bright, due to recognition of protein feed deficits for present farm population. Address: Director of Nutritional Research, Archer Daniels Midland Co., Minneapolis.

322. Hansen, Louis I. Assignor to Archer-Daniels-Midland Company (Minneapolis, Minnesota; a corporation of Delaware). 1956. Lacquer plasticizer. *U.S. Patent 2,754,306*. July 10. 5 p. Application filed 9 July 1953. [4 ref]

• **Summary:** Discusses plasticizers for nitro cellulose lacquers. Address: Minneapolis, Minnesota.

323. **Product Name:** Lecithin (Named R-Lecin Soybean Lecithin by 1959).

**Manufacturer’s Name:** Archer-Daniels-Midland Co.

**Manufacturer’s Address:** 700 Investors Building, Minneapolis 2, Minnesota.

**Date of Introduction:** 1956.

**New Product–Documentation:** Soybean Blue Book. 1956. p. 96. Ad in Soybean Blue Book. 1959. p. 95. Address is now 735 Investors building. Product is now called R-Lecin. Still listed in 1976.

324. Chen, Philip S.; Chen, Helen D. 1956. Soybeans for health, longevity, and economy. South Lancaster, Massachusetts: The Chemical Elements. xii + 241 p. Illust. Index. 21 cm. 2nd ed. Jan., 1962, 242 p. [24 ref]

• **Summary:** A comprehensive review of the subject. Contents: Preface, by the author (South Lancaster, Massachusetts, July 1956). Foreword, by Geo. M. Strayer, Vice-President and Secretary-Treasurer, American Soybean Association. Introduction. Part I: Nutritive value of the soybean. 1. Protein (incl. Dr. Wolfgang Tiling of Hamburg,

Germany; Dr. Harry Miller). 2. Fat (incl. phosphatides, sterols and hormones). 3. Carbohydrates and caloric value. 4. Minerals. 5. Vitamins. 6. Soybeans and world population. 7. Soybeans and disease (incl. Dr. Wolfgang Tiling of Germany).

Part II: Soy products. 8. Soybean oil: Composition and properties, processing and refining, reversion, uses, phosphatides, margarine, mellorine (vegetable frozen dessert). 9. Soybean oil meal: Heat treatment, Gelsoy, Multi-purpose Food. 10. Soy flour: Uses, soy bread vs. enriched white bread. 11. Soy milk. 12. Soy cheese (or soybean curd, “aptly described by the Chinese as ‘the meat without bones’”—incl. pressed tofu sheets and yuba). 13. Soy sauce: Preparation of kojis, brine fermentation, production yields, microorganisms are available. 14. Soybean sprouts.

Part III: Soybean culture and preservation. 15. Soybean culture: Two types of soybeans (commercial field vs. edible or vegetable varieties), inoculation, fertilizer, cultivation, harvest. 16. Preservation of soybeans: Shelling, canning, freezing, dehydration, harvesting dry mature soybeans.

Part IV: Recipes. 17. Soybeans and soybean pulp: Green or fresh soybeans, dry soybeans, soybean pulp (“prepared by pressing cooked soybeans through a coarse sieve or by grinding them in a food grinder”), recipes (incl. Soyburger, Scalloped green soybeans, and Roasted soybeans—dry roasted or deep-fried (p. 151). Describes how to make wheat gluten at home and praises monosodium glutamate for its ability to improve the flavor of recipes—though its use is called for only in the recipe for Soyburger). 18. Soy flour: Breads, cakes, cookies, pies, soups, other recipes (A recipe for Wafers, p. 180, calls for “½ cup roasted soybeans, finely chopped”).

19. Soy grits and soy flakes. 20. Soy milk. 21. Soy cheese. 22. Soybean sprouts.

Appendices: A. Soybean utilization (chart). B. Manufacturers and handlers of soy foods (Source: 1956 *Soybean Blue Book*). C. References.

Chapter 1, “Protein,” begins: “The soybean is best known for its high protein content (p. 7). It then discusses the work of Dr. Harry Miller (p. 14-15).

Chapter 15, “Soybean Culture,” describes how to grow soybeans in a garden. Pages 126-27 discuss the two types of soybeans: the commercial field type and the edible vegetable type. Five major differences between the two types are discussed (p. 126). The edible varieties are larger in size, do not yield as heavily (though they yield more heavily than snap beans or lima beans), are more prone to shatter as they near maturity in the field, are superior in flavor, texture, and ease of cooking, and some edible varieties are also superior in the manufacture of soybean flour, soybean milk, roasted beans and other products. Table 31 (p. 130) lists eleven varieties of edible soybeans: Very early—Giant Green. Early—Bansei, Fuji. Midseason—Hokkaido, Jogun, Willomi. Late: Illington, Imperial, Funk Delicious, Emperor, Higan. Commercial—Illini.

Chapter 16, “Preservation of Soybeans,” describes how to preserve “green soybeans” by canning, freezing, and dehydration.

Photos show: (1) A sack of Lincoln soybeans (facing p. 1). (2) Soybean plants, showing pods and leaves (p. 3 and 4). (3) A beam balance with a small amount of soy flour balancing many animal products. “The protein value of soy flour: 1 lb. of soy flour contains protein values equal to 2 lbs. beef, or 34 eggs, or 6 quarts milk.” Source: Health and Character Education Institute (p. 6). A similar photo (p. 24) states: “1 lb of soy flour contains food calories equal to 3½ lbs beef, or 3 quarts milk, or 29 eggs. (4) Two views of a child. Left, suffering from marasmus. Right, after six months on a soy milk diet. Courtesy Dr. Wolfgang Tiling (p. 62). (5) A machine at the Northern Utilization Research Branch of USDA treating soybean oil with alkali (p. 72). (6) The distribution of MPF [Multi-Purpose Food] to starving Indian children (p. 91; Courtesy Meals for Millions Foundation). (7) Quaker City No. F4 grinding mill (p. 102; Courtesy Straub Co., 4059 Ridge Ave., Philadelphia, Pennsylvania). (8) Early soy cheese (tofu) production in the United States (p. 108; perhaps at Madison Foods). (9) The Northern Utilization Research Branch, Agricultural Research Service, USDA—shows outside of the huge building (p. 113). (10) How to grow soy sprouts in a glass jar at home (p. 119). (11) Well nodulated soybean roots (p. 129; Courtesy The Nitragin Co.). (12) Baked soybeans in a crock (p. 144). (13) Soy flour used in numerous baked products (p. 159; Courtesy ADM). (14) Griddle cakes [pancakes] made with soy flour brown quickly (p. 173). (15) Soy peanut butter cookies (incl. peanut butter and soy flour; p. 185). (16) Soy grits in a glass jar (p. 198). (17) Freshly-cooked crisp soybean sprouts in a raw vegetable salad (p. 219).

Note 1. The first printing of this book (1956) was dedicated “To Li Yu Ying and William J. Morse, *The Soybean Champions of the Eastern and Western Hemispheres*,” but by the second printing (April 1957) the dedication had changed “To William J. Morse and Harry W. Miller, *The Soybean and Soy Milk Champions of Our Time*.”

The publisher of this third printing was unable to sell all the books printed, so Chen apparently arranged for a company named “Outdoor Pictures” (Box 1326, Escondido, California) to sell them. On the title page, Outdoor Pictures pasted their name and address over that of “The Chemical Elements.”

Note 2. According to the *National Union Catalog*, Philip Stanley Chen was born in 1903. The back cover states that he was born in China and is now a naturalized U.S. citizen. He is a graduate of Emmanuel Missionary College [in Berrien Springs, Michigan] and Michigan State University. Before writing this, his first book on diet, health, or soybeans, he wrote several books on chemistry: (1) *The Chloro Derivatives of m-cresol*. 1933. Easton, Pennsylvania: Mack Printing Co. 7 p. (Abstract of his PhD thesis, Michigan

State College of Agriculture and Applied Science); (2) *The Chemical Elements, Rev. ed.* 1948. South Lancaster, Massachusetts: Chemical Elements (fold chart). (3) 500 Syntan Patent Abstracts, 1911-1950. 1950. South Lancaster, Massachusetts: Chemical Elements. 125 leaves. (4) Syntans and Newer Methods of Tanning. 1950. South Lancaster, Massachusetts: Chemical Elements. 128 p.

In 1962 Chen wrote *A New Look at God*, published by Chemical Elements (288 p.). Address: 1. Prof. of Chemistry, Atlantic Union College, South Lancaster, Massachusetts; 2. National Science Foundation Fellow, Cornell Univ.

325. *Soybean Digest*. 1957. Soybean market programs under way in Spain, Italy. March. p. 20-21.

• **Summary:** The editor's introduction reads: "Population is increasing and living standards are rising but the hand-produced olive crop is shrinking in these two countries. A mixed feed industry is in its infancy. Here is an opportunity for the U.S. soybean industry to develop permanent markets for its products."

"Howard L. Roach, president of the Soybean Council of America, Inc., left Plainfield, Iowa, on Feb. 26 for Spain and Italy. There he will complete arrangements begun last fall for soybean market development projects which it is hoped will result in greatly expanded markets for U.S. soybean products in those two countries. He was accompanied by Mrs. Roach.

"Roach has gone abroad to finish negotiations with Spanish trade groups, and with the Italian Association of Oil Industry, Fats, Soap and Related Products, and the Italian National Association of Producers of Livestock Feeds for their cooperation in the projects.

"Ground work for the two projects was completed by Roach while in Europe last fall. He plans to open offices for the market development work in Madrid and Rome in the next few months.

"Before the Council president explained, the project agreement for Spain between the Council and the Foreign Agricultural Service of the U.S. Department of Agriculture was signed. The agreements provide for the expenditure of approximately \$120,000 for market promotional work in each country within the period of a year. Of this amount, \$70,000 in each case will come from governmental P.L. 480 funds, and about \$50,000 from the Council and Spanish and Italian trade groups.

"Prospects seem good for a permanently broader market for U.S. soybean oil in Spain and Italy, and also for a growing market for U.S. soybean oil meal.

"Both countries are longtime heavy consumers of olive oil, which their people produce and which they have a taste for. But recent heavy freezes have damaged the olive groves in both countries and olive oil production is down. Olive trees are also subject to recurrent drouths and production is cyclical.

"At the same time the populations of both Spain and

Italy are on the increase and the demand for fats and oils is expanding, so it is felt that both countries will of necessity continue to import vegetable oils in increasing quantities. The imported oil can just as well be U.S. soybean oil if we can learn to adapt it to Italian and Spanish usage.

"Since the average per capita consumption of all fats and oils in Spain and Italy is well below the levels of most European countries, it is possible that well-executed promotional programs might greatly increase Spanish and Italian oil consumption.

"Also, olives are produced by hand labor and the cost of production is high. As the wage level rises in the two countries—it is happening in Spain now—olive oil will become less and less competitive price-wise with U.S. soybean oil.

"The mixed formula feed industry in Italy is relatively new and in early stages of development. As the industry develops increasing interest in the usage of U.S. soybean oil meal is expected.

"The Soybean Council will participate in trade fairs at Bari, Palermo and Verona, Italy; Cologne, Germany; and Barcelona, Spain. At these fairs, the place of American soybean oil meal in livestock feeding will be emphasized.

"J.W. Hayward, director of nutrition, Archer-Daniels-Midland Co., Minneapolis, Minnesota, is representing the Council, as a livestock nutritionist at the Verona Trade Fair March 10-19. Activities to be carried on by the Council and cooperating trade groups in Spain and Italy under the marketing project will include:

"1—Market research and analysis to determine per capita consumption of fats and oils in Spain and Italy and possible markets for soybean oil and soybean oil meal.

"2—Study of government regulations and policies pertaining to purchase and sale of soybean products.

"3—Educational work with trade groups and consumers.

"4—Services of a skilled American oil technician for the vegetable oil industries, consumer groups and others in Spain and Italy in connection with packaging, utilization and merchandising problems.

"5—Promotional programs at the consumer level to explain advantages and limitations of bland vegetable oils including soybean oil, and promotional work to increase per capita consumption of fats and oils.

"6—Assistance in developing livestock feed formulas that will include soybean oil meal as the basic protein ingredient.

"7—Assistance in formulation of programs to raise the nutritional levels of the Spanish and Italian peoples, with special emphasis on soybean products.

8—Visits to the United States of leaders of the Spanish and Italian oilseed industries for tours of inspection of facilities for production, handling, processing and refining of soybean oil as well as the manufacture of livestock feeds.

"Roach will arrange for selected Spanish and Italian oilseed industry leaders to visit the United States to observe our methods and to acquaint them with industry people here.

“The Council aims to have similar marketing projects under way in Austria, Greece and Germany in cooperation with Foreign Agricultural Service before the end of the year.

“Mr. and Mrs. Roach expect to be abroad a little over a month.”

A portrait photo shows Howard Roach wearing a bow tie.

326. Roach, Howard L. 1957. Big attendance at Verona [Italy, International Trade Fair]. *Soybean Digest*. April. p. 20.  
 • **Summary:** “Special to the Soybean Digest from Verona.

“Farmers from Italy, Yugoslavia [Yugoslavia], France, Austria as well as farmers from many other nations crowded the grounds of the International Fair at Verona, Italy, the second week of March to break all attendance records which have stood for over half a century.

“The first 3 days of this fair saw spirited competition in the various classes of the horse show. Horses, still providing most of the farm power in this rich Po valley of northern Italy, had only to look across the fence, however, to see their finish. There, in the greatest tractor show of Europe, were exhibited over 60 different makes of farm tractors with several models of each make on display.

“Mechanization is coming to European agriculture as it has arrived in America. Everything from small garden tractors to giant track-type machines were on display. Diesel motors power most of the units in this country where gasoline is 85¢ per-gallon.

“Germany, France, Switzerland, Holland and other nations had exhibits showing products and produce from their nations but the outstanding exhibit was the one presented by the United States. This exhibit occupied an entire building and showed the progress made in the poultry industry during the past few years in quick growth and feed utilization.

“The exhibit was both educational and interesting. The opening day over 40,000 persons passed through the doors.

“Murals decorating the inside of the building were large photographs showing American farms, soybean fields, grain elevators, soybean processing plants, and feed manufacturing plants.

“Near the office were visible incubators, placed at various heights to accommodate adults and children, in which chicks were constantly emerging from the shell. One middle-aged Italian was heard to say, ‘I knew something like that happened but it always happened under the hen and I couldn’t see just what did take place.’

“Eggs had been pre-set so that each day of the fair this emergence of the chicks from the eggs could be witnessed by the crowds. Nearby were pens of day-old chicks, a pen of broilers, hens in batteries laying eggs, pens of turkeys and at the exit were two freezer counters filled with frozen poultry and poultry products even to the American TV dinner.

“On top of the counters were displays of American

canned poultry while behind on shelves were infrared broilers with 2- and 3-pound broilers turning on their spits.

“Central in the display were samples of feed ingredients with emphasis on 50% soybean oil meal as the protein base for a successful poultry operation. A revolving display of feed grains used by American feed manufacturers along with soybean oil meal attracted the attention of the visitors.

“Many of the visitors had questions which were answered by Kenneth K. Krogh, Foreign Agricultural Service in charge of Trade Fairs; Chas. J. Witt, Foreign Agricultural Service in charge of field operations of Trade Fairs; A.W. Brant, USDA, Beltsville, Maryland, poultry specialist; James W. Hayward, nutritionist representing the Soybean Council of America; and Howard L. Roach, president of the Council.

“This group of Americans was busy from 9 in the morning till closing time at 7 in the evening answering questions and extolling 50% soybean meal as the basis for successful feeding of poultry, hogs and cattle. Many friendships were formed that should prove advantageous to American agriculture.

“Fairs such as this one at Verona, Italy, are made possible by the foreign currency generated through the sale of surplus commodities through P.L. 480. Anyone visiting the Verona Agricultural Fair could not help but feel that a good job of advertising was being done for American agriculture, but that a tremendous job of selling international good will was being accomplished as well.

Photos show: (1) “Soybean Expert, Howard L. Roach, Plainfield, Iowa, president of the Soybean Council of America, explains to farmers at the Verona Fair the importance of soybean oil meal in poultry feeding.

(2) Italian farmer studies sacks of feed concentrate available from the United States at International Agricultural Trade Fair in Verona.

(3) Dr. J.W. Hayward (right), director of nutritional research, Archer-Daniels-Midland Co., answers questions of an Italian poultryman at Verona Fair. Dr. Hayward was a staff consultant attached to the U.S. livestock feed exhibit. The lady is an interpreter. Address: President, Soybean Council of America.

327. *Soybean Digest*. 1957. Honeyamead expands further: To add deodorization system to world’s largest solvent plant. April. p. 30-31.

• **Summary:** Honeyamead Products Co. of Cedar Rapids, Iowa, was in the livestock feed business in the 1930s. The company built its first oil extraction plant when faced with the problem of maintaining a continuous flow and economical supply of soybean meal. Honeyamead installed a solvent extraction plant, unlike the typical plant of that day, which used comparatively inefficient expellers. The company was able to place itself in a more competitive position in the feed business by providing its own soybean oil meal for use in feed mixtures and by marketing the oil.

The Honeymead plants were sold when World War II broke out. Honeymead remained a liquid corporation throughout the war years. When the principals returned from service, like many temporarily interrupted businessmen, they turned to the task of picking up the pieces. Honeymead management bought a crushing plant at Mankato, Minnesota in 1948. The plant had 2 expellers and the firm added 3 more.

At Mankato, Honeymead soon added a 150 ton per day solvent extraction plant and “very shortly thereafter junked most of the equipment purchased only a few years before.

In 1953 Honeymead “awarded a contract to the Blaw-Knox Co. of Pittsburgh [Pennsylvania] for design, engineering, and construction of what was at the time the world’s largest solvent extraction plant—a 500-ton-per-day Rotocel.”

“In 1955 Honeymead installed a continuous refining system for degumming soybean oil.”

In late 1956 Honeymead completed installation of another Blaw-Knox Rotocel, capacity 1,200 tons per day, again the world’s largest. Contains a detailed description of the Rotocel solvent process used at Mankato. Honeymead now produces 2 types of soy flour which are used mainly as an industrial adhesive, a 44% and a 50% protein meal, and a line of extruded pellets for livestock feed.

Photos show: (1) Lowell Andreas (president), James Maslon (vice president of production), W.B. Cox (in charge of specialty sales), and Thayer Mullan (in charge of soybean sales). (2) A workman at the base of the base of the 1,200 ton Rotocel with miscella tank in the background. (3) A tumbling, counter-current air cooler.

328. Archer-Daniels-Midland Co. 1957. Lecithin—Is it a miracle substance? *Soybean Digest*. May. p. 32. Reprinted from Archer-Daniels-Midland Co.’s Archer.

• **Summary:** “Reprinted from Archer-Daniels-Midland Co.’s Archer.

“For approximately 20 years, Archer-Daniels-Midland Co. has been manufacturing and marketing the product which probably comes closest to being a ‘wonder drug’ and the world’s most versatile commodity.

“Actually, lecithin is not a drug but a natural substance found in almost all living cells, especially nerve cells and the brain. It is also present in eggs, nuts, grains, seeds and dairy products. Lecithin forms about 2¼% of the dry material of an egg yolk, which provides the richest source of the material in the human diet.

“Lecithin belongs to a group of substances chemists call phosphatides and which are described as occupying a position between fatty oils and proteins. The lecithin molecule has a Jekyll and Hyde personality. One part is attracted to water while the other part is attracted to fats. This mixture gives lecithin colloidal and emulsifying properties that make it useful in industries ranging from confections to

cosmetics.

“As far as the individual is concerned, lecithin holds wonderful possibilities as a ‘health-giving’ substance. A variety of human ills has been alleviated or even cured after several weeks or months of taking lecithin regularly.

“For Heart Disease: A complex, phosphorized, fatty material, lecithin contains a substance called choline which is regarded as a vitamin. A Toronto doctor proved that when choline is present in the body in sufficient amounts, it removes excess fats from the liver. Ordinarily, there is not enough choline in the human diet to make the liver function at its best. Choline in lecithin may help in the proper disposition of body fats.

“Lecithin also contains inositol which exists in all body cells. Since the material is an emulsifier it is believed that it aids the blood in carrying fats. In younger people blood returns to normal about 3 hours after a meal of fats. Experiments have shown that older people retain fats in the blood for a longer period of time, thus providing more time and a better chance for fats to deposit in the tissues. Such deposits, called cholesterol, cause hardening of the arteries and high blood pressure.

“When cholesterol forms on the inside of the main arteries leading from the heart, they can partly close off the blood stream and cause coronary thrombosis. Should a piece of the deposit break loose and enter the bloodstream, it may reach the heart and cause death. It is thought that lecithin emulsifies excess cholesterol and reduces extra deposits to normal. If high blood pressure is due to cholesterol deposits, some authorities believe lecithin will cause blood pressure to return to normal.

“In some cases lecithin has raised low blood pressure to normal, improved or helped in curing cases of arthritis and rheumatism and even helped early, mild cases of diabetes. When used as a dietary supplement, lecithin has aided in alleviating malnutrition and in building resistance to disease. Very possibly the human diet has changed so much that people today do not get the amount of lecithin required for the metabolism of food. Perhaps, after the age of 50, we need an extra boost.

“Lecithin affects what we eat, what we wear and many of the articles and products we use every day. In manufacturing chocolate, lecithin reduces cost and at the same time improves the quality of the chocolate. Lecithin causes fat in chocolate to spread evenly, thus reducing the amount of cocoa butter necessary in production.

“Added to margarine, lecithin improves baking and frying qualities of the final product and makes a more uniform distribution of water throughout the fat. It permits margarine to froth and brown during frying like actual butter. One of the first uses of lecithin was its addition to margarine. When added to butter in larger amounts, lecithin improves butter flavor. It was known that butter actually contained lecithin, but the product was destroyed in processing

margarine. Egg yolk was first added to margarine to give it the qualities of butter. Now lecithin does the same job more efficiently and economically.

“In bakery goods such as cake, cookies and packaged biscuits, the addition of lecithin increases baking volume and improves texture. Lecithinized bakery goods require less fat, and freshness is preserved far beyond the normal period because fat oxidizes less rapidly.

“Unlimited in Industry: Industrially, the uses of lecithin are unlimited. Added to paints and printing inks, it improves dispersion of pigments in vehicles and retards pigment settling.

“Among other things, lecithin increases the efficiency of soap because of its emulsifying powers; serves as a softener and facilitates mixing in the production of rubber products; produces more even dyeing, greater color brilliancy and improved flexibility in dyeing fabrics.

“Soybean oil contains from 2 to 3% lecithin. The ingredient interferes with many commercial uses of the oil and is therefore removed by a steam process treatment. At first lecithin was considered a waste product, but many uses were subsequently discovered. It became inexpensive and available in quantity through commercial development.

“Crude soybean oil undergoes a de-gumming process and the resulting lecithin is a golden brown, viscous fluid.”

329. *Soybean Digest*. 1957. ADM buys Drackett protein business. May. p. 41.

• **Summary:** “Archer-Daniels-Midland Co., Minneapolis, Minnesota, has purchased from The Drackett Co., Cincinnati, their isolated soy protein business and all facilities located at Evendale, Ohio.

“Announcement of the transaction, which will be effective July 1, was made by the two companies. The purchase price was not disclosed. Acquisition of the isolated soy protein facilities will be another step in the diversification of ADM’s operations, according to A.C. Hoehne, vice president and manager of ADM’s soybean division.

“R.G. Brierley, ADM vice president, will be responsible for operation of this new business under Hoehne’s direction. The plant employs about 200 persons. Brierley said no organizational changes are contemplated. Isolated proteins, on which ADM has done extensive research, are versatile ingredients of many industrial and food products. They are produced from soybeans by a series of chemical extraction and purification processes. Largest present use of the proteins is an adhesive in the manufacture of high grade printing papers, while another major market is as an emulsion stabilizer in water base paints. The proteins also have numerous applications in foods such as soups, icings, meringues and baby foods.

“ADM has two other plants in Ohio, a chemical manufacturing facility at Ashtabula, and a foundry products

plant at Cleveland. The company is one of the largest processors of agricultural commodities, ranking as a major manufacturer of vegetable oils, flour, chemicals, resins, industrial cereals, and plasticizers with 147 plants and elevators in the United States and manufacturing operations in several foreign countries.”

330. Archer-Daniels Midland. 1957. “and what is that, Gramps?” (Ad). *Soybean Digest*. Aug. p. 43.

• **Summary:** A full-page illustration shows a little girl standing in a field of soybeans pointing her finger at one of the rows. Her grandfather, smoking a corn cob pipe, is kneeling behind her. ADM says that it “is proud as punch to have worked hand-in-hand with your Gramps to build this prospering soybean industry.” A logo shows an archer pulling a longbow. “Other ADM products: Linseed, soybean and marine oils, paint vehicles, synthetic and natural resins, vinyl plasticizers, fatty acids and alcohols, hydrogenated glycerides, sperm oil, foundry binders, industrial cereals, vegetable proteins, wheat flour, dehydrated alfalfa, livestock and poultry feeds.” Address: 700 Investors Building, Minneapolis, Minnesota.

331. Roach, Howard L. 1957. Soybean Council of America, its aims and its achievements. *Soybean Digest*. Sept. p. 26-27.

• **Summary:** “The aims of the Soybean Council of America are to bring together growers, handlers, processors and manufacturers, with common interests in soybeans or soybean products, in order that the soybean crop may continue to expand under free economy.

“Now let us look at what has just been said, ‘To bring together growers, handlers, processors and manufacturers.’ I am glad to report that this has been partially accomplished. The growers, the processors, many manufacturers and many handlers are now giving wholehearted support to the Soybean Council of America.

“There are some, of course, who have not yet been told the story and others who would rather wait and see how successful this operation will be before pledging their support, but every mail brings new individuals, companies and organizations pledging support to the Soybean Council of America.

“Next, when we say ‘continue to expand,’ we do not know in just what proportion this expansion will continue. Certainly the expansion in the last 25 years has been phenomenal but so too have been phenomenal the many and varied uses found for soybean products.

“With the growing population of the world and of our own United States, it is anybody’s guess as to what the soybean business will be 25 years from today.

“Third, let us look at the last part of the statement of aims of the Soybean Council of America under a free economy. Soybeans have won their place in the agricultural

economy today, not through the incentive of high support prices, but rather through an active merchandising or marketing program. In order to keep expanding we must keep moving our annual soybean crop into consumptive channels, both home and abroad, and always remember that crops are grown to be consumed, not to be stored.

“The Soybean Council of America is embarked on two programs, one having to do with domestic economy at home, and the other with the exportation of soybeans and soybean products to overseas markets.

“Active programs: First, I would like to speak of some of the programs now underway within our own country. The research committee of the Soybean Council is watching carefully and giving support to research that may provide the answer to the great saturated and unsaturated oil controversy that has been given so much publicity. Coordinating of research already being encouraged by the American Soybean Association, the National Soybean Processors Association and private companies among our various land grant colleges and with the U.S. Department of Agriculture and private research institutions, is going forward. Studies are being made as to additional avenues of research that seem desirable, and ways and means of having same instituted are being investigated by the research committee of the Soybean Council.

“Your merchandising committee has been most active. Last winter, Ed M. James, oil consultant, was hired to make studies for the Council of all aspects of the soybean oil industry. His services were made available to the users of soybean oil, both at home and abroad. Food packers such as the sardine people, the tuna fish packers and others have been contacted, offering the services of Mr. James when needed. Many manufacturers of livestock feeds have been contacted and the merchandising committee is considering the advisability of engaging the services of a nutritionist to be of service to this segment of the industry.

“Your committee has also contacted manufacturers of soy food products and is serving as a liaison committee between inquiries originating by the American public for certain soy products.

“The industrial field has not been forgotten. Contact has been made with the National Paint, Varnish and Lacquer Association and many other industrial users of soybean products.

“In other words, the merchandising committee is looking to every avenue where the future of soybean products can be expanded.

“Your education committee has been instrumental in telling the story about the Soybean Council to the various members and to the public. They are also compiling a library of reference material for use both at home and abroad as well as a morgue of pictures that will be available to those people desiring to use pictures of soybeans and their various uses. Only the lack of sufficient staff curtails the activity of the

education committee.

“Less than a year ago, the Soybean Council of America wrote a contract with Foreign Agricultural Service to do market development work in certain areas of the world, principally Western Europe. I would now like to report on some of the developments of the Soybean Council’s activities in overseas places.

“Your president made a survey of Spain, Italy and the United Kingdom in December of 1956 and while in these places made plans for further market development activity. Returning to Europe in February of this year, I spent much time in contacting business organizations and government officials in Spain. An office was opened in Madrid and placed under the supervision of Mr. Javier de Salas, a Spanish national who has been working in the past for the American Embassy. Mr. de Salas is advisor to the newly formed extension director for agriculture and is an author, writing articles for one of the leading Spanish agricultural magazines.

“Your president has become well acquainted with Mr. Navarro, head of the olive oil syndicate, and a working arrangement has been perfected between the Soybean Council of America and the olive oil syndicate. Parenthetically, I would like to state that the olive oil syndicate is probably the most powerful of all Spanish agricultural organizations, being semi-official as far as government is concerned.

“Dr. Fred R. Marti, who was assistant agricultural attache for Spain, was hired by the Council to head the office for Europe which is located in Rome.

“Miss Audrey M. Capes was engaged as administrative assistant and the Rome office is now functioning under the direction of Miss Capes.

“Plans were made for a display of American soy products with the emphasis on soybean oil at the Fair in Barcelona which was held June 1 to 20.

“Ed James, oil consultant, arrived in Spain in the month of May and your president and Mr. James spent some time in field trips and interviewing various oil refiners in Spain.

“Barcelona Fair: At the Barcelona Fair, arrangements were made with four Spanish companies that were engaged in the business of making potato chips, to make potato chips, frying same in pure soybean oil. These potato chips were given away at the Fair to all visitors and were received with great enthusiasm.

“After the Fair, request was made by companies producing potato chips, for permission to use soybean oil exclusively in the manufacture of potato chips in the future. The Council also provided soybean oil as the medium for cooking fried chicken at the exhibit sponsored by the poultry people.

“Many important contacts were made at the Barcelona Fair, with important business concerns that can use and will use quantities of soybean oil.

“Also contact was made with many people and companies interested in importing and using soybean meal as a source of protein for livestock and poultry feeds.

“Your president attended an Agricultural Fair at Verona, Italy on March 10 to March 19. Dr. James W. Hayward of Archer-Daniels-Midland Co., was also present to serve as nutritional advisor at this Fair. Many important contacts were made at the Verona Fair that can lead to extremely good markets for soybean meal.

“The Council also cooperated with Foreign Agricultural Service in a Fair at Palermo, Sicily, May 24 to June 10. Dr. K.N. Wright of the A.E. Staley Co., was the nutritionist furnished by the industry through the Soybean Council to the Palermo Fair. Dr. Wright succeeded in making additional important contacts in south Italy.

“The Soybean Council is participating in an Agricultural Fair at Salonika, Greece, beginning Sept. 1 and running through Sept. 12. Dr. Edward L. Stevenson of the University of Arkansas will represent the Council at the Salonika Fair and serve as nutritionist there.

“A Fine Foods Fair will take place in Cologne, Germany, Sept. 28 to Oct. 6. Your president has agreed with Foreign Agricultural Service to be present at this Fair to represent soybean interests there. Much time and effort has been spent in planning for this Fair and materials are now aboard ship and on the way to Germany.

“I want to take this opportunity to thank all industry people for the splendid cooperation given the Soybean Council as requests have been made for services and materials in carrying out the Fair operations this past year. The Council had but to ask and everyone pitched in to see that all road blocks were cleared and it indeed has been a pleasure for your president to work with such a group of cooperative people.

“I could go into great detail regarding ramifications of the activities as plans are being laid and dreams realized both domestically and in Europe. This report to you today is like trying to make a report on a horse race that has not yet reached the quarter post. I learned a long time ago that you can't spit in the ocean and create a tidal wave but I do sincerely believe that the program of the Soybean Council is sound and will have a great effect on the marketing of soybeans and soybean products. It can do one more thing. It can serve as a pattern for other commodity groups to come to the realization that crops are produced to be consumed, not stored.

“Surely we have an ambitious pro- gram. Given a staff and time, we can make good on the old saying, ‘The impossible takes just a little longer.’”

A portrait photo shows Howard Roach. Address: President, Soybean Council of America, Plainfield, Iowa.

332. Honeymead Products Co. 1957. This we believe (Ad). *Soybean Digest*. Dec. p. 5.

• **Summary:** Near the top of this full-page black-and-white ad is a large outline map of the United States. From a large star at Mankato, Minnesota, radiate lines with drops of edible or industrial oils, or sacks of oil meal and pellets at the end of each. A bold broken line shows three routes of transport from the plant: (1) Down the Minnesota and Mississippi rivers to New Orleans, Louisiana. (2) Through the Great Lakes and out the St. Lawrence Seaway and River. (3) Through the Great Lakes, then the Erie Canal and down the Hudson River to New York City.

The text reads: “It is our purpose continually to maintain a high level of efficiency in soybean processing; to develop new uses and new markets for soybean products; to employ the most practical and economical methods of transportation. Through the combination of these efforts we strive to narrow the spread between what a farmer receives for his products and what he pays for his feeds. We believe this is our challenge. It is a responsibility we accept.”

“Soybean processors and refiners serving agriculture and industry.” Smaller drawings show a rail tank car, rail hopper car, tanker truck, and barge. Address: Mankato, Minnesota.

333. Archer-Daniels-Midland Co. 1957. Soy flour: Complement to modern eating. 700 Investors Building, Minneapolis 2, Minnesota. Summarized in *Soybean Digest*, July 1957, p. 28. \* Address: Minneapolis, Minnesota.

334. Hayward, J.W. 1958. Soybean oil meal in livestock and poultry feeds. I. A world traveler's viewpoint. *Soybean Digest*. Jan. p. 14-16.

• **Summary:** “The two following articles are from speeches of Dr. Hayward and Dr. Hanson before the American Soybean Association in Minneapolis” [Minnesota].

“U.S. soybean oil meal, as a whole, is the best of its kind in the world. Many foreign countries are definitely in need of our soya for use in formulating adequate feeds for their productive' animals, especially poultry, calves and swine. My travels have proved to me very convincingly that there is a dire need for high quality protein for animals and humans in most foreign countries. Soya protein from the U.S.A., as 50% meal or as edible soy flour, is the answer.

“We are producing a surplus of soybean oil meal here in the States for the best interest of the soybean grower and processor. This is all based on the premise that government price supports will continue. If the production of soybeans continues at recent rates, we are now geared to increase the production of soybean oil meal in the future at a much faster pace than the experts estimate our population will increase.

“I think we should do a real selling job abroad to create a preference for our high-quality soybean oil meal. I would confine our efforts entirely to 50% dehulled soybean oil meal. At such distances this dehulled meal is significantly cheaper per unit of protein than a full fiber meal. It looks like

we should try to export about 1 million tons of our soybean oil meal during the crop year 1957-58, and increase that to some 2 million tons within the next several years if soybean production continues to increase at its present rate. Don't forget that soy flour has a definite place, also, in the food picture abroad."

Tables show: (1) Comparison of soybean oil meal (SBOM) with all other protein concentrates, U.S.A. In the period 1930-40 on average, SBOM accounted for 13% of all U.S. protein concentrates, but in 1956-57 this figure had climbed to 54%.

(2) World production of protein crops, 1954-55 (1,000 metric tons; excluding the USSR). The world's top 3 protein crops were soybeans (19,500 tons), cottonseed (13,700 tons), and peanuts (10,600 tons).

(3) U.S. use of soybeans 1955-56. 74% of the total bushels were crushed.

(4) Essential steps in processing soybean oil meal.

(5) Value of protein fed to chicks.

(6) Effect of processing on nutritive value of herring meal.

(7) Basic ingredients of a 22% broiler starter.

(8) Ingredients used in a typical modern broiler starter.

(9) Animal nutrition research council broiler ration (60.7% corn, 28.0% SBOM; 50% protein).

A photo shows Sr. J.W. Hayward, in a coat and hat, standing next to bags of SBOM at the U.S. exhibit at the Verona (Italy) Trade Fair last year where he was a technical assistant. Address: Director of Nutrition, Archer-Daniels-Midland Co.

335. *Soybean Digest*. 1958. The soybean: Miracle crop of the twentieth century. Jan. p. 1A-16A. Insert.

• **Summary:** See next page. Contents: Introduction and history. The meaning (to America, the American consumer, the consumer, to labor). The growers. The processor. Two maps showing economic importance of soybeans by state. The export market. The government. The future.

Contains many unnumbered tables, graphs, illustrations, and photos.

This 16-page insert is "A *Soybean Digest* Extra.

Prepared and published as a public service by the Andreas Foundation of Mankato, Minnesota, and the Lauhoff Foundation, Box 571, Danville, Illinois."

336. *Soybean Digest*. 1958. ADM protein plant at Evendale [Ohio]. Feb. p. 22.

• **Summary:** The plant where ADM produces isolated soy proteins is another step in the Minneapolis [Minnesota] company's diversification program. The isolates are ingredients of many industrial and food products. Their largest present use is in adhesives employed in the manufacture of high grade printing papers. Another major market is water base paint, where the soy proteins are used

as emulsion stabilizers. The Evendale plant, which ADM purchased from The Drackett Co. of Cincinnati, employs about 200 persons. An aerial photo shows the plant.

337. Honeymead Products Co. 1958. Low in fibre. High in protein. Honeymead Hi-Energy Soybean Oil Meal (Ad). *Soybean Digest*. April. p. 2.

• **Summary:** In the middle of this full-page black, white and orange-brown ad is a photo of a conical pile of this Hi-Energy meal. The company sells the following soybean products: 44% soybean oil meal. Lecithinated soybean oil meal. Hi-Energy soybean oil meal. Soybean pellets. Soybean mill feed. Soy flour. "Soybean processors and refiners serving agriculture and industry." Address: Mankato, Minnesota. Phone: Mankato 791 TWX 541.

338. *Soybean Digest*. 1958. Soybean utilization conference at Peoria. Aug. p. 19.

• **Summary:** "The 1958 soybean utilization conference was held recently at the Peoria laboratories of the Northern Utilization Research and Development Division. The conference is an annual meeting of staffs of this division of the Agricultural Research Service, USDA, and the Soybean Research Council of the National Soybean Processors Association.

"Thirty-five attended this year. The Council had held its annual business meeting in Peoria prior to the conference with the division.

"Value of the exchange of information made possible by the meeting was mentioned by W.D. Maclay, director of the Utilization Division, as he welcomed the group to the laboratories. J.C. Cowan, chief of the Oilseed Crops Laboratory of the division, outlined the program in oilseed research, pointing out that emphasis is on industrial utilization of vegetable oils but that work is continuing on flavor stability and meal.

"W.W. Cravens, McMillen Feed Mills representative, speaking about research that is needed, suggested that more be done on the minor components of soybean meal. J.W. Cole, Glidden Co. representative, discussed research needed on soybean oil.

"Others on the program and subjects they discussed were: C.H. VanEtten, amino acids in soybean proteins; F.B. Weakley, the alleged antithiamin factor; C.D. Evans, research in edible soybean oil; L.E. Gast, plasticizer studies; and H.J. Dutton, labeling fatty acids."

A group photo shows those "attending the soybean utilization conference, all standing, left to right: First / Front Row—F.H. Hafner, General Mills, Inc., newly elected chairman of the Soybean Research Council; H.L. Wilcke, Ralston Purina Co., retiring chairman; R.L. Terrill, Spencer Kellogg & Sons, Inc.; W.D. Maclay, director Northern Utilization Research and Development Division [NU]; J.C. Cowan, NU; C.D. Evans, NU; and C.H. VanEtten, NU.

# THE **SOYBEAN**

Miracle crop of the twentieth century

**A SOYBEAN DIGEST EXTRA**

“Second Row—J.W. Cole, Glidden Co.; W.N. McMillen, A.E. Staley Mfg. Co.; W.W. Cravens, McMillen Feed Mills; J.W. Hayward, Archer-Daniels-Midland Co.; K.F. Mattil, Swift & Co.; A.R. Baldwin, Cargill, Inc.; and L.E. Gast, NU.

“Third / Back Row—M. J. Brinegar, Allied Mills; C.M. Wilson, Borden Co.; A.K. Smith, NU; R.W. Jackson, NU; R.G. Houghtlin, president, National Soybean Processors Association; H.J. Dutton, NU; F.B. Weakley, NU; E.L. Griffin, NU; H.M. Teeter, NU; and P.D. Aines, Buckeye Cellulose Corp.”

**339. Product Name:** Do-Soy (Enzyme-Active Full-Fat Soya Flour).

**Manufacturer’s Name:** British Arkady Co. Ltd., Arkady Soya Mills.

**Manufacturer’s Address:** Old Trafford, Manchester 16, England.

**Date of Introduction:** 1958 September.

**Ingredients:** Soybeans.

**Wt/Vol., Packaging, Price:** 25 kg multi-ply sacks with a protective moisture-proof layer.

**How Stored:** Shelf stable.

**New Product—Documentation:** Dawes, R. 1958. “Why not use soya flour in breadmaking?” *Arkady Review* (Manchester, England) 35(3):45-46. Sept. Discusses the benefits of “Do-Soy” at length.

340. Dawes, R. 1958. Why not use soya flour in breadmaking? *Arkady Review* (Manchester, England) 35(3):45-46. Sept. [Eng]

• **Summary:** Commercial products used in breadmaking and made by British Arkady include Do-Soy (soy flour, sold in bags) and Super Arkady. Arkady has published a pamphlet titled “The value of Do-Soy in Breadmaking,” which advises: “1. Use Do-Soy at the rate of 2 lbs. per sack.” 2. It has good food value, with natural oil and lecithin. 3. It carries extra moisture in the dough, and in the bread as well. “The extra protein in the Do-Soy holds twice its own weight of water, whereas the bulk of white flour is starch and this only holds its own weight of water. 4. The dough is more mellow and moulds up better, consequently a better texture results. 5. The colour of the bread is affected outside and in. On the outside the crust has a richer bloom and inside the crumb is usually bleached white by the enzyme action of the Do-Soy. (6) The bread keeps better.

It doesn’t “cost anything to put Do-Soy in, as the extra yield of bread covers the cost of the Do-Soy itself.”

Note: By June 1916 “Arkady Yeast Food,” a product protected by a U.S. patent, was on the market in the United States; it consisted mostly of mineral salts. Ward Baking Co. used Arkady Yeast Food in their bread (Jenkins, W.C. 1916. “The Bread We Eat.” *National Magazine* (The). 44(3):467+, June). *National Magazine*. Address: England.

341. Marcello, Dominic. 1958. Activities of Soybean Council in Italy. *Soybean Digest*. Sept. p. 51-52.

• **Summary:** “I will try to review for you the market development activities of the Soybean Council in Italy.

“Our first task was to ascertain whether there is a market for soybean products in Italy. As a result of studies and other research activities it was learned that there is a sizable market in Italy for U.S. soybean oil meal, oil and other soybean products. However, there are various competing sources of protein that we must be prepared to face. Among them are Russia and Yugoslavia in addition to western suppliers. Energetic efforts must be made to meet this competition both in price and quality.

“It was found that the production of olive oil in Italy is not sufficient to meet domestic needs in an average year and in years of short crop it falls far short of meeting those needs. Italian requirements of vegetable oils are now approximately 500,000 metric tons per year. These requirements are met with 250,000 metric tons of domestic olive oil and 50,000 tons of oil produced from domestic seeds which in reality are byproducts from other commodities. This production is stable except for these regulations changed to accomplish this purpose. All this work is being done through Spanish trade groups as only through recognizing their interests and reconciling them with ours can we carry out our work.

“I think that we can be sure that Spain is an increasing market for U.S. soybean oil and other soybean products. The Spanish economy is in a period of transition. We are having growing pains, but I believe that in the future our foreign currency position will be strengthened and we will be able to buy more and more soybean products that we need so badly.

“... small increases that may be gained if improvements are attained in the extraction process. Therefore an average of 200,000 tons of vegetable oil which could be soybean oil must be procured from other sources.

“It was further found that there is great interest in expanding the livestock economy of Italy and especially in the development of a poultry industry patterned after that of the United States. Such an industry will require increasing quantities of high-quality protein for economic production, and soybean oil meal in its various forms is the logical source of that protein.

“For many years it has been generally acknowledged that Italy’s oft-declared long-range agricultural policy of shifting from marginal wheat production to livestock and poultry would result in an improvement in Italy’s farm income and relieve the Italian government of a substantial and increasing financial burden of grain subsidies. Although to date no such organized shift has materialized, there has been an increase in livestock production and a substantial increase in broiler production. This was due largely to the acceptance and use of balanced feeds in which soybean oil meal played a great part. Imports of soybean oil meal from the United States have increased significantly from 7,700

metric tons in 1955 to over 46,000 metric tons in 1957, and from reports so far this year there is every indication of a further substantial increase. We expect that with dynamic promotion this figure could reasonably be expected to reach 100,000 tons within the next 2 years

“Shift to Livestock: There is reason to believe that the long-awaited shift from wheat to livestock production may soon begin to take place. Italian government officials are preoccupied about the role Italian agriculture will play in the Common Market Area in the face of keen competition from other member countries. It is felt that because of this urgency the government will now place greater emphasis on the livestock and poultry program. Otherwise, the Italian farmer will lose further ground in supplying the local market with meat, poultry and eggs.

“In any program for expansion of livestock and poultry production, Italy must depend on additional imports of feed grains and especially protein feeds. These programs must be closely followed and encouraged. As they become realities all necessary steps must be taken to assure the filling of the needs, insofar as possible with U.S. products.

“With the approval and consent of FAS [USDA’s Foreign Agricultural Service] and the Soybean Council, we entered into the second phase. We set up an office and employed the necessary staff. Administrative support arrangements were made with the American Embassy and we were in business.

“Emphasis was then put on obtaining Italian group participation in our promotional activities. Exploratory work had indicated that there were two organizations in Italy with whom cooperating agreements were desirable and essential. Federconsorzii (the Italian Federation of Agricultural Consortium), the most important agricultural cooperative in Italy, has representatives and agricultural installations in every province of Italy. This organization produced approximately 30% of all mixed feed produced in Italy in 1957.

“The other is the National Association of Livestock Feed Producers whose 60 members produced approximately 60% of the mixed feed produced in Italy last year. The members of this organization and its affiliates produced over 75% of all the Italian seed oil produced in 1957 as well as 100% of the margarine produced.

“Our sights were set. A program of operations was prepared and approved by the Soybean Council and FAS on April 15, 1958. The program includes the following:

“1—Engage in an information and public relations program which shall include preparation, publication and distribution of a technical handbook relating to soybeans and soybean products and their uses; preparation, publication and distribution of a periodic news bulletin; preparation and distribution of news items, feature and technical articles, photos, films, etc., through appropriate channels; preparation, publication and distribution of pamphlets and leaflets both of

a technical nature and for mass use; arrange and participate in conferences, symposiums and contests; and engage in such other public relations activities as day-to-day operations warrant.

“2—Conduct feed demonstrations by establishing two or more experimental centers for poultry and livestock, as well as tests demonstrating the value of using soybean products for human consumption.

“3—Participate in trade fairs, such as Varese and Bari, and seminars held in conjunction therewith.

“Oil, Feed Teams:

“4—Arrange visits of representatives of the Italian feed and oil industries to the USA.

“5—Preparation, publication and distribution of a digest of Italian laws, regulations and policies affecting the purchase, importation, distribution and use of soybeans and soybean products.

“6—Arrange with a suitable Italian institute or laboratory for conducting tests, investigating and experimenting on the use of soybean products, as well as examining such products which are imported into Italy. Tests will include methods of utilizing soy flour in the manufacture of pasta (macaroni, spaghetti, etc.), bread and biscuits and determining consumer acceptance.

“7—Develop standards and controls of quality, purity and uniformity of soybean products.

“8—Collect and disseminate market news and prices of soybean products.

“The following activities were implemented:

“Agreements were negotiated, drafted and finalized with the two organizations. We now have cooperating with us groups that produce over 90% of the mixed feed, 75% of the vegetable oil and 100% of the margarine. The cost of implementing the program will be equally shared.

“A mixed feed conference was held in cooperation with one of our cooperators (Assalzo). The Council and FAS furnished two technicians, Dr. Damon Catron of Iowa State College and Dr. Max Jeter of the Indiana Farm Bureau Cooperative Association. Papers given by these two technical men were published in several publications.

“We participated in the Varese Fair exhibit. This was also attended by Dr. Jake L. Krider, Dr. Charles A. Denton of Beltsville, Maryland, Prof. Steven King of Purdue University, and William Bridges of the Producers Grain Corp. of Amarillo, Texas.

“Seminars were held in cooperation with Federconsorzii, in which our technicians participated in Milan and Padova.

“We are cooperating with FAS and the Agricultural Attache’s office in the forthcoming Bari Fair exhibit Sept. 6-21. Dr. Krider and Dr. J.W. Hayward of Archer-Daniels-Midland Co. will attend.

“We are making arrangements to conduct feed demonstrations, by establishing in cooperation with our cooperators two experimental centers for poultry and

livestock.

“We have practically ready for publication a pamphlet containing a digest of Italian laws, regulations and policies affecting the purchase, importation, distribution and use of soybeans and soybean products.

“Flour has been supplied to Dr. Visco at the Research Laboratories at the University of Rome for test purposes.

“Prices and quotations are obtained daily on soybeans and soybean products and posted on a large quotation board on the wall of our office entrance hall, where it can be viewed by Italian trade groups and other interested persons.

“There is much more that I could add but time does not permit. In conclusion, I would like to say that the mixed-feed business in Italy is a vibrating, pulsating industry and that there is an ever-increasing demand for U.S. soybean products. We are also ready, willing and able to fill the oil-requirement gap.”

A photo shows Dominic Marcello, wearing a dark coat and tie, seated at a desk.

Note 1. This is the earliest document seen (Aug. 2015) that contains the term “Common Market” or the term “Common Market Area” in connection with soybeans.

Note 2. This is also the earliest document seen (Aug. 2015) that mentions any term related to what eventually became the European Union.

The first step in the federation of Europe began in 1952 with the creation of the European Coal and Steel Community.

The European Union was established by the Treaty of Rome on 1 Jan. 1958 (signed by Belgium, France, Italy, Luxembourg, the Netherlands, and West Germany)

In 1979, the first direct, democratic elections to the European Parliament were held.

The union was further consolidated by the Treaty of Maastricht on 1 Nov. 1993.

In 1999 the monetary union was established and came into full force in 2002. It is currently composed of 19 member states that use the euro as their legal tender. Address: Director General for Italy, Soybean Council of America, Inc., Rome, Italy.

342. *Chemurgic Digest*. 1958. Dwayne O. Andreas accepts presidency of [Chemurgic] Council. Oct. p. 3.

• **Summary:** Cover story. A large portrait photo on the cover of this issue shows Dwayne O. Andreas, chairman of Honeymead Products Co., Mankato, Minnesota.

343. *Decatur Herald and Review (Illinois)*. 1959. Soybeans curiosity 40 years ago in U.S.; A.E. Staley Sr., new crop’s missionary. Decatur industry multiplies two hundredfold since 1922. Jan. 25. p. 74.

• **Summary:** Contains a detailed and largely accurate history of A.E. Staley’s early work with soybeans. “America’s first [sic] commercial soybean processing plant was put in

operation in Decatur on Sept. 30, 1922, by the A.E. Staley Mfg. Co... Rated capacity: 500 bushels a day. The first [soy] beans were bought Sept. 28 from Andrews Grain Co. of Walker—1,547 bushels at 99 3/4 cents. They went to process 2 days later.”

An aerial photo of Decatur, Illinois, shows, in one view, the soybean preparation and extraction plants and terminal elevators of A.E. Staley Mfg. Co., Spencer Kellogg & Sons, Inc., and Archer-Daniels-Midland Co.

344. *Decatur Herald and Review (Illinois)*. 1959. Soybean processing draws national firms; solvent method used, replaces expellers. Oil finds industrial, home uses; meal added to feeds. Jan. 25. p. 76. Sunday.

• **Summary:** “Central Illinois has five soybean processing plants.”

These five plants employ about 1,250 persons and have combined storage space of about 24 million bushels.

The A.E. Staley Mfg. was the first to start a soybean processing plant in 1922. Next came Allied Mills with the purchase of a plant in Taylorville [Illinois, from Funk Brothers] in 1931.

The Staley company completed a new soybean plant in 1937, and in [Aug.] 1938 Spencer Kellogg & Sons “bought the Shellabarger Grain Products Co, plant at Brush College Road and Faries Parkway.”

“In 1939 Archer-Daniels-Midland Co. of Minneapolis opened its plant—a plant which was pioneering the use of solvent extraction to replace the expeller method.”

“Ralston Purina entered the scene in central Illinois by buying the newly built Shellabarger Mills Inc. soybean processing plant and country elevators in 1952. This is now Checkerboard Soybean Co.

“Here is a brief history of each of the central Illinois plants.

A.E. Staley Mfg. Co.: In 1922, Staley was the first soybean processor in the area; it is still the largest. “Much of [the company’s] 11 million bushel terminal elevator is used for receiving, storing, and readying soybeans for processing. Although the plant uses more corn [than soybeans], the nature of the soybean market generally more advanced buying and storage.

“In one two week period last fall, the Staley elevator took in more than 5 million bushels of soybeans.

“The two initial products, soybean meal and crude soybean oil, are further processed and refined to produce a total of 67 different products used in hundreds of food items, feed and industrial purposes.

“Soybean processing operations employ more than 600 men and women in all phases of business.”

Describes the old expeller method and the newer, more efficient solvent extraction process. As a final step, soybean flakes are ground into meal.

“Besides a higher oil yield, the extraction process also

allows more exact control and flexibility in determining the content and properties of the products.

Allied Mills, Taylorville: Dec. 1958 was the biggest month, tonnage wise, for Allied Mills' Taylor plant, according to J.B. DeHaven, manager.

"Allied Mills, with headquarters in Chicago, now operates the Taylorville plant as the company's only soybean processing plant. In 1952 Allied Mills centered its soybean operations at Taylorville.

Allied Mills operated soybean processing plants at Peoria, Illinois; Omaha, Nebraska; and Portsmouth, Virginia—in addition to Taylorville.

"In 1952, also, the centering of operations in central Illinois brought about additions to the Taylorville plant. A 250-ton French extractor was installed, an addition was made to the flake preparation building, and an additional one million bushels storage capacity was added. The Taylorville plant, employs about 60 persons in both the plant and office, has a storage capacity of 1,750,000 bushels, and produces soybean oil, and both 44 per cent protein meal and 50 per cent protein meal.

"Allied Mills, which sells its feeds under the name of Wayne Feeds, is the result of a merger in 1929 of American Milling Co. and McMillan Feed Co. of Fort Wayne, Indiana.

"In 1931, Allied Mills bought Funk Bros. plant in downtown Taylorville. In May 1944, a fire destroyed the plant.

"In August 1944, Allied Mills built a million dollar plant on Route 48, northeast of the city. This plant, De Haven [sic, DeHaven] said, became obsolete and too small in 1954.

"Spencer Kellogg & Sons: The Decatur mill of Spencer Kellogg & Sons Inc., is the largest and most important operation of the company.

"The Decatur plant, which has a storage capacity of five million bushels, was purchased by Spencer Kellogg in 1938. It is one of nine grain-processing centers of the company.

"The company, one of the largest processors of vegetable oil seeds, as started in 1824, when Suplina Kellogg, great-great grandfather of the current president of the company, embarked in the linseed oil business.

"Spencer Kellogg & Sons Inc. was incorporated in 1912, and has been constantly expanding, having recently purchased Beacon Milling Co., Cayuga, New York and Staley Milling Co., Kansas City, Missouri.

"Since the purchase of the mill in 1938 from Shellabarger Grain Products Co., Spencer Kellogg has been engaged in soybean crushing at Decatur. The plant produces crude soybean oil, soybean oil meal and soya flour.

"The meal is used in poultry and livestock feeds. Both industrial and edible flours are produced; the industrial flours for use in adhesives and paper coatings, the edible flours for use in bakery products, meal substitutes and dog foods. The oil is sold for use in edible products such as shortening and margarine, and for use in the protective coating field.

"Processing operations are on a 24-hour per day basis, seven days a week, and the company employs about 200 people from the Decatur area, supporting a substantial yearly payroll in the community

"The company started its soybean activities at Decatur. As the crop itself spread outward, the company expanded to Des Moines, Iowa, Bellevue, Ohio, and more recently to the Minnesota area.

"While this expansion went on, the Decatur operation was constantly increased. The plant continues to be the most important operation of Spencer Kellogg & Sons. The company feels this will continue to be so as it modernizes and adds emphasis to the Decatur plant. The future of its operations seems extremely bright with the continued large Illinois production of soybeans and improved products being developed by the Research Laboratories of the company.

"Products are supplied by the Decatur plant to refineries at Long Beach, California; Chicago, Illinois; and Bellevue, Ohio, which specialize in producing a wide variety of up-graded soybean oil products for the so-called industrial user.

"When Archer-Daniels-Midland Co. began processing soybeans on a large scale 20 years ago, Decatur was the logical location for the company's plant.

"That was in 1939, when ADM erected in Decatur the nation's largest solvent extraction plant. Previously ADM had pioneered in development of the solvent extraction process, now used throughout the soybean industry. Since that time, ADM has doubled the capacity of the Decatur plant, installed a continuous-flow refining unit, added an edible oil refinery and built a plant to produce vinyl plasticizers.

"The addition of a truck dump this month will enable Archer-Daniels-Midland to handle a 50-foot truck every four minutes.

"Since 1939 too, ADM has become one of the nation's three largest processors of soybeans.

"ADM's Decatur operations, headed by Robert S. White, production manager for the company's entire soybean division, now employ 320 persons. ADM also has soybean processing facilities at Minneapolis and Mankato, Minnesota, and Evendale, Ohio.

"Production at the Decatur plant is for both edible and industrial purposes. ADM soybean oils are used as salad and cooking oils, and in the manufacture of margarine and vegetable shortening.

"In the industrial field, soybean oil is used in protective coatings [such as paints], linoleum, foundry core oils, printing inks, synthetic rubbers and plastics. They go [sic, The protein goes] into glues and coatings for fine papers and other products.

"At Decatur, ADM produces 50 per cent soybean oil meal, a high protein supplement widely used by livestock and poultry feeders.

"Soybean processing is only one phase of ADM's

operations. Founded in Minneapolis 57 years ago as a flaxseed crushing firm, the company now is a widely diversified corporation with 156 plants and elevators in 21 states and Canada. The president is John H. Daniels, a grandson of the founder.

“Checkerboard Soybean: Checkerboard Soybean Co. not only operates a soybean processing plant in Decatur, but also operates nine country elevators, both as storage facilities and retail outlets for Purina Chows, the company’s feeds.

“The Decatur soybean processing plant is one of 10 such plants in the United States and Mexico operated by Ralston Purina Co. of St. Louis.

“Checkerboard Soybean processes soybeans primarily as a source of protein for the Purina Chows manufactured by Ralston Purina, according to Russell Baer, vice president and general manager of Checkerboard Soybean.

“The Checkerboard operation involves more than 100 persons in the plants, office and country elevators. Storage capacity for soy beans includes about 600,000 bushels in Decatur and another 600,000 bushels at the country elevators.

“The elevators are located at Warrensburg, Elwin, Pana, Raymond, Craig, Ospur, Dunkel, Westervelt and Ohlman.

“Checkerboard Soybean Co. was formed in May 1, 1952, when Ralston Purina bought the Decatur plant of Shellabarger Mills Inc. which was built in 1950 and completed for operation by the fall of 1951.

“Baer said Ralston Purina in the future will have in operation seven new bulk stations in Illinois to handle expedite bulk shipments of Purina Chows.

“Ralston Purina was founded in 1894 in a river front feed store in St. Louis. The original product was a feed for horses and mules.”

345. Link, W.E.; Hickman, H.M.; Morrissette, R.A. 1959. Gas-liquid chromatography of fatty derivatives. I. Separation of homologous series of a-olefins, n-hydrocarbons, n-nitriles, and n-alcohols. *J. of the American Oil Chemists’ Society* 36(1):20-23. Jan. [8 ref]

• **Summary:** Study includes an alcohol derived from soybean oil. Address: Archer-Daniels-Midland Co., Minneapolis, Minnesota.

346. Archer-Daniels-Midland Co. 1959. Some ADM products from soybeans (Ad). *Soybean Blue Book*. p. 95. • **Summary:** Soybean Blue Book. 1959. p. 95. Photos show plants at Decatur, Illinois; Evendale, Ohio; and Mankato, Minnesota. Seven products are listed: Archer S (salad oil), Soybean oil, Archer 44% soybean oil meal, pea-size, pellets, flakes, Archer 50% low fiber soybean oil meal, Adpro isolated soy proteins, Soybean brew flakes, R-Lecin (soybean lecithin), Soy flour, Bakers Nutrisoy, Daniels’ Supreme, Kaysoy, Nutriwhip, Packers Granular, Soya fatty acids, Admex vinyl plasticizers, Archer Booster feeds, Aroplaz

alkyd resins. Address: Minneapolis, Minnesota.

347. Honeymead Products Co. 1959. This is the farmer who tills the soil that grows the beans so protein rich that are processed into oils and meals to be shipped to markets world-over (Ad). *Soybean Digest*. March. Inside front cover.

• **Summary:** In the middle of this full-page black, white and brown ad is a photo of a farmer driving a tractor whose wheels fit neatly between long, straight rows of soybeans. Honeymead now sells the following soybean products: 44% soybean oil meal. Lecithinated soybean oil meal. Hi-Energy soybean oil meal. Soybean pellets. Soybean mill feed. Soy flour.

“Soybean processors and refiners serving agriculture and industry.” Address: Mankato, Minnesota. Phone: Mankato 7911 TWX 541.

348. Hayward, J.W. 1959. Improved feed ingredient processing. In: Papers Presented at International Animal Feed Symposium. 163+ p. See p. 96-114. Held 4-6 May 1959 in Washington, DC. Sponsored by USDA FAS in cooperation with SCA. [15 ref]

• **Summary:** Contents: Introduction. Soybean oilmeal: Effect of heat. Cottonseed meal. Summary.

“It has been shown that heat, when used at optimum levels in conjunction with properly controlled moisture, time intervals, and other processing variables, may have a beneficial effect on the nutritive value of various protein meals. On the other hand, the improper use of heat during processing can result in a definite deterioration of the protein quality of many of these meals. In addition, improper use of heat can destroy the vitamins, unidentified growth, and reproductive factors, and other desirable nutrients in feed ingredients.

“Granulation (particle size) of one or more of the ingredients in a feed mixture for ruminants can exert a definite effect on the animal and its production...” Address: Director of Nutrition, Archer-Daniels-Midland Co.

349. Honeymead Products Co. 1959. These are the elevators large and tall that protect the beans that farmers grow until they go to the Honeymead plant to be made into valuable oils and meals (Ad). *Soybean Digest*. May. p. 6.

• **Summary:** In the middle of this full-page black-and-white ad is a large photo of Honeymead’s elevators and plant. The company sells the following soybean products: 44% soybean oil meal. Lecithinated soybean oil meal. Hi-Energy soybean oil meal. Soybean pellets. Soybean mill feed. Soy flour.

“Soybean processors and refiners serving agriculture and industry.” Address: Mankato, Minnesota. Phone: Mankato 7911 TWX 541.

350. USDA Foreign Agricultural Service; Soybean Council of America. comp. 1959. Papers presented at [First]

International Animal Feed Symposium. Washington, DC. 165 p. Held 4-6 May 1959 in Washington, DC. Sponsored by USDA FAS in cooperation with SCA. No index. 23 cm. [30+ ref]

• **Summary:** The only article on soybeans is by J.W. Hayward, titled "Improved Feed Ingredient Processing," p. 96-114 (15 ref). Address: Washington, DC.

351. Hafner, Fred H. 1959. Edible soy flour and soy grits. *Soybean Digest*. June. p. 8-10.

• **Summary:** Presented in a question and answer format. What are edible soy flour and grits? (Full fat, defatted, low fat, high fat [made by adding back soy oil or lecithin to defatted], lecithinated). What forms do they come in? What are the factors to be considered in the manufacture of soy flour and grits. What is the composition of the various edible soy products? What is the principle use of edible soy products? What types of products are edible soy products used in? Who manufactures edible soy products in the United States? (ADM, Central Soya, General Mills, Honeyamead Products, Spencer Kellogg & Sons, A.E. Staley Mfg. Co.). Address: Oilseeds Div., General Mills.

352. Wright, Roy E. Assignor to Philadelphia Quartz Company (Berkeley, California). 1959. Water-resistant adhesive compositions. *U.S. Patent* 2,894,847. July 14. 10 p. Application filed 22 April 1955. [12 ref]

• **Summary:** Soy is mentioned 51 times in this patent, soya 38 times (e.g. soya protein, denatured soya protein, soya beans, soya bean flour(s), soya flour, raw soya flour, etc).

"Among the soya bean flours which are satisfactory for use in this invention there may be mentioned the 'IR 300' flour of the Staley Company, 'Prosein' from the Glidden Company, 'Kay soy' from Archer-Daniels-Midland Company and 'Soy size' from Spencer-Kellogg Company, etc. In general the proportion of undenatured and unhydrolyzed isolated protein in such formulations should at least equal the starch and/or the soya flour content of the adhesives in order that they shall retain the characteristic and advantageous properties of my new adhesive."

Claims: "4. The adhesive of claim 1 wherein the composition. contains up to about 10% of soya flour but not substantially more soya flour than protein fraction." Address: Oakland, California.

353. Andreas, Dwayne O. 1959. Consider just one example: [soybean oil]. *Chemurgic Digest*. July. Cover.

• **Summary:** "If soybean oil could be prevented from its tendency to revert undoubtedly a cent and one half could be added to its value. This would be equivalent to 15 cents per bushel or \$75 million added value to the soybean crop. People who know the subject estimate it might cost five million dollars in research to lick this problem. Obviously no single firm could earn enough from this development

to warrant such an investment. But, for farmers as a group, \$75 million return on a \$5 million project is a bonanza." A portrait photo shows Dwayne Andreas. Address: President, The Chemurgic Council.

354. Hayward, J.W. 1959. Improved feed ingredient processing. *Feedstuffs*. Aug. 22. \*  
Address: Director of Nutrition, Archer-Daniels-Midland Co.

355. *Soybean Digest*. 1959. Grits and flakes... from the world of soy: ADM accents marketing in organization plan [sic, plan]. Aug. p. 38.

• **Summary:** "A new form of corporate organization that stresses marketing went into effect July 1 for Archer-Daniels-Midland Co.

"John H. Daniels, ADM president who announced the change, said the company's present 12 operating divisions and two operating departments will be placed in four major groups, each headed by an executive reporting directly to the president.

"Within these—agricultural products, chemical products, specialty products, and international—ADM's more than 1,000 standard products and its foreign operations will be grouped according to the markets they serve.

"The board of directors designated three executive vice presidents to head up the three domestic groups.

"Erwin A. Olson, administrative vice president since 1956, was named executive vice president-agricultural products. Walter G. Andrews, former vice president and manager of the resin and plastics division, was elected executive vice president-chemical products group. Richard G. Brierly, an executive vice president since last November, was appointed executive vice president—specialty products group.

"The directors also named Burton W. Schroeder, former vice president and manager of the chemical products division, to be administrative vice president of ADM.

"A new executive committee composed of Thomas L. Daniels, chairman of the board, John Daniels, Olson, Andrews, Brierley, and Schroeder was elected at the same time. All of the new members are directors of the company.

"Under the new organization, ADM's formula feed, dehydrated alfalfa, linseed and soybean meals, country elevators, flour, grain, and Mexican feed operations will comprise the agricultural products group.

"In the chemical products group will be the linseed and soybean oils, vinyl plasticizers, resins, plastics, chemical products, and Glass Plastics Supply Corp., an ADM subsidiary.

"The specialty products group will include foundry products, industrial cereals, isolated soy proteins, soy flours, flax fibre, bulk storage and handling equipment for feed and chemical plants produced by the equipment department, and ADM Canada Ltd., the company's Canadian subsidiary.

“The international division will supervise the company’s export sales, fats and oil trading, and foreign chemical plants.

“Retirement of Albert C. Hoehne from his positions as a vice president and director, effective Aug. 1, was announced after the directors’ meeting. Hoehne, associated with the oilseed industry since 1922, has been manager of ADM’s soybean division since 1955. Hoehne was named to the ADM executive committee in 1949. He is a member of the market development and merchandising committees of the Soybean Council of America.”

Small portrait photos show Thomas L. Daniels (chairman of the board) and John H. Daniels (president).

356. Formo, M.W.; Peterson, R.V. 1959. Chemurgy: A way of doing business. *Chemurgic Digest*. Dec. p. 6-7.

• **Summary:** ADM treats “soybean oil with hydrogen peroxide to get a new product called epoxidized soybean oil. This is a plasticizer (a softener or flexibilizer) for vinyl resins which are the common plastics in raincoats, automotive upholstery and crash pads, shower curtains, synthetic leather, footwear, basketballs, and many other products. The epoxidized oils have particular value in protecting the products from color changes and brittleness during aging.”

Concerning “soyflour,” the first sales of this product were “largely for adhesive applications, particularly for plywood glues where soyflour is the basis for the adhesive for approximately half our plywood. Similar types of “soyflours” were tried in foods and found lacking in quality.” But today many good soyflours are available for food use, including the ADM Nutrisoy line of soyflours. “Light colored improved Bakers Nutrisoy appears in many bakery products. Low flavor level and light color make it an ideal replacement or supplement for milk.”

ADM is now also producing (on a pilot plant scale) an “edible grade isolated soy protein” with a protein content of 96% or higher. Its “bland taste and pleasing odor will make isolated soybean protein extremely valuable as a high protein nutritional supplement for a wide variety of food items.” Preliminary tests show that this product “neither changes the flavor of food products nor does it impart any undesirable characteristic flavor of its own.”

“In 1949 ADM marketed the nation’s first 50% dehulled soybean oil meal. This higher protein content meal found widespread acceptance in the poultry industry. By giving more latitude for incorporation of feed ingredients, this 50% meal led to the high energy feeds which have resulted in such impressive gains in feed efficiency. Partially as a result of these high energy feeds, the broiler industry has shown spectacular growth since 1950.” Address: Archer-Daniels-Midland Company.

357. **Product Name:** Adpro Isolated Soy Proteins (Industrial) [112, 220, or 410].

**Manufacturer’s Name:** Archer-Daniels-Midland Co.

**Manufacturer’s Address:** 735 Investors Building, Minneapolis 2, Minnesota.

**Date of Introduction:** 1959.

**New Product–Documentation:** Ad in Soybean Blue Book. 1959. p. 95. “Some ADM products from soybeans.” Seventeen products are listed, including “Adpro isolated soy proteins.” Note: In July 1957 ADM purchased The Drackett Co., and their factory for making isolated soy proteins. This marked ADM’s entry into soy isolates. Both of these Adpro products are industrial soy protein isolates. Adpro 220, of high viscosity, is recommended for use in latex paints or as an adhesive. Adpro 410, of low viscosity, is most widely used in high-solids paper coatings and board coatings. Adpro 112 is a medium viscosity material.

358. **Product Name:** Archer S (Salad Oil).

**Manufacturer’s Name:** Archer-Daniels-Midland Co.

**Manufacturer’s Address:** 735 Investors Building, Minneapolis 2, Minnesota.

**Date of Introduction:** 1959.

**New Product–Documentation:** Ad in Soybean Blue Book. 1959. p. 95.

359. Forbes, R.M.; Yohe, Martha. 1960. Zinc requirement and balance studies with the rat. *J. of Nutrition* 70(1):53-57. Jan. [17 ref]

• **Summary:** One of the protein sources used was “C-1 Assay Protein containing 30 ppm zinc (Archer-Daniels Midland Co., Cincinnati [Ohio]).” Address: Div. of Animal Nutrition, Univ. of Illinois, Urbana.

360. *Mankato Free Press (Minnesota)*. 1960. New Honeymead offices (Photo caption). Feb. 26.

• **Summary:** This photo shows Honeymead’s spacious new laboratory, with 5 men at work. The Mankato offices of Honeymead Products Co. were moved recently from their original location on Given St. to the former Denison-Johnson building on Minneopa Road. The company has about 6,000 square feet of executive offices and laboratory space in the new location.

361. American Soybean Association. 1960. Soybean Blue Book. Hudson, Iowa: American Soybean Assoc. 144 p. Advertisers’ index. 22 cm.

• **Summary:** Contents: American Soybean Association. Japanese American Soybean Institute. National Soybean Processors Association. Soybean Council of America. Midsouth Soybean and Grain Shippers Association. Ontario Soya-Bean Growers’ Marketing Board. U.S. Department of Agriculture: Agronomic Research (ARS [Agricultural Research Service]), Disease Research, Entomological Research, Utilization Research and Development (Northern Utilization Division [NRRL], Eastern, Southern, Western), Marketing Research.

18

### WORLD SOYBEAN PRODUCTION

Soybeans: Acreage, yield per acre, and production in specified countries and the world, averages 1935-39 and 1950-54, annual 1957-59 1/

Continent and country	Acreage 2/					Yield per acre					Production					
	Average					Average					Average					
	'35-39 1,000 acres	'50-54 1,000 acres	'57 1,000 acres	'58 1,000 acres	'59 3/ 1,000 acres	'35-39 Bu.	'50-54 Bu.	'57 Bu.	'58 Bu.	'59 3/ Bu.	'35-39 1,000 Bu.	'50-54 1,000 Bu.	'57 1,000 Bu.	'58 1,000 Bu.	'59 3/ 1,000 Bu.	
<b>North America:</b>																
Canada -----4/	10	188	256	263	251	4/21.3	22.4	25.4	25.3	27.2	4/	207	4,131	6,508	6,649	
United States 5/--	3,042	14,747	20,826	23,900	22,428	18.1	20.3	23.2	24.3	24.0	56,167	298,422	483,715	579,713	537,895	
<b>South America:</b>																
Argentina -----	---	2	4	2	---	---	13.7	13.9	14.9	---	---	30	51	22	---	
Brazil -----	4/	157	241	262	289	4/22.1	18.5	17.4	19.1	---	4/	3,471	4,464	4,556	5,512	
<b>Europe:</b>																
Italy -----	6/	2	1	1	---	4/12.1	22.1	27.3	28.1	---	4/	1	34	22	21	---
Yugoslavia -----	5	12	15	20	25	14.9	7.3	19.7	12.6	20.8	71	90	296	254	514	
Other Europe (excl. U.S.S.R.) ----	95	75	55	40	40	---	---	---	---	---	1,065	480	410	215	260	
<b>U.S.S.R.</b> (Europe and Asia)-7/	607	813	---	---	---	---	---	---	---	---	7/	5,805	---	---	---	---
<b>Africa:</b>																
Belgian Congo and Ruanda Urundi ----	---	9	15	15	15	---	7.4	9.9	9.9	9.9	---	69	147	147	147	
Nigeria 8/ -----	---	---	---	---	---	---	---	---	---	---	---	250	538	123	---	
Union of South Africa -----	4/	12	---	---	---	---	6.6	---	---	---	---	76	67	---	---	
<b>Asia:</b>																
Turkey (Europe and Asia)-7/	1	8	15	15	---	7/29.0	12.9	8.9	8.6	---	7/	37	104	136	129	110
China, Mainland--	21,403	28,219	31,480	24,200	25,000	16.7	11.7	10.6	14.9	14.0	358,960	330,000	335,000	360,000	350,000	
Indonesia -----9/	889	1,066	1,297	1,495	1,645	9/10.0	10.2	9.6	10.4	10.3	9/	9,731	10,829	12,457	15,490	17,000
Japan -----	797	1,040	899	856	855	15.6	15.7	18.8	16.8	18.4	12,338	16,521	16,855	14,374	15,708	
Korea, South -----4/10/1,921	625	685	664	---	---	10.0	7.8	8.2	8.5	---	10/17,654	4,835	5,610	5,635	---	
Taiwan -----	17	62	101	108	---	9.0	9.2	12.0	14.2	---	147	576	1,214	1,532	---	
Thailand -----4/	15	54	63	50	---	4/15.4	13.0	16.0	15.9	---	4/	232	700	1,009	797	---
<b>Total excluding "Other Europe", U.S.S.R., China- Mainland and North Korea 11/-----</b>	<b>5,670</b>	<b>18,070</b>	<b>24,620</b>	<b>27,850</b>	<b>26,555</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>87,180</b>	<b>340,790</b>	<b>534,635</b>	<b>630,735</b>	<b>594,120</b>	
<b>Total world 11/-----</b>	<b>29,000</b>	<b>47,880</b>	<b>57,645</b>	<b>53,580</b>	<b>53,085</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>463,718</b>	<b>681,070</b>	<b>879,710</b>	<b>1,000,615</b>	<b>954,045</b>	

1/ Years shown refer to years of harvest. Southern Hemisphere crops which are harvested in the early part of the year are combined with those of the Northern Hemisphere harvested the latter part of the same year. 2/ Figures refer to harvested areas as far as possible. 3/ Preliminary. 4/ Less than 5 years. 5/ Acreage harvested for beans. 6/ Less than 500 acres. 7/ One year only. 8/ Purchases for export. Local consumption is small. 9/ Java and Madura only. 10/ Includes North Korea. 11/ Includes estimates for the above countries for which data are not available and for minor producing countries. Foreign Agricultural Service. Prepared or estimated on the basis of official statistics of foreign governments, other foreign source material, reports of U. S. Agricultural Attaches and other U. S. representatives abroad, and related information. Prewar estimates for countries having changed boundaries have been adjusted to conform to present boundaries, except as noted.

SOYBEAN BLUE BOOK

Tables: (1) World soybean production. (2) Canadian soybean production. (3) Soybean production, utilization and value, 1936-1959 Canada. (4) Soybean crushings in Canada. (5) Soybean production-United States (with acreage and yield), 1924-1959. (6) U.S. Soybean production by states (1959). (7) U.S. soybean production, supply, and utilization (incl. exports, carryover), 1924-1959. (8) U.S. soybean production, acreage, and yield by state, 1924-1959. (9) U.S. soybeans: Inspected receipts. (10) U.S. soybeans-supply and distribution, 1952-1959 (1,000 bushels). (11) U.S. Soybean oil meal and cake production, supply and utilization, 1924-1959 (1,000 tons). (12) Soybean oil, meal and cake production and stocks by states, 1955-1958. (13) Oilseed cake a meals, supply and distribution, Oct. 1950-59. Incl. soybean, cottonseed, linseed, peanut, copra, total. (14) Production of protein concentrates (cake and meal), 1937-41 (avg.) to 1951-59. Incl. soybean, linseed, cottonseed, copra, gluten feed and meal, tankage and meat scraps, fish cake and meal, dried milk products (dried and concentrated skim milk, buttermilk, and whey used for animal feed), other milk products (fed on farms), total. Note: In 1953-54,395,000 tons of dried milk products were fed to animals. (15) U.S. soy flour production. (16) Production and exports of soy flour and grits (incl. full fat, low fat, and defatted products, exported commercially or to military). (17) Production of mellorine [frozen dessert where vegetable oil replaces butterfat], 1953-59, by month. (18) U.S. fats and oils production, 1937-41 (avg.) to 1959. Incl. Butter, lard,

edible beef fats, total edible animal fats, corn oil, cottonseed, edible olive oil, peanut oil, soybean oil, total edible vegetable oils, inedible oils. (19) Soybean oil utilization, 1931-1959 (million lb). Incl. Foods: Margarine, shortening, other, total, Non-food products: Soap, paint & varnish, other drying oil products, miscellaneous, loss, total, total domestic disappearance. (20) Same as No. 19 but in percentages.

(21) Utilization of soybean products, 1955-56 to 1958-59. Incl. meal and oil: Livestock feed, industrial, fertilizer, export; from 1955 to 1959, use of soybean oil meal as a fertilizer was negligible, whereas 2.5 to 3.9% was exported. (22) Prices of U.S. soybeans, by month and season average, 1923-1959. (23) Same as No. 22 but only for No. 1 yellow: Chicago, Illinois country shipping points, Minneapolis. (24) Same as No. 21 but soybeans for crushing, No. 2 yellow. (25) Value of U.S. soybean crop, 1925-59 (thousand dollars) in these states: Total USA, Illinois, Iowa, Indiana, Ohio, Missouri, Minnesota. (26) Soybean price support operations, 1932-33 to 1959-60. Started in 1941-42 and has continued to the present, with a peak of \$2.56 per bushel in 1953-55. (27) Price spread, soybeans and end products, 1945-1958. Spread between price received by farmers and value of products. (28) Prices of U.S. soybean oil meal (44% protein), 1929-1959 by month. (29) Prices of U.S. crude soybean oil, by month, 1929-30 to 1959-60. (30) Imports, exports, soybeans, oil and meal.

(31) Soybeans: Inspections for export, 1957-59, with country of destination and port of departure. (32) U.S. trade

in soybeans, fats and oils. (33) Oil and fat exports under P.L. 480. Total, cottonseed oil, soybean oil, Oct. 1954 to Sept. 1959. Incl. country of destination, the top four being Turkey, Pakistan, Israel, and Egypt. (34) Imports, exports cake and meal, 1929-1958, incl. cottonseed, soybean, linseed, peanut, copra. Exports incl. country of destination. (33) Soybeans: Crushings and yields of oil and meal. (35) Bar chart: Major markets for U.S. soybeans since 1953: West Germany, Netherlands, Other Europe, Japan, Canada, Other. (36) Composition of soybean seeds, by variety, incl. Maturity Group No., % protein, % oil, weight of 100 seeds in grams. (37) Amino acids of soy protein. (38) Composition of Lecithin. (39) Composition of soybean oil, by variety. Incl. linolenic acid, linoleic acid, oleic acid, saturated acids.

Official standards for soybeans, Revised effective Sept. 1, 1955. Soy flour standards, for full-fat, low-fat, and defatted. Densities of various soybean products. Map of the USA showing the best adapted soybean varieties for each major soybean producing state. Directories: Processors of soybeans, by state, with address and names of officers (p. 56-74). Canadian soybean processors (p. 74). Manufacturers of 50% protein soybean meal (by state, p. 76). Foreign soybean processors, by country (p. 78-81). Refiners of soybean oil, by state (p. 82-84). Manufacturers and handlers of soy foods (p. 86-93): Beverages, breakfast foods, canners of green vegetable soybeans, canners of mature soybeans, cookies, crackers, toasts and wafers, frozen desserts (companies that make vegetable oils used in frozen desserts), health food store & supply houses, lecithin, macaroni, spaghetti & noodles, margarine, meat substitutes, proteins (Griffith Labs, Gunther, Worthington Foods), pudding powders (Brockville, Ontario, Canada), Salad and cooking oils, shortening, sausage binders, seasonings, soups, soybean oil, soybeans for cooking and sprouting, soy butter (Town Food Co., Riverside, California, makes "Town: soy lecithin spread"; Shedd-Bartush Foods, Detroit, Michigan, makes "Willow Run" soy spread), soy cheese [tofu], soy flour, grits and flakes, soy flour mixes, soy milk, soy sauce, sprouts, vitamins, whipping agents.

Manufacturers of industrial products employing soybeans (p. 94-95): Caulking compounds & floor tile, coated papers & leather dressing, fire-fighting foam, glues, plywood & adhesives, insecticides, laminating, lecithin, oilcloth and coated fabrics, paints and varnishes (13 companies), paper sizings, wallpaper and wallboard coatings, resins, soaps, soybean fatty acids (8 companies), soybean oil. Services for the industry (p. 96-109): Analysts, appraisals, brokers, commission merchants & jobbers, consultants, engineering services, export elevators, exporters & importers, export warehousing and handling, farm management, field warehousing, futures market, market analysis, mill construction contractors, milling service, miscellaneous services, oil transports, transportation.

Equipment and supplies for the soybean industry (p.

110-32): Aspirators, bagging equipment, belting, chains, conveyors, elevators, defoliant, drying and aeration equipment (farm driers, grain driers, meal driers), dust control systems & dust collectors, elevator buckets, fans, farm equipment, fertilizers, fumigants, fungicides, germinators, grain and seed cleaning and separation equipment, grain grading equipment & moisture testers, grain handling equipment, granulators, grinding & mixing equipment, herbicides, insecticides & pesticides, inoculants, laboratory equipment, man-lifts, material level indicators, materials handling equipment, miscellaneous equipment, packaging materials, pelleting machines, power transmission equipment, pumps, respirators, seed protectants, sifters, soil testing, soybean storage (elevator & processing units, farm units), spraying and irrigating equipment, temperature systems, transportation equipment, truck lifts, unloaders, waterproofing, weighing and packaging equipment.

Soybean processing [crushing] and oil refining equipment and supplies (p. 134-42): Bleaching and filtering equipment, catalysts, complete plants [for crushing], continuous counter-current solvent extractors, continuous screw presses, degumming, deodorization, fractionation, hydraulic pressing equipment, hydrogenation, margarine, miscellaneous equipment, neutralization, shortening, solvent recovery, solvents, soybean seed [suppliers and private breeders], vegetable soybean seed. Advertisers' index. Incl. Allied Mills, V.D. Anderson, ADM, Arkansas Grain Corp., Big 4 Cooperative Processing Assn., Blaw-Knox Co., Buhler Mill Engineering Co., Cargill Inc., Central Soya Co., Crown Iron Works Co., Dannen Mills Inc., Delphos Grain and Soya Products Co., Albert Dickinson Co., Louis Dreyfus Corp., Esso Standard Oil, Farmers Cooperative Assn., Farmers' Cooperative Co., Felco Soybean Oil Meal Dealers, French Oil Mill Machinery Co., Funk Bros. Seed Co., Galesburg Soy Products Co., General Mills Inc., Jacob Hartz Seed Co., Inc., Honeymead Products Co., Huntley Mfg. Co., Illinois Soy Products Co., Iowa Milling Co., Iowa Soya Co., Jensen Mills, Kansas Soya Products Co, Inc., Spencer Kellogg & Sons, Inc., Lauhoff Soya Co., Albert Lea Engineering Co., North Iowa Cooperative Processing Assn., Penola Oil Co., Phillips Petroleum Co., Pillsbury Co., Port of New Orleans, Quincy Soybean Products Co., Rice Grain Corp., Seedburo Equipment Co. (measures oil content of soybeans in 10 minutes), Skelly Oil Co., A.E. Staley Mfg. Co., T.W. Wood & Sons (Seedsmen since 1879; Richmond, Virginia). Address: Hudson, Iowa.

362. Paulsen, Twila M.; Holt, K.E.; Anderson, R.E. 1960. Determination of water-dispersible protein in soybean oil meals and flours. *J. of the American Oil Chemists' Society* 37(4):165-71. April. [9 ref]

• **Summary:** In the early 1930s, investigations on this subject began in the ADM laboratories in an effort to find a laboratory method that would measure the comparative

fertilizer value of various type of soybean oil meals for use in the tobacco industry. Address: Archer-Daniels-Midland Company, Minneapolis, Minnesota.

363. Paukner, Owen; Smallwood, Blair. 1960. Review of oils, varnishes and alkyds: Drying oils. *Paint Industry* 75(6):10-11. June.

• **Summary:** Although soya oil is only a semi-drying oil, it can be chemically modified to take the place of linseed oil as a fast-drying base in oil paints. Chemical modification has, in part, “accounted for a rather phenomenal increase in its use since 1945.” However, the most important factor in the increased use of soy oil has been the production of alkyd resins from it, with their many applications in both industry and architecture.

In 1958 the U.S. paint industry used 902 million lb of oils. Those most widely used (in million lb) were linseed oil 426, soya oil 163, tall oil 81, dehydrated castor oil 63, tung oil (also known as Chinawood oil) 36, fish oil 27, and oiticica (imported from Brazil; pronounced oit-uh-SEE-kuh, from the tree *Licania rigida*). 9. A description of each is given. Address: Archer-Daniels-Midland Co.

364. *Soybean Digest*. 1960. Dr. Hayward joins Council staff. June. p. 23.

• **Summary:** “J.W. Hayward, 61, Minneapolis [Minnesota], world renowned authority on nutritional and biological aspects of soybeans, has been named director of nutrition for the Soybean Council of America, Inc... Dr. Hayward is being loaned to the Council by Archer-Daniels-Midland Co., where he has been director of nutrition for the past 25 years...”

“He is establishing an office for the Soybean Council of America in room 304, Baker Building, Minneapolis 2. Dr. Hayward’s appointment was prompted by a new market development program of SCA and the Foreign Agricultural Service of the U.S. Department of Agriculture. According to terms of the first commodity contract negotiated last January, government funds will be used to develop foreign markets for soybeans and soybean products. Considered a major break-through for the industry, the agreement designates more than 40 countries for market development work, utilizing foreign currencies acquired by the USDA.” A photo shows Dr. Hayward.

365. *Mankato Free Press (Minnesota)*. 1960. Honeymead sells plant for \$6,000,000. Aug. 3. p. 1-2.

• **Summary:** Honeymead’s fixed assets and name (not the corporation) were sold to the Farmers Union Grain Terminal Association (GTA), according to Lowell Andreas, Honeymead president. It was a straight cash deal. The sale, which will have no effect on the 100 employees, was completed at 1:30 p.m. on Tuesday, and will take effect Sept. 2. As part of the sale, Lowell Andreas has agreed to manage the operation for not less than 10 years. He will be

subject only to the GTA board of directors consisting of 12 farmers. GTA, based in St. Paul, Minnesota, is a cooperative which markets grain for more than 600 county [sic, country] elevators in 4 states. Honeymead processes both soybeans and flax.

Note: This is the earliest document seen (Aug. 2016) stating that Honeymead Products, a soybean processor in Mankato, Minnesota, has changed from a privately owned company (by the Andreas family) to one that is cooperatively owned (by Farmers Union GTA).

366. *Mankato Free Press (Minnesota)*. 1960. ‘Just day to day business.’ Aug. 3. p. 1-2.

• **Summary:** Lowell Andreas, president of Honeymead, commented that the \$6 million sale of Honeymead Products Co. is “just day to day business”—as he sipped a cup of morning coffee. After Sept. 2, the effective date of the sale, Andreas will switch from being president of the sprawling soybean plant to being its manager. Lowell and his brother, Dwayne, negotiated the sale with GTA. They went to St. Paul Tuesday morning, without the slightest idea that they would be selling Honeymead. They arrived at 11:00, talked with GTA through lunch, and finalized the deal at 1:30 that afternoon. Now he is looking for a place to invest the \$6 million.

Andreas believes that soybeans have a bright future in this area. In 1947, when Honeymead bought the plant in Mankato, the storage capacity was 140,000 bushels. Today it is 3.75 million bushels—a 26-fold increase in 13 years. The business began to expand rapidly when livestock feeders began to demand soybean meal in their feed concentrates. Portrait photos show Lowell and Dwayne Andreas.

367. *Farmers Union Herald (St. Paul, Minnesota)*. 1960. GTA enters processing field with soybean plant purchase [Honeymead Products Co.]: Another co-op milestone. 34(15):1, 3. Aug. 8.

• **Summary:** “Another milestone in the growth of the farmers’ own businesses in the Upper Midwest has been reached with the announced purchase by GTA of the Honeymead Products Co. of Mankato, Minnesota.

“Announcement of the acquisition by Farmers Union Grain Terminal Association was made to the press in response to numerous inquiries on Tuesday, Aug. 2, by General Manager M.W. Thatcher. The board of directors of the cooperative had, that day, put its final stamp of approval on the \$6 million transaction and the details had been laid before the country field staff... The Honeymead plant, located on the Minnesota River, in Mankato, is in the heart of soybean producing areas of southern Minnesota. It handles around 56,000 bushels of soybeans a day, turns the wonder bean into oils, protein products, flours and flakes which it sells worldwide.

“Dwayne Andreas, chairman of the Honeymead board,

and Lowell Andreas, his brother, bought the company from a Pacific Northwest egg cooperative soon after they came out of the military services after World War II. They are natives of Iowa, born and raised on the farm but have found their greater talents in farm business management roles.” Honeymead’s Mankato plant is now “the largest single plant in the soybean crushing field. It also crushes flaxseed...” The plant consumes about a third of Minnesota’s entire soybean crop. Total sales are around \$50 million a year.

Portrait photos show Dwayne O. Andreas (chairman of the board) and Lowell Andreas (president). Smaller photos show J.L. Maslon, C.T. Mullan, and W.B. Cox, vice presidents of Honeymead. An aerial photo shows the Honeymead plant in Mankato.

Note: This is the earliest document seen (Nov. 2007) that mentions “GTA” (written as such) in connection with soybeans. Address: Minnesota.

**368. Product Name:** Soybean Oil, and Soybean Oil Meal.

**Manufacturer’s Name:** Farmers Union Grain Terminal Association (St. Paul, Minnesota).

**Manufacturer’s Address:** Mankato, Minnesota.

**Date of Introduction:** 1960 August.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** *Mankato Free Press* (Minnesota). 1960. “Honeymead sells plant for \$6,000,000.” Aug. 3. p. 1-2. Honeymead’s fixed assets and name (not the corporation) were sold to the Farmers Union Grain Terminal Association (GTA), according to Lowell Andreas, Honeymead president. It was a straight cash deal. The sale, which will have no effect on the 100 employees, was completed at 1:30 p.m. on Tuesday, and will take effect Sept. 2. As part of the sale, Lowell Andreas has agreed to manage the operation for not less than 10 years. Note: Honeymead Products has just changed from a privately owned company (by the Andreas family) to one that is cooperatively owned (by Farmers Union GTA).

*Mankato Free Press* (Minnesota). 1960. ‘Just day to day business.’ Aug. 3. p. 1-2. After Sept. 2, the effective date of the sale, Andreas will switch from being president of the sprawling soybean plant to being its manager. Lowell and his brother, Dwayne, negotiated the sale with GTA. They went to St. Paul Tuesday morning, without the slightest idea that they would be selling Honeymead.

*Farmers Union Herald* (St. Paul, Minnesota). 1960. “GTA enters processing field with soybean plant purchase [Honeymead Products Co.]: Another co-op milestone.” 34(15):1, 3. Aug. 8. “Another milestone in the growth of the farmers’ own businesses in the Upper Midwest has been reached with the announced purchase by GTA of the Honeymead Products Co. of Mankato, Minnesota. Announcement of the acquisition by Farmers Union Grain Terminal Association was made to the press in response to

numerous inquiries on Tuesday, Aug. 2, by General Manager M.W. Thatcher. The board of directors of the cooperative had, that day, put its final stamp of approval on the \$6 million transaction and the details had been laid before the country field staff...”

*Soybean Digest*. 1960 “Honeymead products sold to Farmers Union Grain Terminal Assoc.” Sept. p. 74. “Farmers Union Grain Terminal Association, big St. Paul, Minnesota, grain marketing cooperative, moved into the soybean processing business Aug. 2 with the purchase of Honeymead Products Co.’s soybean plant at Mankato, Minnesota. Purchase price was about \$6 million, according to M.W. Thatcher, general manager of GTA.”

Perdue, Elmer J.; McVey, Daniel H. 1971. “Growth of cottonseed and soybean processing cooperatives.” *USDA Farmer Cooperative Service, FCS Information No. 75*. 82 p. July. See p. 9. Table 4 lists 13 “Cooperative soybean processing associations operating in 1970.” 11. Farmers Union Grain Terminal Association (St. Paul, Minnesota, Honeymead Products Division) (Mankato, Minnesota, 1960).

**369. Product Name:** Ardex 550 (Protein-Rich Edible Soy Flour).

**Manufacturer’s Name:** Archer Daniels Midland Co.

**Manufacturer’s Address:** 733 Marquette Ave., Minneapolis 40, Minnesota. Phone: FEderal 3-2122.

**Date of Introduction:** 1960 September.

**New Product–Documentation:** ADM. 1960, Sept. *Annual report for the year ended June 30, 1960*. “A high protein soy flour, Ardex 550, that virtually eliminates the characteristic soy taste and odor, is being introduced to the food industry...” *Soybean Digest*. 1960. Oct. p. 25.

*Mankato Free Press* (Minnesota). 1962. “Mankato firm processes products from soybeans: Archer-Daniels-Midland.” Feb. 23. A new ADM soy product, Ardex 550, is a “protein supplement for macaroni and spaghetti products and a replacement for dry milk solids in bread.”

Note: This is the earliest known ADM product with the brand name Ardex.

370. Archer-Daniels-Midland Co. 1960. Annual report for the year ended June 30, 1960. General offices: 700 Investors Building, Minneapolis 2, Minnesota. 18 p.

• **Summary:** Net sales and other operating income: \$239,895,380. Earnings before taxes: \$6,543,592. Net income (profits): \$3,665,321. Current assets: \$64,279,319. Current liabilities: \$13,464,133. Employees: 4,661.

The section titled “Specialty Group” (p. 8) states that a new Prochem Division, “formed during the year by consolidation of the Soya Specialties, Isolated Protein and Industrial Cereal Departments, reported favorable results. A high protein soy flour, Ardex 550, that virtually eliminates the characteristic soy taste and odor, is being introduced to the food industry... Industrial isolated soy proteins were

# Financial and Operating Data FOR THE LAST TEN YEARS

	Net Sales and Other Operating Income	Provision for Income Taxes		Net Profits		Dividends Paid		Retained in Business	Shareholders' Equity	
		Amount	Per Share	Amount	Per Share	Amount	Per Share		Amount	Per Share
1960	\$239,895,380	\$2,878,271	\$1.82	\$3,665,321	\$2.31	\$3,196,323	\$2.00	\$ 468,998	\$90,708,461	\$57.24
1959	239,370,108	5,749,628	3.58	5,435,386	3.38	3,206,123	2.00	2,229,263	98,698,393	61.48
1958	225,811,912	3,607,414	2.27	3,903,622	2.45	3,189,312	2.00	719,661	95,953,396	60.32
1957	231,869,472	5,352,865	3.46	5,204,491	3.36	3,194,822	2.00	2,009,669	92,914,242	60.02
1956	221,377,508	6,060,842	3.72	5,871,506	3.60	3,269,988	2.00	2,601,518	93,987,242	57.71
1955	230,793,087	6,316,705	3.83	5,749,888	3.49	3,291,418	2.00	2,458,470	92,116,453	55.93
1954	216,424,586	5,043,726	3.06	5,013,390	3.05	3,289,496	2.00	1,723,894	89,590,709	54.47
1953	227,519,603	2,364,551	1.44	3,853,319	2.34	4,605,294	2.80	(751,975)	87,866,815	53.42
1952	240,189,445	6,368,301	3.87	( <sup>1</sup> )7,413,084	4.51	4,577,294	2.80	2,835,790	88,618,790	53.88
1951	247,998,794	7,098,299	4.34	10,764,726	6.58	4,577,294	2.80	6,187,432	85,266,750	52.16

(<sup>1</sup>) Includes non-operating credits after taxes of \$1,937,940.

under severe competition from imported casein. Facilities for production of Ardex 550 have been installed and expansion of the isolated protein plant was completed. These new protein facilities are among the most modern in the industry.”

The Specialty Group's product lines include (p. 9): Core oils, binders, and washes. Industrial and edible soy flours. Industrial isolated proteins.

On pages 14-15 is a large table showing “Financial and operating data for the last ten years” [a 10-year summary]. Net sales, net income (profit), cash dividends, and number of employees were all decreasing.

On the white cover, the Archer, pulling back an arrow in his bow, is embossed—and barely visible. Address: Minneapolis, Minnesota.

371. Archer-Daniels-Midland Company (a Corporation of Delaware). 1960. Improvements in or relating to delayed action granular fertilizers. *British Patent* 954,555. Date of application and filing complete specification: 12 Oct. 1960. 13 p. Complete specification published: 8 April 1964. Application made in the USA: 13 Oct. 1959. 6 drawings.  
• **Summary:** Concerns slowly soluble fertilizers. Soy alkylid is used in the preparation of the fertilizer. Address: 700 Investors Building, Minneapolis 2, Minnesota.

372. *Soybean Digest*. 1960. Protein-rich soy flour by ADM. Oct. p. 25.

• **Summary:** The new soy flour, Ardex 550, contains 50-55%

protein and is neutral in taste and odor—according to James Meier, manager of the company's Prochem division. “In a commercial bakery test, 3% of Ardex 550 substituted ideally for 4% of milk solids in white bread at a cost saving of 55%.

“The ADM soy flour retards ‘staling’ in baked goods while improving texture and toasting quality. It makes doughs easier to handle and bread doughs more compressible. In doughnuts, Ardex 550 reduces grease absorption.”

373. Archer-Daniels-Midland Co. 1960? Adpro 220: A very high molecular weight, high viscosity isolated soy protein (Brochure). Evandale near Cincinnati, Ohio. 26 p. Undated. 28 cm.

• **Summary:** This brochure, with a red protruding tab that reads “Adpro 220” has a red, white and blue cover with the large logo, including an illustration of an archer, and the company name and address in Ohio. Adpro 220 is an industrial soy protein isolate, recommended for use in latex paints or as an adhesive. Contents: Accent on science. Adpro isolated soy proteins. Specifications and uses. Preparation of alkaline dispersion. Preparation of short mixing type dispersion (Sodium hydroxide as solubilizing alkali). Preparation of long mixing type dispersion (Sodium hydroxide as solubilizing alkali). Preparation of long mixing type dispersion (Bleaching agents and fluidizing agents). Preparation of short mixing type dispersion (Potassium hydroxide as solubilizing alkali). Viscosity data. pH

characteristics of Adpro solutions. Methods of controlling foaming. Preservatives. Fluidizing, buffering and bleaching agents.

On the title page is a half-page black-and-white aerial photo of ADM's soybean processing plant in Evendale, Ohio—"Source of Adpro isolated soybean proteins." Below that are listed three types of these proteins: Adpro 112—A medium viscosity material. Adpro 220—A high viscosity material. Adpro 410—A low viscosity material. On page 2 are large photos of ADM soybean plants at Decatur, Illinois, and Mankato, Minnesota (built in 1950).

The section titled "ADM Products" (p. 4) states: "ADM was founded in 1902... It is the nation's largest flax crusher and producer of core oils and other additives for the foundry industry. One of the three largest soybean processors in the country..."

The section titled "Soybeans" (p. 4) states: "Since ADM first started processing soybeans during the 'twenties' [1920s], it has pioneered in many new developments. In 1934 it introduced solvent extraction processing to this country. In 1949 it marketed the nation's first 50% dehulled soybean meal. Throughout the years ADM has been a constant leader in perfecting and popularizing industrial and edible soy proteins and oils.

"During the past several years ADM has devoted considerable pioneering research to the isolated soybean protein. The results of this effort led logically to the purchase of the Drackett Company, Evendale, Ohio, in July 1957. ADM also has large, modern soybean plants at Decatur, Illinois, and at Mankato, Minnesota." Address: 2795 Sharon Rd., [Evendale near] Cincinnati 41, Ohio. Phone: PRinceton 1-3220.

374. Archer-Daniels-Midland Co. 1960? Adpro 410: A low viscosity, readily soluble isolated soy protein (Brochure). Evendale near Cincinnati, Ohio. 26 p. Undated. 28 cm.

• **Summary:** See next 4 pages. This brochure, with a red protruding tab that reads "Adpro 410" has a red, white and blue cover with the large logo, including an illustration of an archer, and the company name and address in Ohio. The contents are very similar to the brochure for Adpro 220. Adpro 410 is an industrial soy protein isolate, most widely used in high-solids paper and board coatings. It can also be used "in the manufacture of aqueous printing inks, match-striker strips and other applications when an emulsifier, protective colloid, suspending agent, film former and binder with good water resistance are desired."

On the back cover is a list of 30 "ADM sales offices and agents in all principal cities."

On the first two pages inside are aerial views of ADM soybean crushing plants in Evendale, Ohio; Decatur, Illinois; and Mankato, Minnesota (built in 1950).

Table of Contents:  
Accent on Science

Isolated Proteins  
Specifications and Uses  
Preparation of Mildly Acidic and Alkaline Dispersions  
Preparation of 15% Dispersions (Viscosity 23 cps @ 77°F. pH approximately 7.0)  
Preparation of 15% Dispersions (Viscosity 20 cps @ 77°F. pH approximately 9.0)  
Procedure for Preparing Protein Solutions for Clay Coatings, and Recommended Water Temperatures  
Viscosity Data  
pH of Protein Dispersions  
Methods of Controlling Foaming  
Preservatives  
Quantity of Preservatives per 100 Pounds of Final Mixture

Water Resistance of Adpro 410 Coatings

Compatible Materials

Page 4: "ADM was founded in 1902..."

Page 4: "Soybeans: Since ADM first started processing soybeans during the 'twenties' [1920s], it has pioneered in many new developments. In 1934 it introduced solvent extraction processing to this country. In 1949 it marketed the nation's first 50% dehulled soybean meal. Throughout the years ADM has been a constant leader in perfecting and popularizing industrial and edible soy proteins and oils." Address: 2795 Sharon Rd., [Evendale near] Cincinnati 41, Ohio. Phone: PRinceton 1-3220.

375. Andreas, Dwayne O. 1961. More jobs, more earnings, better buys and more revenue. *Chemurgic Digest*. Feb/March. p. 12.

• **Summary:** "Soybeans have become known as the 'miracle' crop of American agriculture. The record seems to support the title.



In the past 20 years the U.S. soybean crop has grown from 77 million bushels to over 500 million bushels today, and the farm value has increased from less than \$70 million to around \$1 billion today.

But anyone "who looks for a 'miracle' to explain the fantastic story of the soybean industry is in for a disappointment. Rather behind the

# *Adpro 410*

A low viscosity, readily soluble  
isolated soy protein



**A**rcher-  
**D**aniels-  
**M**idland  
company

2795 SHARON ROAD • CINCINNATI 41, OHIO

*Adpro 410*

**ARCHER - DANIELS - MIDLAND COMPANY**

2795 SHARON ROAD • CINCINNATI 41, OHIO

**ADM**  
**SALES OFFICES**  
**AND AGENTS**  
**IN ALL**  
**PRINCIPAL CITIES**

**Atlanta 10, Georgia**  
 Archer-Daniels-Midland Co.  
 650 Murphy St. S.W.  
 Tel: Plaza 5-5741

\***Baltimore 29, Maryland**  
 A. B. Kohl Sales Co.  
 4615 Edmondson Ave.  
 Tel: Longwood 6-3667

\***Buffalo 2, New York**  
 Archer-Daniels-Midland Co.  
 202 Corn Exchange Bldg.  
 Tel: Cleveland 1014

**Cambridge, Massachusetts**  
 Archer-Daniels-Midland Co.  
 263 Fifth Street  
 E. Cambridge 42, Mass.  
 Tel: University 4-5616

**Chicago 30, Illinois**  
 Archer-Daniels-Midland Co.  
 4761 West Touhy Avenue  
 Tel: Irving 8-6590

**Cincinnati 2, Ohio**  
 Archer-Daniels-Midland Co.  
 710 Federal Reserve Bank Bldg.  
 Tel: Garfield 1-1638

**Cleveland 2, Ohio**  
 Archer-Daniels-Midland Co.  
 2191 West 110th Street  
 Tel: Woodbine 1-4690

\***Dallas 15, Texas**  
 Southwest Sales Co., Inc.  
 P. O. Box 9275  
 Tel: Hamilton 1-7113

**Detroit 35, Michigan**  
 Archer-Daniels-Midland Co.  
 18333 James Couzens Hwy.  
 Tel: University 4-6792

\***Grand Rapids 2, Michigan**  
 Krekel-Goetz Sales & Supply Co.  
 302 Houseman Building  
 Tel: Glendale 6-8402

**Houston 10, Texas**  
 Archer-Daniels-Midland Co.  
 2525 Cline Street  
 Tel: Capital 8-9373

\***Indianapolis 2, Indiana**  
 Indiana Naval Stores Co.  
 401-409 W. 17th Street  
 Tel: Walnut 3-2431

**Kansas City 41, Missouri**  
 Archer-Daniels-Midland Co.  
 Centennial Building  
 Tel: Harrison 1-7448

**Los Angeles 22, California**  
 Archer-Daniels-Midland Co.  
 6608 E. 26th Street  
 Tel: Raymond 3-4711

\***Louisville 2, Kentucky**  
 Lewis & Company  
 102 West Main Street  
 Tel: Juniper 5-5361

\***Memphis 1, Tennessee**  
 The Lilly Company  
 466-468 Union Avenue  
 Tel: Jackson 6-3137

**Milwaukee 16, Wisconsin**  
 Archer-Daniels-Midland Co.  
 3003 W. Hopkins St.  
 Tel: Uptown 3-4567

**Minneapolis 2, Minnesota**  
 Archer-Daniels-Midland Co.  
 700 Investors Building  
 Tel: Federal 3-2112

**New Orleans 12, Louisiana**  
 Griffith-Mehaffey Co., Inc.  
 102 Poydras Street  
 Tel: Magnolia 1386 or 1387

**New York 7, New York**  
 Archer-Daniels-Midland Co.  
 225 Broadway  
 Tel: Digby 9-0750

**Philadelphia 18, Pennsylvania**  
 Archer-Daniels-Midland Co.  
 18 Hilltop Road  
 Tel: Chestnut Hill 7-7000

**Pittsburgh 34, Pennsylvania**  
 Archer-Daniels-Midland Co.  
 300 Mt. Lebanon Blvd.  
 Tel: Locust 3-2520

\***Pittsburgh, Pennsylvania**  
 Joseph A. Burns and Son  
 124 Harrison Avenue  
 Tel: Poplar 1-1161

\***Portland 10, Oregon**  
 Van Waters & Rogers, Inc.  
 3950 N.W. Yeon Avenue  
 Tel: Capital 2-1721

**St. Louis, Missouri**  
 Archer-Daniels-Midland Co.  
 3rd and St. Louis  
 Valley Park, Missouri  
 Tel: Woodlawn 1-6500

**San Francisco, California**  
 Archer-Daniels-Midland Co.  
 1015 San Mateo Ave.  
 San Bruno, California  
 Tel: Plaza 6-1403

\***Seattle 4, Washington**  
 Van Waters & Rogers, Inc.  
 4000 First Avenue South  
 Tel: Seneca 5050

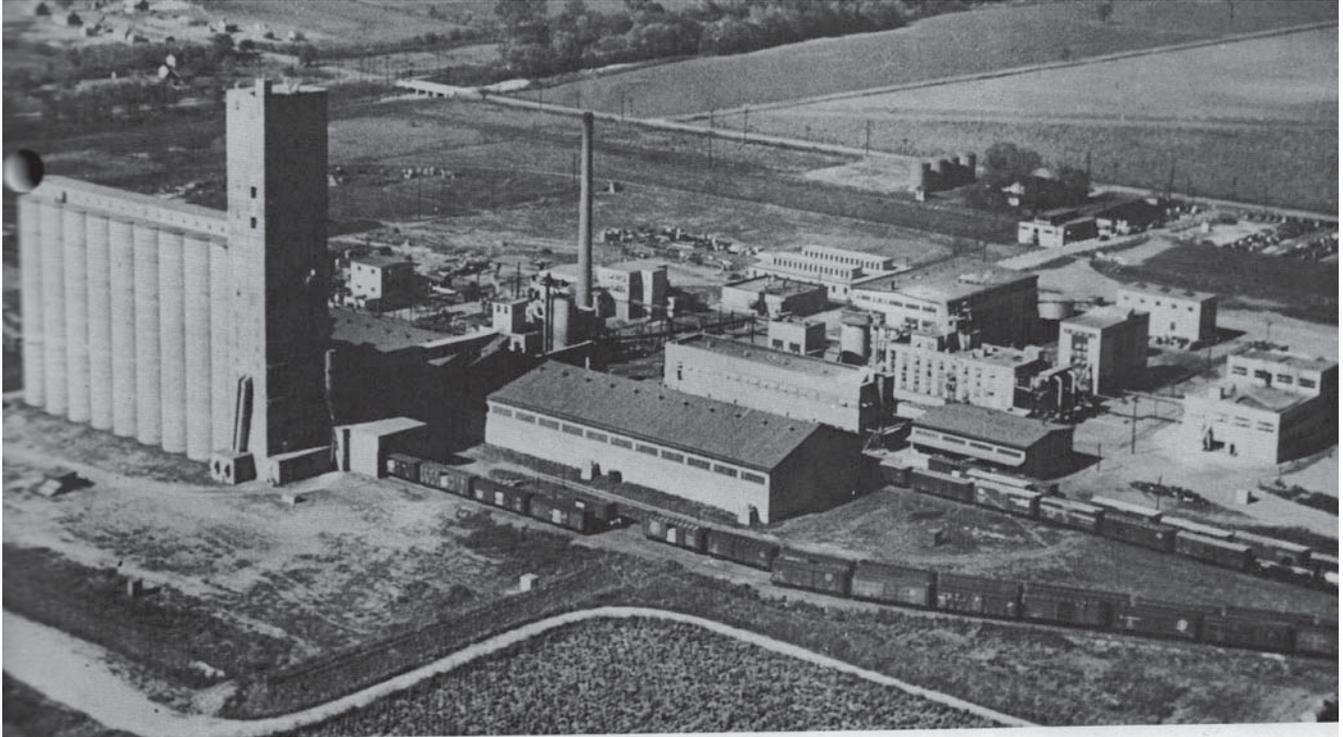
**Toronto 10, Ontario**  
 Archer-Daniels-Midland Co.  
 (Canada) Ltd.  
 200 Fairbank Avenue  
 Tel: Orchard 4433

\***Montreal 6, Quebec**  
 Archer-Daniels-Midland Co.  
 (Canada) Ltd.  
 1215 Greene Avenue  
 Tel: Wilbank 3426

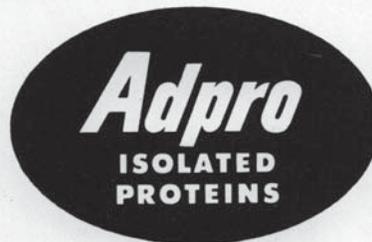
**INTERNATIONAL DIVISION**  
**New York 7, New York**  
 Archer-Daniels-Midland Co.  
 225 Broadway  
 Tel: Digby 9-0750

\*Sales offices and agents who do not handle products of ADM Chemical Products Division

Litho in U.S.A.



ADM's Evendale, Ohio Soybean Plant... Source of Adpro Isolated Soybean Proteins



ADPRO 112 ..... A medium viscosity material

ADPRO 220 ..... A high viscosity grade

ADPRO 410 ..... A low viscosity grade

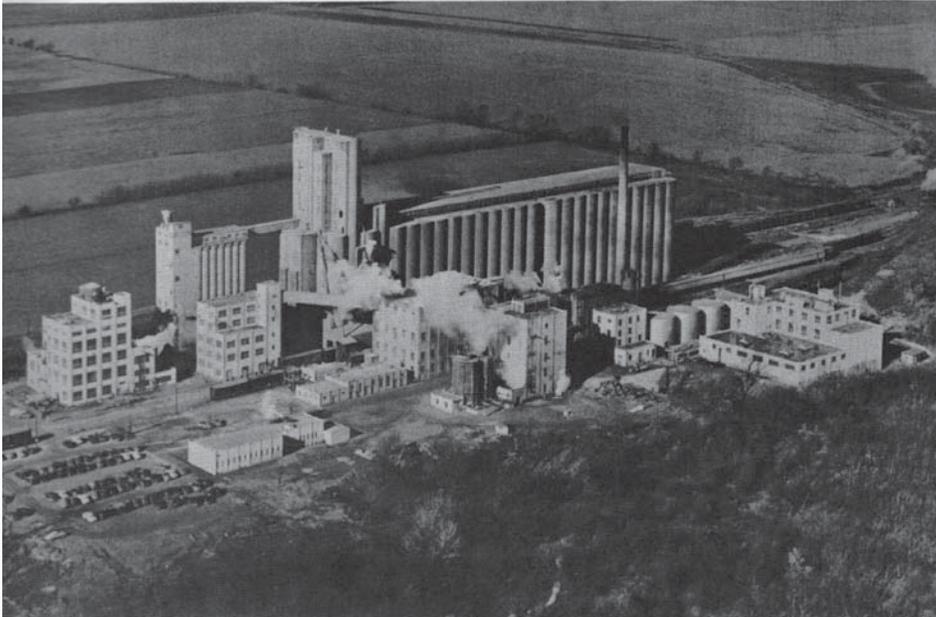
**Archer-Daniels-Midland company**

2795 SHARON ROAD

CINCINNATI, OHIO



## ADM SOYBEAN PROCESSING PLANTS . . .



Left - ADM's modern processing plant in Decatur, Illinois.

Right - ADM's Mankato, Minnesota soybean plant built in 1950.



success story in the ‘work’ story...”

For example, at USDA’s Northern Regional Laboratory in Peoria, Illinois, “a new process has been developed for preparing two of Japan’s most important foods—miso and tofu. Both use soybeans.”

Congressmen “ought to support substantial increases in spending for utilization research.” Address: President, Chemurgic Council.

376. Diser, Gleason M. comp. 1961. Glossary of soybean terms. *Soybean Blue Book*. p. 61-64.

• **Summary:** This is the earliest known glossary with this title in the *Soybean Blue Book*. However in the first *Blue Book* (1947, p. 17-19) there was a somewhat similar section titled “Terminology: Definitions and product descriptions for the soybean industry.”

The following terms are defined in this glossary: Soybean(s), soybean processor, soybean processing (solvent extraction, mechanical pressing, hydraulic pressing), soybean oil, crude soybean oil, edible crude soybean oil, refined soybean oil, edible refined soybean oil, hydrogenated soybean oil, degummed soybean oil, winterized oil, technical grade refined soybean oil, soybean fatty acids, soybean soapstock, acidulated soybean soapstock, soybean lecithin, break material, sludge.

Soybean products: Ground soybeans, soybean hay meal, soybean flakes, 44% protein soybean oil meal, dehulled soybean flakes, 50% protein solvent extracted soybean oil meal, soybean proteins, soy flour, soy grits, soybean oil meal, defatted soy flour, low-fat soy flour, high-fat soy flour, full-fat soy flour, lecithinated soy flour, protein, isolated protein, toasting. Oriental soy foods: Soy sauce (shoyu), soy milk, miso, frozen tofu, aburaage, kinako, namaage, ganmodoki, tempeh, natto, yuba, moyashi (soybean sprouts). Address: Archer-Daniels-Midland Co., Minneapolis, Minnesota.

377. Paulsen, Twila M. 1961. A study of macaroni products containing soy flour. *Food Technology* 15(3):118-21. March. [7 ref]

• **Summary:** “Adding Ardex 550, a soy flour, to semolina at levels of 12.5, 17, and 25% increases the firmness of spaghetti subjected to long cooking periods and significantly improves the nutritional quality of macaroni products.” Address: Research & Development Dep., ADM, Minneapolis, Minnesota.

378. Rainey, W.L.; Horan, F.E. 1961. A new protein solid for white bread [ADM’s Ardex 550]. *Baker’s Digest* 35(2):34-35, 40. April. [7 ref]

• **Summary:** This seems to be a high-protein, defatted soy flour, but the article is not clear on just what type of product it is. Address: ADM, Minneapolis, Minnesota.

379. Shulman, Sol; Formo, M.W.; Rheineck, A.E. 1961.

Aliphatic urethanes. Effect of chain length on some physical properties. *J. of the American Oil Chemists’ Society* 38(4):205-08. April. [7 ref]

• **Summary:** A study of the thixotropic behavior of certain fatty materials including soybean oil. Address: Archer-Daniels-Midland Co., Minneapolis, Minnesota.

380. Archer Daniels Midland Co. 1961. ADM: soybean products circle the globe (Ad). *Soybean Digest*. June. p. 41.

• **Summary:** See next page. This full-page ad states:

“Around the world. For foods, animal feeds and industrial applications. Yes, wherever you are, for every purpose, you can rely on Archer-Daniels-Midland Company for quality soybean oil, meal, flour and specialty products.

“Long one of the leading, processors of soybeans in the United States, ADM has the production and research facilities and experience to supply you quality products and valuable information on their nutritional and technical utilization.

“Through the years ADM has been a leader in developing new uses for soybeans through research—and in promoting these uses world-wide. At present, for example, ADM is introducing a virtually colorless, odorless protein supplement for foods—a new product vastly superior in both nutritional and functional properties.

“So contact ADM for all your soybean product needs. ADM has sales offices or agents in 27 foreign markets and in every major US city.” Address: 700 Investors Building, Minneapolis 2, Minnesota.

381. *Soybean Digest*. 1961. Grits and flakes... from the world of soy: ADM is building new Central Research Lab. July. p. 20.

• **Summary:** “Archer-Daniels-Midland Co’s. new central research laboratory is pledged to the quest for better foods, fibers and chemicals for human progress. John H. Daniels, ADM president, speaking at ground breaking ceremonies in suburban Bloomington, where the laboratory will be located, said the company has contributed much in these fields since its founding nearly 60 years ago.

“Mr. Daniels called construction of the new laboratory the most significant step taken by the company in the past decade. He said it emphasizes ADM’s increasing concentration on products born from research. The company is a leading processor of chemicals and agricultural commodities.

“The new science facility will be located on a 73-acre tract overlooking the Minnesota River valley [in Minnesota]. It will bring together ADM’s research, technical service and engineering departments and scientific and technical libraries. Completion is scheduled for the fall of 1962.

“ADM, with 100 plants, elevators and mines in the United States and Canada, also maintains research facilities at Newark, New Jersey, Evendale, Ohio, and Los Angeles,



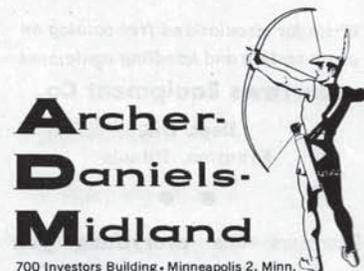
## **ADM** soybean products circle the globe!

Around the world. For foods, animal feeds and industrial applications. Yes, wherever you are, for every purpose, you can rely on Archer-Daniels-Midland Company for quality soybean oil, meal, flour and specialty products.

Long one of the leading processors of soybeans in the United States, ADM has the production and research facilities and experience to supply you quality products and valuable information on their nutritional and technical utilization.

Through the years ADM has been a leader in developing new uses for soybeans through research . . . and in promoting these uses world-wide. At present, for example, ADM is introducing a virtually colorless, odorless protein supplement for foods – a new product vastly superior in both nutritional and functional properties.

So contact ADM for all your soybean product needs. ADM has sales offices or agents in 27 foreign markets and in every major US city.



California.

A photo above this brief article shows two men, each holding a shovel, near a large sign; it has this caption: "Thomas L. Daniels, left, chairman of the board of Archer-Daniels-Midland Co., and Richard M. Nichol森, representing the research department, break ground for ADM's new central research laboratory. Nichol森 is business manager of the laboratory."

382. Hayward, J.W.; Diser, G.M. 1961. Soy protein as soy flour and grits for improving dietary standards in many parts of the world. A special report. *Soybean Digest*. Aug. p. 14-18, 20, 22-23. [5 ref]

• **Summary:** Contents: Introduction. Definition (Defatted soy flour, low-fat soy flour, high-fat soy flour, full-fat soy flour). Production. Composition. Nutritional properties. Conventional uses. Economic aspects. Recommended uses in specific diets. Soy milk as a food for children. Summary and conclusions.

This article begins: "Soybeans and products derived from them have served as the chief source of protein in the diet of millions of oriental people for nearly 5,000 years. Various other oilseed products have been developed over the centuries for use as food in different parts of the world. However, because they are adapted to a wide range of soil and climatic conditions and can be produced economically in many areas, soybeans continue to be of special interest in the field of worldwide nutrition.

"In the Orient and many other parts of the Far East, tofu and such foods made from fermented soybeans as miso, natto and tempeh are extremely popular. These foods are all rather uncommon among occidental races. They are not known at all to us in the United States except on an experimental basis. Our edible soya for protein is available for the most part in the form of flour, grits and concentrated protein. However, these forms of edible soya are practically unknown in the countries of the Far East."

Figures show: (1) Production of defatted, dehulled soya products—flour or grits—for edible uses (extracted with hexane solvent). (2) Bar graph—Amino acid composition of soy flour and some cereals commonly used in the human diet (grams of amino acid per 100 grams of food; defatted soya flour is very high {relative to degermed corn meal, patent wheat flour, and white rice} in lysine, methionine + cystine, phenylalanine, leucine, isoleucine and threonine). (3) Pie chart: Supplemental effect of soy flour on the nutritive value of cereal-soya mixtures. (4) Bar graph—Amino acid composition of soy flour in comparison with cottonseed, peanut and sesame flours (grams of amino acid per 100 grams of food).

Tables show: (1) Composition of soy flours and grits. (2) Calcium and phosphorus content of soy flours and grits as compared with some cereals (wheat flour, white rice, degermed corn meal). (3) Moisture, protein content, price

per pound and cost per pound of protein in some food stuffs. Address: 1. Director of Nutrition, Soybean Council of America, Inc.; 2. Research Dep., Archer-Daniels-Midland Co.

383. Archer-Daniels-Midland Co. 1961. Annual report for the year ended June 30, 1961. General offices: 700 Investors Building, Minneapolis 2, Minnesota. 21 p.

• **Summary:** See next page. Net sales and other operating income: \$213,115,452. Earnings before taxes: \$6,268,198. Net income (profits): \$3,747,730. Current assets: \$74,395,267. Current liabilities: \$24,705,743. Employees: 3,706.

A graph (p. 9) shows that in 1961 ADM's research expenditures were 4 times as great as in 1952. The new Central Research Laboratory will be completed in the fall of 1962.

On page 10 is a "Ten-year summary of financial and operating data." Net sales, net income (profit), cash dividends, and number of employees are all decreasing.

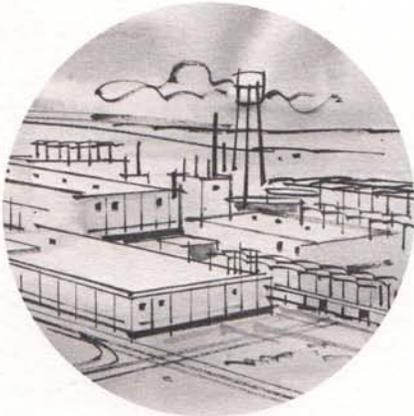
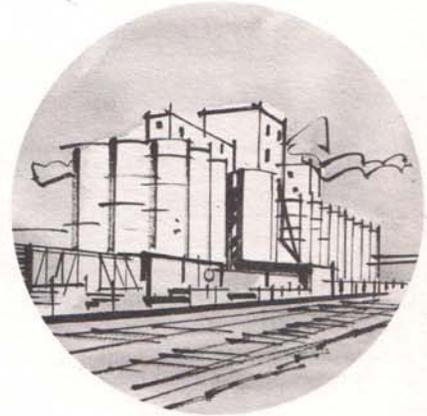
Note: This company needs a turnaround artist. Address: Minneapolis, Minnesota.

384. Roach, Howard L. 1961. Soybean Council of America—promotional progress. *Soybean Digest*. Sept. p. 61-64.

• **Summary:** This long report, presented at ASA's 41st annual meeting, begins as follows: Promotional progress is just a high-sounding term to describe what the soybean Council is doing and how it is being done. It would be well, therefore, to define our objectives in broad terms. The Soybean Council is embarked on an 'educational program to teach better nutrition and diets to the people of the world and, how soybean products can be of assistance in this effort.' Responsibility has been given the Council to carry forward this teaching to 41 countries located on all of the continents. The Council has responded in 21 countries thus far, with active offices located in 14 countries. The population of these 41 countries exceeds 1 billion persons.

"The question naturally follows, 'What does the Council have to offer?' The answer is, 'Soybean products—a superior vegetable protein and a wholesome, palatable vegetable oil.' The Council is not alone in this effort to improve the diet and satisfy hungry people. Other commodity groups such as Great Plains Wheat Market Development Association, U.S. Rice Export Development Association, Millers National Federation, U.S. Feed Grains Council, Dairy Society International, National Renderers Association, Institute of American Poultry Industries and many others also have the same objectives as the Council. The Council works and cooperates closely with many of these organizations.

"It should be pointed out that consumers are not interested in soybeans but are interested in products made from soybeans and, therefore, the Council does not spend time cultivating the desire for soybeans as soybeans, but



**ADM**  
1961 ANNUAL  
REPORT

ARCHER - DANIELS - MIDLAND COMPANY

rather devotes its efforts to the promotion of soy products. It makes no difference to the Council where the processing takes place. We, of course, would like to see the processing done in the United States, but we realize, and our processors realize, that others also want to perform this task. The most efficient processor will watch his business grow while the less efficient processor will have a struggle to survive.

“Within the past 9 months, your president has visited 25 countries located in South America, Asia, the Middle East, Africa and Europe. Everywhere we have heard the call, as Paul and Luke were called 1,900 years ago, and as recited in Acts 16:9, ‘And a vision appeared to Paul in the night; there stood a man of Macedonia, and prayed him, saying, “Come over into Macedonia and help us.”’

“Peoria Conference [in Illinois]: Every good thing should start at home and, therefore, the Council has spent much time and effort on programs here in the United States. Through our director of nutrition, Dr. James W. Hayward, a conference will be held in September when many scientists and others will for 3 days consider ‘Soybean Products for Protein in Human Foods.’ Two weeks ago the entire soy protein committee of the Council met with the Food for Peace officials in Washington and presented ways and means that soy products could be of assistance in this program. Preparation and planning for these important conferences takes much time and effort here at home. Communicating the telling of what the Council is doing, checking with authorities to see if proper statements are being made and all of the efforts of communication, writing statements and speeches, letter writing, telephone, cable and other methods of communication take a large part of the efforts of our domestic staff.

“Our methods of promotion overseas are undertaken in the following manner: Realizing that there are long-established food customs, religious taboos, climate, and many other factors too numerous to mention, we are forced to generalize on methods of education used by the Council in different countries. Following are some of the general policies and methods used to tell the soybean story:

“1. Survey the market situation in each country, and determine the role which U. S. soy products can profitably play in the life of that country.

“2. Establish an office that gives the impression of an on-going business organization that will be permanent. This means a suite of offices in a good business district, equipped in good taste according to the business customs of the country. We have learned that our overseas friends do not want to do business with companies and organizations that are here today and gone tomorrow. Our friends overseas are in business for keeps and expect us to feel and act in like manner. The Council does not emphasize price of our products but rather, dependability of supply from U.S. sources. Many nations have now learned that in order to stay in business, dependability of supply is far more important

than price. They demand an assurance of supply. Our office, our staff and all our actions must carry forward the impression of dependability.

“3. Employ a national of the country where the office is located as director for the Council and charge him with the responsibility of telling the story of soybean products to those who make or influence decisions within his country. The Council has a comprehensive training program for all employees. The director is made responsible for employing other members of his staff. To tell the story effectively, the director must have a good personality, be able to meet persons important in business and government, know English and other languages, and must have executive ability to hire, organize and supervise his own staff as well as organize seminars, fairs and other information media the Council may see fit to employ.

“4. Obtain cooperation from local organizations such as fats and oils associations, vanaspati associations, mixed feed manufacturers associations, livestock syndicates, universities, particularly the departments of nutrition, both animal and human, extension services, school authorities, international organizations such as UNICEF, WHO, FAO, all to serve as advisors and cooperators with and for the Council. The Council works closely with other U.S. government agencies such as International Cooperative Administration, U.S. Information Service, U.S. Operations Missions and others. In many cases these organizations contribute money, time and services to assist the Council in achieving our objectives... telling the story of soy products to the people of the country.

“5. The Council exhibits at national and international trade fairs, exhibits and bazaars to place the story of soybean products before the people.

“6. The Council organizes symposiums and schools and supplies, either from the United States or other countries, internationally known nutritionists and technicians to deliver papers on specific subjects. After the close of the meetings we encourage these persons, representing the Council, to meet with local business interests.

“7. We furnish technicians and advisors as consultants that have particular knowledge in:

“(a)–Livestock nutrition.

“(b)–Fats and oils technology.

“(c)–Human nutrition.

“(d)–General engineering knowledge on shipping, feed handling, storage of both oil and meal and product packaging.

“8. We establish liaison with individuals and companies wishing to procure knowledge of U.S. merchandising methods.

“9. Give to local press as well as U.S. Information Service information on use of soybean products.

“10. Bring to the United States persons selected by local business interests, after counsel by our local director and

the agricultural attache of the American embassy, to view agricultural production of food in the United States and to visit the U. S. soybean processing industry. We also afford opportunities for our guests to observe U.S. merchandising methods.

“11. Sponsor magazines and publications. One example, Nutrition, first published in Spain and now used in all Spanish speaking countries.

A large table (p. 62), titled “Dietary levels of various countries,” has the following 8 columns: (1) Country name. (2) Population. (3) Calories per day [per capita]. (4-7) Protein per day [per capita] (grams) from animal, pulse, other and total. Fat per day [per capita] (grams). The countries are ranked from top to bottom in descending order of calories per day.

A caption below the graph states: “\* Denotes SBC office and/or suboffice. Soybean Council offices are in 21 countries with 892,900,000 population. Peru office: Chile, Colombia, Ecuador, Peru, Venezuela; Denmark office: Denmark, Norway, Sweden; Netherlands office: Belgium, Netherlands. \$ Dollar markets.–P.L. 480 markets, all or part.”

A portrait photo shows Howard L. Roach. Address: President, Soybean Council of America. He is from Plainfield, Iowa.

385. *Soybean Digest*. 1961. Grits and flakes... from the world of soy: ADM to process soybeans at Fredonia, Kansas, plant. Sept. p. 84.

• **Summary:** “The board of directors of Archer-Daniels-Midland Co. has approved conversion of the company’s grain terminal at Fredonia, Kansas, to a soybean processing plant.

“The new facility will utilize the buildings and concrete storage tanks of the 1-million-bushel grain elevator. Conversion of the buildings and installation of soybean processing and handling equipment began immediately, with completion scheduled for the fall of 1962.

E.A. Olson, executive vice president of ADM’s agricultural group, said the plant will have a capacity of 6 million bushels a year. Mr. Olson said the southeastern Kansas location was selected for the plant because of the increasing production of soybeans in Kansas and neighboring Missouri. The plant will also be favorably located for serving the southwestern livestock and poultry markets with soybean meal.

“ADM also operates soybean plants at Mankato, Minnesota, and Decatur, Illinois. The Fredonia plant crushed linseed oil from flaxseed when flax was an important crop in Kansas years ago.”

A small photo showing the plant and 6 huge concrete storage tanks bears this caption: “ADM’S Fredonia, Kansas, installation will be converted to a soybean processing plant. Processing equipment will be installed in the buildings in the foreground.”

386. Wilcox, R.A.; Carlson, C.W.; Kohlmeyer, W.; Gastler, G.F. 1961. The growth response of turkey poult to a water-extract of soybean oil meal as influenced by different sources of isolated soybean protein. *Poultry Science* 40(5):1353-54. Sept. [3 ref]

• **Summary:** The following sources of isolated soy protein were used: (1) C-1 protein from Archer-Daniels-Midland Co., Cincinnati, Ohio; (2) PR protein from Central Soya Co., Inc., Chicago, Illinois; (3) 65 protein from Gunther Products, Inc., Galesburg, Illinois.

It was found “that soybean proteins vary considerably in their effects on poult growth and that, in poult studies, the source of the protein needs to be considered.”

Note: A “poult” is a young fowl, especially a young turkey. Address: Depts. of Poultry Husbandry and Station Biochemistry, South Dakota Agric. Exp. Station, Brookings.

387. **Product Name:** Soybean Oil, and Soybean Oil Meal.

**Manufacturer’s Name:** Archer Daniels Midland Co.

**Manufacturer’s Address:** Fredonia, Kansas.

**Date of Introduction:** 1961 October.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** Soybean Digest. 1961.

Sept. p. 84. “ADM to process soybeans at Fredonia, Kansas, plant.”

Soybean Digest. 1962. Aug. p. 35. “ADM names Fredonia soybean plant staff.” Don O. Fink will be production manager of ADM’s new soybean processing plant in Fredonia, Kansas—according to Raymond E. Fiedler, manager of the ADM soybean division.

In Oct. 1961 ADM began operating Spencer Kellogg & Sons’ former plant in Decatur, Illinois, under a lease.

388. **Product Name:** Soybean Oil, and Soybean Oil Meal.

**Manufacturer’s Name:** Archer-Daniels-Midland Company.

**Manufacturer’s Address:** Decatur, Illinois.

**Date of Introduction:** 1961 November.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** Soybean Digest. 1962. July.

p. 8. “Minneapolis a processing center.” ADM “presently operates three processing plants—two at Decatur, Illinois, including the former Spencer Kellogg plant there which ADM leased last November, and the third at Mankato, Minnesota. A fourth processing plant is under construction at Fredonia, Kansas, in the heart of a fast-growing soybean producing area.”

389. *Soybean Digest*. 1961. Grits and flakes... from the world of soy: Purchasing processing plants from Textron. Nov. p. 28.

• **Summary:** “Archer-Daniels-Midland Co. announced that

it is leasing the former Spencer Kellogg soybean plant at Decatur, Illinois, from Interoceanic Industries Inc. The longterm lease became effective Nov. 1. Interoceanic Industries purchased the Decatur plant recently from Textron, Inc. Textron, Inc., obtained the plant last July when it acquired Spencer Kellogg and Sons Inc.

“The sale was the first step in Spencer Kellogg’s program to withdraw from the soybean crushing business.

“Harold W. McMillen, board chairman of Central Soya Co., Inc., and Fred W. Thomas, division president of Spencer Kellogg, announced that Central Soya had completed arrangements for purchase of the Bellevue, Ohio, soybean crushing plant, and that ‘Central Soya will proceed almost immediately with the operation.’

“The company’s soybean plant at Des Moines, Iowa, was purchased by Cargill, Inc. All plants are now under operation by the new lessee or owners.”

390. Chambers, John A. 1961. Soya—The meal in a bean. *Arkady Review (Manchester, England)* 38(4):50-53. Dec.  
 • **Summary:** “Soya beans first made their appearance in this country in 1908 [sic] and over the years the volume of imports has steadily increased.” From these beans was extracted soya oil and protein.

“Another large soya bean usage in this country is in the form of flour, milled from the whole, full-fat soya bean. Raw soya bean endosperm when milled produces an enzyme active flour having a characteristic flavour. This type of flour has an extensive use in bread baking, because of its effect on the keeping qualities of bread. The characteristic flavour present in the raw beans can be removed by efficient processing, and the resultant flour produced from these beans has a pleasant, bland taste.” Address: B.Sc., Research Chemist, British Arkady Co. Ltd., Skerton Rd., Old Trafford, Manchester 16, England.

391. **Product Name:** Lecithin [Fluid, or Plastic Grades].  
**Manufacturer’s Name:** Honeymead Products Co.  
**Manufacturer’s Address:** Mankato, Minnesota.  
**Date of Introduction:** 1961.  
**New Product—Documentation:** Soybean Blue Book. 1961. p. 102. Still listed in 1976.

392. Deutsch, Ronald M. 1961. Snap! Crackle! Enter Dr. Kellogg. The battle of Battle Creek. From pillar to postum (Document part). In: R.M. Deutsch. 1961. *The Nuts Among the Berries: An Exposé of America’s Food Fads*. New York, NY: Ballantine Books. 224 p. See p. 43-45.

• **Summary:** This is a largely unsympathetic and satirical treatment of the health reform work of Dr. John Harvey Kellogg. Page 50 notes that “In 1879 he married Ella Eaton, of Alfred Center, New York. Within ten years, from the burgeoning sales of his books and the food products he was developing, he had earned enough money to build Ella

a twenty-room Queen Anne mansion close to the [Battle Creek] Sanitarium grounds. It was a lavish residence...” Dr. Kellogg drew no salary from the Sanitarium.

“Ella Kellogg kept busy around the Sanitarium. There was not much for her to do around the house, for two reasons. First there were any number of servants. And second, there were no children; Dr. Kellogg had stated publicly that sex bred evil diseases in young men, and therefore he was determined to live without sex as a demonstration that it could be done. Whatever the real reason, John Harvey Kellogg and Ella occupied separate apartments in their home. They were always good friends, and later they adopted a total of forty-two children...”

“We have seen Dr. Jackson’s water-cure establishment offer the first cereal product in *Granula*, crumbled bits of baked wheat. Kellogg had come up with much the same thing. He called it *Granola*. He was sued and changed the name to *Granose*.”

Charles W. Post, a Texan, went to Battle Creek to be cured. After 9 months at the San, Post gave up. He turned to studying the power of the mind, of mind over matter, Christian Science, and the like. Before long he got out of his wheelchair, declared that he was well, and went to work. Before he left the San, he offered to join forces with Dr. Kellogg in making breakfast cereals, but was rejected. In 1892 Post established La Vita Inn on 10 acres in Battle Creek; here the curative forces of both diet and mental healing were combined. Although meat was allowed, the other poisons were not.

Post cured people by telling them they were well—and wrote a book about it. He also wrote “The Road to Wellville,” a pamphlet that he gave away. In 1895 Post started to make Postum Cereal Food Coffee—just add water and serve as a hot drink in place of coffee. He first sold it in paper bags from a handcart in Battle Creek. Then he began to advertise the product widely and his sales soared. Eventually his ads focused on the ability of Postum to prevent “coffee nerves.” In 1898 he launched Grape Nuts, which he also sold as a health food. By 1901 Post had net income of a million dollars from his food business. “Imitators flocked to Battle Creek to stake their claims.” Before long, it was a boom town. Address: Popular scientific and medical reporter.

393. *Mankato Free Press (Minnesota)*. 1962. 60,000 bushels of soybeans processed: Daily at Honeymead. Feb. 23.

• **Summary:** Honeymead Products Co. of Mankato is the “world’s largest processor of soybean products.” Fully 60% of the soybeans grown in Minnesota are processed at this one plant. Honeymead’s soybean products include 44% soybean oil meal, 50% soybean oil meal, Lamisoy soy flour, lecithin, fully refined & deodorized soybean oil, crude soybean oil, toasted soy flour, brew flakes, degummed oil, once-refined oil, shell drain oil, clabber oil, and acidulated soap stock. In addition, Honeymead processes flax only at a recently

purchased company in Minneapolis.

Honeymead's clearing office in Chicago (Illinois) buys, sells, and hedges on the Chicago Board of Trade, where Honeymead has at least 5 men in the pits. A large photo shows the Honeymead office at 320½ Warren Street, where incoming grain prices from Chicago are posted.

Note: Talk with Lowell Andreas. 2003. July 23. In 1962 the Honeymead plant in Mankato was the world's largest single soybean processing plant. However it was Honeymead's only plant, so there were other companies (such as Cargill, ADM, and Central Soya) that processed more soybeans in total at the multiple plants owned by each. The flax processing company that Honeymead had just purchased in Minneapolis was Minnesota Linseed Oil Co. at Fridley, a suburb of Minneapolis; Ray Lindquist was manager before and after Honeymead bought the plant. Most of the soybeans grown in Minnesota and not processed at the Honeymead plant were shipped out of state. Although ADM also had a plant in Mankato, the Honeymead plant got much more and better coverage in local newspapers mainly because Honeymead was a locally owned company that contributed hugely to the Mankato economy, and was about twice as large as ADM. In addition, the publisher of the *Mankato Free Press* and Lowell were close friends.

394. *Mankato Free Press (Minnesota)*. 1962. Mankato firm processes products from soybeans: Archer-Daniels-Midland. Feb. 23.

• **Summary:** Alan D. Colby, manager of the ADM plant in Mankato, Minnesota, says he processes soybeans into better foods, fibers, plastics, coatings, and hundreds of other products. In 1961, the U.S. produced a record 693 million bushels of soybeans, up more than 25% from the previous year, while Minnesota's 56.2 million bushes were up 34% from the 1960 crop.

ADM, a research-minded company, is finding new industrial and nutritional uses for soybeans. ADM's soy flours are used in the Food for Peace program and in milk replacements, their high quality soybean meal is a major ingredient in livestock and poultry feeds, and their soy protein for human foods is used "in the form of dairy products, beefsteaks and chicken." A new ADM soy product, Ardex 550, is a protein supplement for macaroni and spaghetti products and a replacement for dry milk solids in bread.

The major uses for soybean oil are in the manufacture of margarine, shortening, and cooking and salad oils. But it is also a key ingredient in many industrial non-foods products such as paints, varnishes and other protective coatings, of linoleum, oil cloth, foundry core oils, printing inks, synthetic rubber, plastics, and many industrial chemicals with highly specialized uses.

Kaysoy flour, made in Mankato, is the basis for adhesives used mainly by the plywood and wallpaper

industries. "Soybean meal can be further processed into synthetic textiles..."

ADM's plant contributes more than half a million dollars to the Mankato community each year: \$476,000 in wages and salaries, and \$100,000 in real estate and personal property taxes. It also spent more than \$25,000 in Mankato buying supplies.

A large photo shows the ADM plant at Third Ave. and Harper St.

395. Greenlee, Sylvan O.; Pearce, John W. Assignors to S.C. Johnson & Son, Inc. (Racine, Wisconsin). 1962. Epoxide conversion of unsaturated acids. *U.S. Patent* 3,023,178. Feb. 27. 5 p. Application filed 30 June 1955. [13 ref]

• **Summary:** Concerns polyepoxide-unsaturated acid baked coatings. Soy is mentioned twice in this patent, as "soya fatty acids" and "epoxidized soya bean oil" (marketed as Adamex 710 by Archer-Daniels-Midland Co.). Address: Racine, Wisconsin.

396. Chambers, John A. 1962. Tom, Soya and Harry. *Arkady Review (Manchester, England)* 39(1):8-9. March.

• **Summary:** British Arkady makes "full-fat processed soya flour." Gives two typical bread recipes that call for 9 lb 8 oz of wheat flour, 8 oz of processed soya flour, plus lard, cold water and salt. Address: B.Sc., Research Chemist, British Arkady Co. Ltd., Skerton Rd., Old Trafford, Manchester 16, England.

397. *Soybean Digest*. 1962. Nutrition team on world survey of protein needs: Soybean Council of America, Inc. March. p. 20.

• **Summary:** Nutrition specialists from three U.S. soybean processing firms have gone into countries in various parts of the world on a survey of the protein needs of those areas. The soy protein utilization survey is being made under the program of the U.S. Department of Agriculture's Foreign Agricultural Service. The men go as representatives of the Soybean Council of America. They left on their tour in February and will return in March and April.

"Purpose of the trip is to gather information to help other nations solve their nutrition problems, and to determine the market potential for U.S. soy proteins in solution of such problems. The men will study diets, habits, common menus and food distribution patterns in the countries visited. They will confer with government agencies, food industry people, and relief agencies such as Church World Service, the National Catholic Welfare Conference, and the Red Cross. They will visit native families, sampling their foods and menus.

"Members of the team will work through agricultural attaches and the overseas offices of the Council in the countries visited.

"The members of the team and the principal countries

they will survey:

“Louis R. Brewster, operations control manager, General Mills specialty products division, Minneapolis [Minnesota], will visit India.

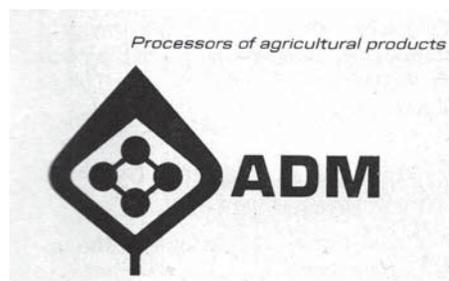
“Promod K. Batra, protein sales department, General Mills, will return to India, his home, as a member of the team.

“Gleason M. Diser, nutritionist agricultural research section, research laboratory, Archer-Daniels-Midland Co., Minneapolis, will visit Turkey.

“James J. Sellner, sales manager, soya specialties department, Archer-Daniels-Midland Co., will visit Egypt.

“Emil A. Buelens, general sales manager for Central Soya’s chemurgy division, Chicago [Illinois], will visit Portugal and Spain.” A portrait photo shows each member of the team.

398. *Soybean Digest*. 1962. Grits and flakes... from the world of soy: Archer Daniels Midland Co. has a new trademark. April. p. 27.



• **Summary:**

“Archer Daniels Midland Co. has introduced a new trademark that will identify uniformly its hundreds of products.

“With

introduction of the new symbol (shown above) the company will call itself ADM.

“Victor P. Buell, ADM vice president and director of marketing, said the new trademark is part of a complete corporate identification program that will bring all of ADM’s diverse operations together under a single banner.”

399. Hayward, J.W. 1962. The increase in U.S. soybeans in recent years: Production and use of soybeans and products have increased more rapidly than any other U.S. industry. *Soybean Digest*. May. p. 17-26. [11 ref]

• **Summary:** Contents: Introduction: Remarkable increase in production since 1924, characteristics which have increased the popularity of U.S. soybeans, importance of mechanized production, organizations currently allied with U.S. soybean production. Soybean oil. Soy lecithin (food and industrial uses). Soybean meal. Soy protein: Soy flour and/or grits. Soy protein as concentrate and isolate (“soy protein concentrate and isolated soy protein”). Industrial use of soy protein products. Conclusions.

“The 70% protein product is called a soy protein concentrate. It is a semi-refined product with a protein content of approximately 70% to 75% on a moisture-free basis, and in a range of 66% to 68% protein on an ‘as is’

basis. This protein concentrate is prepared from special soy flakes by removal of water soluble nonprotein constituents, such as minerals and carbohydrates and certain factors responsible for the undesirable flavor and bitterness sometimes associated with the soy flour or grit products which have not been properly processed. In general, most of the protein present in the original flakes is left in the soy protein concentrate.

“Soy protein concentrate is recommended for use in cereal products, high protein breads, baked goods and prepared bakery mixes. It may be used as a binder in meat products, as a protein supplement in baby and geriatric foods and other dietary specialties. It is useful in adding desirable body and shelf life to caramel and fudge.” Soy protein concentrates sell for about \$0.22 per pound, and isolated soy proteins for about \$0.35 per pound. Photos show: (1) J.W. Hayward (portrait). (2) A ship bound for Puerto Rico being loaded with 30 tons of soybean oil from a tanker. The U.S. “is the world’s largest exporter of fats and oils.” (3) A combine, coming toward the viewer, harvesting soybeans. (4) A few of the food and non-food items that contain soybean products: Lecithin, cake mix, shortening, shampoo, margarine, floor enamel, dessert topping, lipstick, gasoline. (5) Swine in wooden pens at the A.E. Staley Mfg. Co. research center. Swine are a major consumer of soybean meal in the United States.

Tables show: (1) Approximate Cost of 1,000 calories from 3 sources: Soybean oil 2.2 cents. Wheat flour 3.2 cents. Rice 3.8 cents. (2) Typical fatty acid composition of soybean oil, hydrogenated soybean oil, and some other vegetable oils (cottonseed, corn, peanut, safflower, olive). (3) Approximate analysis of the natural or crude grades of lecithin: 35% soybean oil, 20% phosphatidyl choline, 20% phosphatidyl ethanolamine, 20% inositol phosphatide, 5% sugars, sterols, moisture, etc. (4) Estimated amount of soybean meal used in different types of livestock and poultry feeds. (5) Production of protein concentrates in the form of cake and meal, as from soybeans, cottonseed, milk products, tankage and meat scraps, linseed, etc.

400. Archer Daniels Midland Co. 1962. High protein bread: Cornell (McCay) bakery formula (Leaflet). Minneapolis, Minnesota. 2 p. Single sided. 28 cm. [1 ref]

• **Summary:** Describes how to make this bread on a commercial scale using the sponge method. First the sponge is made from flour, water, and yeast. Then the dough is made, containing the following ingredients: Flour (northwest) 25 lb. Water 25 lb. Yeast 12 oz. Yeast food 4 oz. Salt 2 lb, 4 oz. Sugar 2 lb, 4 oz. Nonfat dry milk solids 8 lb. Soy flour (full fat or defatted) 6 lb. Shortening 3 lb. Wheat germ 2 lb. Then gives mixing times, temperature set and time, baking procedure.

“Reproduced by permission of Dr. Clive M. McCay, Prof. of Nutrition in the New York State College of

Agriculture at Cornell University. Retyped 6/28/62.”  
Address: 733 Marquette Ave., Minneapolis 40, Minnesota.  
Phone: FEderal 3-2122.

401. **Product Name:** Ardex 700 (Soy Protein Concentrate).  
**Manufacturer's Name:** Archer Daniels Midland Co.  
**Manufacturer's Address:** 733 Marquette Ave., Minneapolis 40, Minnesota. Phone: FEderal 3-2122.  
**Date of Introduction:** 1962 June.  
**New Product–Documentation:** ADM. 1962, Sept. *Annual report for the year ended June 30, 1962*. “A new soy protein [concentrate] product, Ardex 700, was introduced for supplementing dietary and specialty foods, as well as for protein fortification of a wide variety of baked goods, cereals, geriatric foods and meat products.”

402. USDA Northern Regional Research Laboratory. ed. 1962. *Proceedings of Conference on Soybean Products for Protein in Human Foods*. Peoria, Illinois. iii + 242 p. Held 13-15 Sept. 1961 at Northern Regional Research Laboratory, Peoria, Illinois. No index. 26 cm.

• **Summary:** See next page. The earliest conference on this subject in the USA. A very important document, with many excellent articles by experts in their fields worldwide.

Contents: Introductory remarks. Session I: Nutritional deficiency problems in developing areas of the world. II: World marketing of soybeans and soybean products. III: Research and development on soybean foods. IV: Nutritional and biological studies. V: Processing and feeding value of fluid and dry soy milks. VI: Problems involved in increasing world-wide use of soybean products as foods—panel discussion. VII: Committee on quality and processing guide for edible soy flour and grits. VIII: Summary of conference. List of attendance. Most of the 106 attendees are PhDs or leaders in agriculture, business, government, or scientific research. The complete list follows:

Altschul, A. M. Southern Utilization Research and Development Division, ARS, USDA, New Orleans, Louisiana

Anderson, D. W., Jr. The Borden Company, 350 Madison Avenue, New York 17, New York

Andrews, J. S. General Mills, Inc., 9200 Wayzata Boulevard, Minneapolis 26, Minnesota

Anson, M. L. Consultant, 100 Eaton Square, London, S.W. 1, England

Bailey, E. M. A. E. Staley Manufacturing Company, Decatur, Illinois

Barnes, R. H. Cornell University, Ithaca, New York

Bean, L. H. Food for Peace, The White House, Washington, D. C.

Biddle, C. B. Biddle Farms, Remington, Indiana

Bitting, H. W. Agricultural Research Service, USDA, Washington 25, D. C.

Booth, A. N. Western Utilization Research and

Development Division, ARS, USDA, Albany, California  
Bowen, H. B. Spencer Kellogg and Sons, Inc., Decatur, Illinois

Brubaker, E. J. The Borden Company, 350 Madison Avenue, New York 17, New York

Buelens, Emil Central Soya Company, Inc., 1825 North Laramie, Chicago, Illinois

Carter, J. L. Regional Soybean Laboratory, USDA, Urbana, Illinois

Circle, S. J. Central Soya Company, Inc., 1825 North Laramie, Chicago 39, Illinois

Clayton, R. A. General Mills, Inc., 9200 Wayzata Boulevard, Minneapolis 26, Minnesota

Cowan, J. C. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Cox, W. B. Honeymead Products Co., Box 50, Mankato, Minnesota

Cravens, W. W. Central Soya Company, Inc., 1825 North Laramie, Chicago 39, Illinois

Darby, W. J. Vanderbilt University, Nashville 5, Tennessee

Dimler, R. J. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Diser, G. M. Archer-Daniels-Midland Company, 3100 38th Avenue South, Minneapolis 40, Minnesota

Eichenberger, W. R. A. E. Staley Manufacturing Company, Decatur, Illinois

Eldridge, A. C. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Eversole, Russell Cargill, Inc., 200 Grain Exchange, Minneapolis, Minnesota

Fischer, R. W. Soybean Council of America, Inc., Waterloo, Iowa

Fomon, S. J. University of Iowa Medical School, Iowa City, Iowa

Frampton, V. L. Southern Utilization Research and Development Division, ARS, USDA, New Orleans, Louisiana

Griffin, E. L., Jr. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Groves, M. L. Eastern Utilization Research and Development Division, ARS, USDA, Philadelphia, Pennsylvania

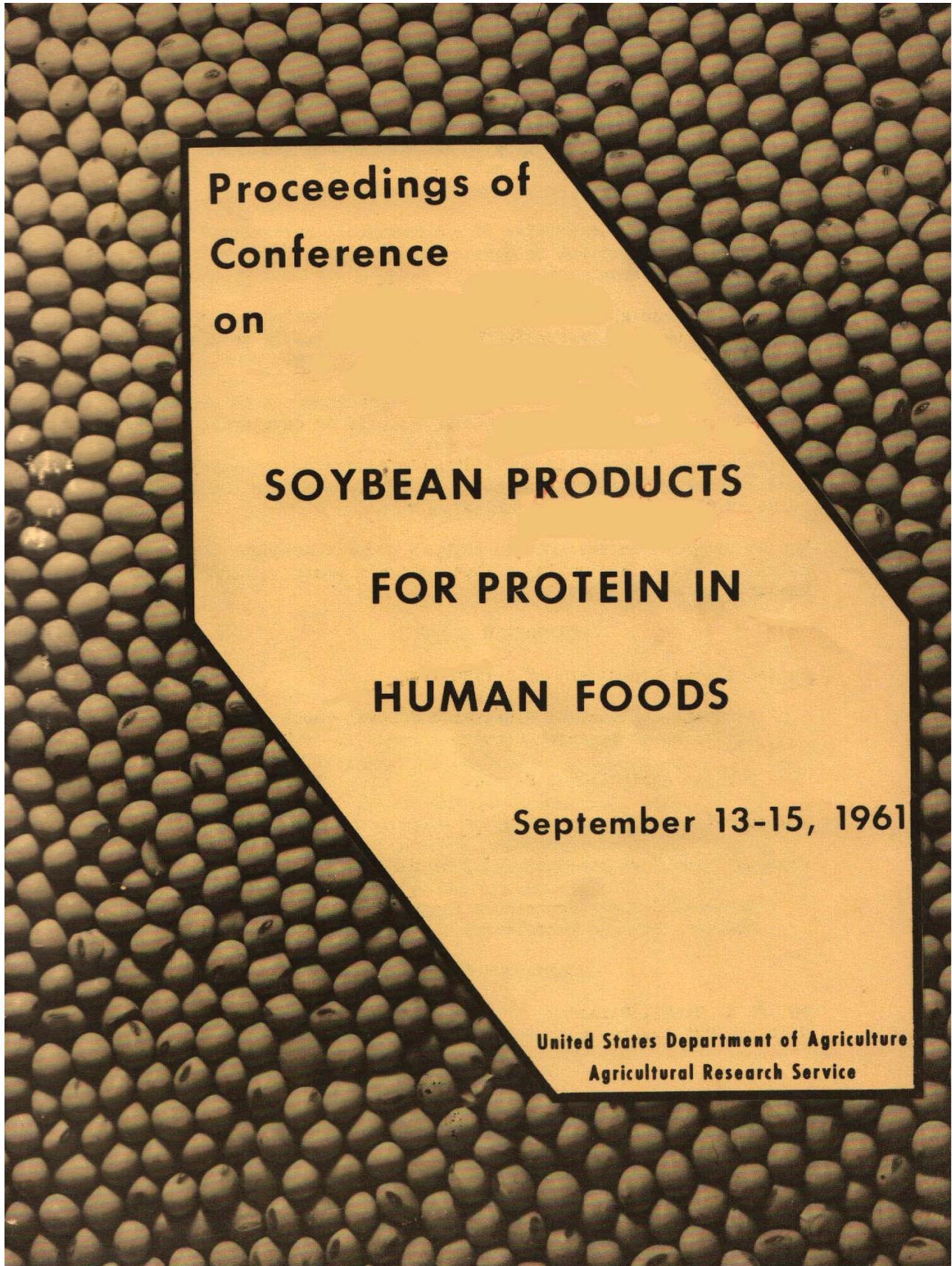
Gyorgy, Paul Philadelphia General Hospital, Pediatrics Department, Philadelphia 4, Pennsylvania

Hackler, L. R. New York State AES, Cornell University, Geneva, New York

Hafner, F. H. General Mills, Inc., 9200 Wayzata Boulevard, Minneapolis 26, Minnesota

Hand, D. B. New York State AES, Cornell University, Geneva, New York

Hayashi, Shizuka Japanese American Soybean Institute, Nikkatsu International Building, Room 410, No. 1, 1-Chomo Yurakucho, Chiyoda-Ku, Tokyo, Japan



- Hayward, J. W. Soybean Council of America, 304 Baker Building, Minneapolis 4, Minnesota
- Heidinger, H. C. Archer-Daniels-Midland Co., Minneapolis 40, Minnesota
- Hesseltine, C. W. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois
- Hilbert, G. E. Foreign Research and Technical Programs, ARS, USDA, Washington 25, D.C.
- Hildebrand, F. C. General Mills, Inc., 9200 Wayzata Boulevard, Minneapolis 26, Minnesota
- Horan, F. E. Archer-Daniels-Midland Company, Minneapolis 40, Minnesota
- Hougen, V. H. Foreign Marketing Branch, FAS [Foreign Agricultural Service], USDA, Washington 25, D. C.
- Houghtlin, R. G. National Soybean Processors Association, 3818 Board of Trade Building, Chicago 4, Illinois
- Hoover, S. R. Utilization Research and Development, ARS, USDA, Washington 25, D. C.
- Hubbard, J. E. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois
- Huge, W. E. Central Soya Company, Inc., 300 Fort Wayne Bank Building, Fort Wayne 2, Indiana
- Jackson, R. W. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois
- Johnson, D. W. Central Soya Company, Inc., 1825 North Laramie, Chicago 39, Illinois
- Judd, R. W. National Soybean Crop Improvement Council, 3818 Board of Trade Building, Chicago 4, Illinois
- Kemmerer, K. S. Mead Johnson Research Center, Evansville 21, Indiana
- Kirk, Dorsey Oilseeds and Peanut RMA Committee, Oblong, Illinois
- Kirk, L. D. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois
- Krober, O. A. Regional Soybean Laboratory, ARS, USDA, Urbana, Illinois
- Lemancik, J. F. Central Soya Company, Inc., 1825 North Laramie, Chicago 39, Illinois
- Lighter, Willard Central Soya Company, Inc., 1825 North Laramie, Chicago 39, Illinois
- Maclay, W. D. Utilization Research and Development, ARS, USDA, Washington 25, D. C.
- Maddy, K. H. Monsanto Chemical Co., St. Louis, Missouri
- Matchett, J. R. Utilization Research and Development, ARS, USDA, Washington 25, D. C.
- Mattil, K. F. Swift and Company, Union Stock Yards, Chicago 9, Illinois
- McGinnis, James Washington State University, Pullman, Washington
- McKinney, L. L. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois
- McVay, M. D. Cargill, Inc., 200 Grain Exchange, Minneapolis 15, Minnesota
- Melina, F. R. Catholic Relief Services, 451 Madison Avenue, New York 22, New York
- Melnychyn, Paul Fruit and Vegetable Laboratory, ARS, USDA, Pasadena, California
- Meyer, E. W. Central Soya Company, Inc., 1825 North Laramie, Chicago 39, Illinois
- Miller, D. L. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois
- Miller, H. W. International Nutrition Research Foundation, 11503 Pierce Boulevard, Arlington, California
- Milner, Max United Nations Children's Fund, United Nations, New York
- Mustakas, G. C. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois
- Ogilvy, W. S. Mead Johnson Research Center, Evansville 21, Indiana
- Oldham, Helen G. Human Nutrition Research Division, ARS, USDA, Washington 25, D. C.
- Pellett, Kent The Soybean Digest, Hudson, Iowa
- Pence, J. W. Western Utilization Research and Development Division, ARS, USDA, Albany, California
- Post, N. J. Food for Peace, 224 Executive Office Building, Washington 25, D. C.
- Rackis, J. J. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois
- Rhodes, E. E. A. E. Staley Manufacturing Company, Decatur, Illinois
- Rist, C. E. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois
- Roach, H. L. Soybean Council of America, Inc., 408 Marsh Place Building, Waterloo, Iowa
- Rolvaag, K. F. Lieutenant Governor, State of Minnesota, St. Paul, Minnesota
- Sabin, D. R. Food Conservation Division, United Nations Children's Fund, United Nations, New York
- Salisbury, G. W. University of Illinois, Urbana, Illinois
- Sarett, H. P. Mead Johnson Research Center, Evansville 21, Indiana
- Schaefer, W. C. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois.
- Scheiter, E. K. A.E. Staley Manufacturing Company, Decatur, Illinois
- Sebrell, W. H., Jr. Columbia University, Institute of Nutrition Sciences, 562 West 168th Street, New York 32, New York
- Sellner, J. J. Archer-Daniels-Midland Company, 700 Investors Building, Minneapolis, Minnesota
- Senti, F. R. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois
- Sherman, Norman State of Minnesota, St. Paul, Minnesota
- Sikes, W. W. Fats and Oils Division, FAS, USDA, Washington 25, D. C.

Smith, A. K. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Steinkraus, K. H. New York State AES, Cornell University, Geneva, New York

Stewart, George F. University of California, College of Agriculture, Davis, California

Strayer, G. M. American Soybean Association, Hudson, Iowa

Tawa, Andre

Soybean Council of America, U.A.R., 8 Dr Abdel Hamid Said Street, Cairo, Egypt

Teeter, H. M. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Tjossem, W. E. Ralston Purina Company, St. Louis 2, Missouri

Trotter, W. K. Northern Utilization Research and Development Division, ERS [USDA's Economic Research Service], USDA, Peoria, Illinois

Van Buren, J. P. New York State AES, Cornell University, Geneva, New York

van Veen, A. G. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy

Walker, Alan D. Spillers Limited, Station Road, Cambridge, England

Wall, J. S. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Wilcke, H. L. Ralston Purina Company, St. Louis 2, Missouri

Witham, W. C. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Wolf, W. J. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Wolff, I. A. Northern Utilization Research and Development Division, ARS, USDA, Peoria, Illinois

Woods, L.C. A.E. Staley Manufacturing Company, Decatur, Illinois. Address: Northern Regional Research Lab., Peoria, Illinois.

403. Budde, Walter M., Jr. Assignor to Archer-Daniels-Midland Co. (Hennepin County, Minnesota; a corporation of Delaware). 1962. Hydrophobic sheet material and method of making the same. *U.S. Patent* 3,043,717. July 10. 6 p. Application filed 17 Nov. 1958. [4 ref]

• **Summary:** Concerns waterproof polyvinyl alcohol films. "This invention relates to improved moisture resistant and essentially water and vapor proof laminations of flexible sheet materials and primarily polyvinyl alcohol film material having an organic film forming polyester chemically and intermolecularly bonded thereto, and includes the process of obtaining the same. More particularly, the invention relates to providing the art with improved water and moisture resistant polyvinyl alcohol films and the process of providing an in-situ polymerization therewith of a co-polymeric polyester

film former produced of selective epoxy and polyepoxide (or oxirane compounds) having internal oxirane groups and obtained by epoxidizing long chain polyhydric alcohol esters of fatty acids, fatty oils and derivatives thereof, which are obtained from vegetable, animal and marine sources, including mixtures thereof, under film forming reactive conditions with strong polybasic anhydride's.

"This application is a continuation in-part of my copending application for 'Protective Film Forming Composition and Resultant Films,' Serial No. 709,791 and further reference is made to the copending application for "Resins and Method of Making the Same," Serial No. 762,805, now US. Patent No. 2,993,920, in which I am co-inventor.

Note: Soy is mentioned 13 times in this patent, as "soybean oil," "epoxidized soybean oil having 6.3% oxirane oxygen" and "epoxy soybean oil material." Address: Minneapolis, Minnesota.

404. Hayward, J.W.; Diser, G.M. 1962. Proteine di soia come farina e semolino di soia, per il miglioramento dello standard di alimentazione in molte parti del mondo [Soy protein as soy flour and grits for improving dietary standards in many parts of the world]. *Rivista Italiana delle Sostanze Grasse* 39(7):353-61. [23 ref. Ita; eng; fre; ger; spa]

• **Summary:** Soybean flour and soybean grits, a source of inexpensive high quality protein, to supplement cereal foods. Address: Soybean Council of America; Research Dep., Archer Daniels Midland Co.

405. *Soybean Digest*. 1962. Minneapolis a processing center. July. p. 8.

• **Summary:** Three of America's leading soybean processing firms are headquartered in Minneapolis, Minnesota: Archer-Daniels-Midland Co., General Mills, and Cargill, Inc.

"ADM Operations: Archer Daniels Midland Co., one of the largest soybean processors, has its general offices at 733 Marquette Ave., Minneapolis.

"The company presently operates three processing plants—two at Decatur, Illinois, including the former Spencer Kellogg plant there which ADM leased last November, and the third at Mankato, Minnesota. A fourth processing plant is under construction at Fredonia, Kansas, in the heart of a fast-growing soybean producing area.

"ADM's first plant was opened in 1929 and 5 years later the company introduced the continuous solvent extraction process in this country. The company produces a full line of industrial and edible soy products, including oils, flours, meals, lecithin and isolated soy proteins.

"General Mills: General Mills' soybean processing activity is now concentrated chiefly at Belmond, Iowa, where a very efficient solvent extraction plant produces basic oils and meals as well as refined soybean oils, soybean lecithin and upgraded high protein food specialties. Management and

sales direction headquarters for oilseeds operations are in the specialty products division located at the new general office building of General Mills, Inc., 9200 Wayzata Boulevard, Minneapolis.

“For 34 years, General Mills has grown and prospered through increasing ability to serve well the people who make its business possible—its customers. Growing popularity of protein foods has increased the demand for soy proteins. New uses are now being developed for Toasted Soy Protein and Multi-Purpose Food which together provide one of General Mills most direct contributions to a better life for all mankind. Today, Multi-Purpose Food is distributed on ‘hunger fronts’ throughout the world and both of these General Mills products are used as components of survival kits for the nation’s Civil Defense program. MPF consists of golden, protein-rich soy grits combined in a scientific blend with essential vitamins and minerals.

“Cargill in Minneapolis: Minneapolis is headquarters for Cargill, Inc.’s vegetable oil processing, merchandising and research operations.

“Buying and selling of raw beans, oil and oil meal through the vegetable oil division’s 17 offices and 10 processing plants is directed from Cargill’s executive offices near suburban Wayzata and from offices in downtown Minneapolis.

“Also near Wayzata is the firm’s research center which houses analytical, biochemistry, organic chemistry, vehicle research and oil technical services laboratories.

“At nearby Savage, Minnesota, on the Minnesota river, is Port Cargill, a multi-transport terminal through which is handled soybeans and oil, grain and various commodities.

“Cargill’s solvent extraction soybean plant at Port Cargill has an annual crushing capacity of 5 million bushels and storage for 1.2-million bushels.”

Small portrait photos show: (1) James W. Stowell, manager of ADM’s vegetable oil sales. (2) M.D. “Pete” McVay, vice president in charge of Cargill’s vegetable oil division.

406. *Soybean Digest*. 1962. Soybean Council of America, Inc.: The Second Annual Staff Conference. July. p. 18-20.

• **Summary:** A large photo shows the entire staff of the Soybean Council of America at Waterloo, Iowa, June 4-15, standing in four rows. “Since the Council was formed a little over 5 years ago, business and market development has increased to where exports [of soybeans and products] amount to over \$1.5 billion per year from the United States. The International Operations Office of the Soybean Council is now operating in over 42 countries throughout the world. For each person is given the name, position, country, and city. These include: Andre Tawa of Egypt. Dominic Marcello and Dr. Fred Marti, international relations, Rome, Italy. Howard L. Roach, SBC president, Waterloo, Iowa. Dr. James W. Hayward, SBC director of nutrition, Minneapolis,

Minnesota. Dr. Carlos Giraldo, Columbia. Reginald Ion Wood, United Kingdom. Vasfi Hakman, Turkey.

Dr. Adolino DiGiorgio, Italy. Dr. Guillermo Ivanissevich, Peru. Alfred S. Kohl, Region III, Rome. R.W. “Robert” Fischer, assistant to the president, Waterloo. Paul D. Vermette, manager, SBC plans and evaluation div., Rome.

Rustom S. Patel, Pakistan. Maharajkumar Virendrasingh, India. Elvind Sondergaard, Denmark. Roger Campbell, budget and financial assistant.

Juan de Madariaga, France. Javier de Salas, region II, Rome. Gonzao Riviera, Spain. Frank W. McWalters, Rome. William A. Luykx, Belgium. Karl W. Fangauf, Germany. Volorus H. Hougen, FAS [USDA’s Foreign Agricultural Service], Washington, DC. Dr. Reynold P. Dahl, special consultant on the Common Market to SBC, Brussels, Belgium.

In addition, there is a full page of candid photos from the conference and a half page of photos of the SBC’s activities in Italy, Spain, England, Norway, and Pakistan.

407. Budde, Walter M. Assignor to Archer-Daniels-Midland Co. (Minneapolis, Minnesota; a corporation of Delaware). 1962. Protective film forming compositions and resultant films. *U.S. Patent* 3,050,480. Aug. 21. 7 p. Application filed 20 Jan. 1958. [7 ref]

• **Summary:** Concerns hard coatings / films from epoxidized drying oils. “This invention relates to dry, thin, tough, hard, adherent, resilient flexible oil film coatings prepared from polyepoxy fatty oil derived compounds of 12 or more carbon atoms in the fatty acid radical, compositions therefor, and their method of production. More particularly the invention relates to an improvement in the preparation of clear and pigmented protective coatings from polyepoxidized vegetable oils and polyepoxidized esters derived therefrom.”

Note: Soy is mentioned 30 times in this patent, as “epoxidized soybean oils,” “polyepoxidized soybean oil,” “soya bean oil,” “polymerized allyl soya fatty acid ester,” “medium oil soya acid modified alkyd resin,” “epoxy soybean oil,” “polyepoxy soybean oil,” “soybean acids,” “polyallyl epoxy soyate (prepared by the conventional peroxide-catalyzed polymerization of allyl epoxy soyate)” and “epoxidized glycol disoyate.” Address: Minneapolis, Minnesota.

408. Skidmore, Gerald. 1962. Use of soy protein in coating paper and board. *Paper Trade Journal* 146(35):32-34. Aug. 27. (Chem. Abst. 58:11569b). [3 ref]

• **Summary:** Soy protein is one of the most important coating binders. Discusses the range of viscosities, preparation of high solids coatings, protein-latex combinations, use of insolubilizing agents, etc. Address: Archer Daniels Midland Co., Cincinnati, Ohio.

409. *Soybean Digest*. 1962. ADM names Fredonia soybean

plant staff. Aug. p. 35.

• **Summary:** Don O. Fink will be production manager of ADM's new soybean processing plant in Fredonia, Kansas—according to Raymond E. Fiedler, manager of the ADM soybean division.

On Oct. 1961 ADM began operating Spencer Kellogg & Sons' former plant in Decatur, Illinois, under a lease.

410. Archer Daniels Midland Co. 1962. Annual report for the year ended June 30, 1962. General offices: Minneapolis, Minnesota. 14 p.

• **Summary:** Net sales and other operating income: \$245,896,523, up 15%. Net earnings: \$4,421,268, up 18%. Operating profit: \$3,626,528, up 19%. Employees: 3,685. Capital expenditures increased dramatically to \$24,771,820.

“In the Soybean Division, we closed an inefficient mill in Ohio, entered into a long-term lease for a mill in Decatur, Illinois, and started construction of a new production unit in Kansas.” The Soybean Division is part of the Agricultural Group. The company has soybean plants at Decatur, Illinois (2), Mankato, Minnesota, and Fredonia, Kansas. “A new soy protein [concentrate] product, Ardex 700, was introduced for supplementing dietary and specialty foods, as well as for protein fortification of a wide variety of baked goods, cereals, geriatric foods and meat products.” The company, whose report now sports a new 4-cornered logo, now writes its name without hyphens and describes itself as “Processors of agricultural and chemical products.” Address: Minneapolis, Minnesota.

411. Chambers, John A. 1962. Soya as a foodstuff. *Arkady Review (Manchester, England)* 39(3):39-41. Sept.

• **Summary:** Discusses briefly soy oil, defatted soya flour, American Multi-Purpose Food (50% protein, 1% fat, 31% carbohydrate), soy sauce, tempeh, and tofu. Address: Research Chemist, British Arkady Co. Ltd., Skerton Rd., Old Trafford, Manchester 16, England.

412. *Soybean Digest*. 1962. Dedicate ADM research center to T.L. Daniels. Nov. p. 26.

• **Summary:** At a ceremony on Oct. 31, the new Archer Daniels Midland Co. research center in suburban Bloomington near Minneapolis, Minnesota, was dedicated to Thomas L. Daniels, chairman of the board and former president. The center has 82,000 square feet of floor space.

413. Marzocchi, Alfred; Rammel, G.E.; Charon, C.W. Assignors to Owens-Corning Fiberglas Corp. (A corporation of Delaware). 1962. Finish for staple glass fibers and yarns manufactured thereof. *U.S. Patent* 3,066,383. Dec. 4. 3 p. Application filed 14 Feb. 1957. [10 ref]

• **Summary:** In the making of glass fibers, such as textile fabrics formed of strands, yarns, threads, etc., it is important to provide a coating which serves as a finish on the glass

fiber services to provide abrasion resistance and flexural strength while at the same time imparting an attractive appearance, colorability, hand feel, and good draping properties.

Example 1 uses 10% by weight of a soybean oil modified phthalic acid-glycol resin. Example 2 uses 20% by weight of a modified alkyd resin (Aroplaz 1400—made by Archer-Daniels Midland Co.). Address: 1. Pawtucket, Rhode Island; 2. North Attleboro, Massachusetts; 3. South Attleboro, Massachusetts.

414. Davis, P.N.; Norris, L.C.; Kratzer, F.H. 1962. Iron deficiency studies in chicks using treated isolated soybean protein diets. *J. of Nutrition* 78(4):445-53. Dec. [18 ref]

• **Summary:** The isolated soy protein used was ADM C-1 Assay Protein, Archer-Daniels-Midland Co., Cincinnati, Ohio.

“Reid et al. (1956) showed that molybdenum in isolated soybean protein was unavailable to the chick and that by use of this protein the dietary requirement was unfulfilled.” Address: Dep. of Poultry Husbandry, Univ. of California, Davis, CA.

415. *Soybean Digest*. 1962. New ADM research center. Dec. p. 24.

• **Summary:** “A promising area for Archer Daniels Midland Co. research is the fabrication of new foods from pure vegetable protein, said ADM vice president Dr. James C. Konen in an address at the dedication of ADM's new Thomas L. Daniels Research Center at Bloomington, Minnesota, Oct. 31.

“‘Ground beef’ that looks and tastes like the real thing but is made from the soybean already is being test marketed, Dr. Konen said. In the laboratory, ADM has gone even further and turned out ‘baked ham’ and ‘turkey breast’ from soy protein.”

A photo shows the new center which has more than 100 laboratories, offices, and conference rooms, and facilities for 260 scientists, engineers and technicians.

416. *Soybean Digest*. 1962. Francis Calvert joins Ralston Purina staff. Dec. p. 11.

• **Summary:** “Francis E. Calvert, nationally known chemist in the industrial protein field, has joined the staff of the special products research laboratories for the Ralston Purina Co. Mr. Calvert will headquarter in the company's research laboratories in St. Louis and will work with W.B. Brew, manager of the special products research laboratories. He will be concerned with research in the utilization and production of isolated soy protein for industrial and edible purposes. He will also engage in customer service work. He assumed his new duties Nov. 5.

“Since 1957, Mr. Calvert has been technical director, Evendale operations, for Archer Daniels Midland Co. at

Evendale, Ohio. Prior to that he was research director for the Drackett Co. in Cincinnati. His principal fields of research have been organic and polymer chemistry.”

417. **Product Name:** Granose Soya Beans in Brine.  
**Manufacturer’s Name:** Granose Foods Ltd.  
**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.  
**Date of Introduction:** 1962.  
**Ingredients:** Incl. soybeans, water, salt.  
**Wt/Vol., Packaging, Price:** Canned.  
**New Product–Documentation:** Letter from Granose. 1981. Lists products they are presently producing that contain soy. Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by Granose, was introduced in 1962. It has been discontinued.

418. Archer-Daniels-Midland Co. 1962. Your favorite recipes “nutritionally seasoned” with nature’s most perfect food, Hi Protein Soy. Minneapolis, Minnesota: ADM. Summarized in Soybean Digest, Feb. 1962, p. 26. \*  
**• Summary:** This booklet contains recipes using soy flour and grits. Address: Archer-Daniels Midland Co., 700 Investors Building, Minneapolis, Minnesota.

419. Hayward, James W. 1962. Progress report of committee on quality and processing guide for edible soy flour and soy grits. In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, IL: USDA NRRL. iii + 242 p. See p. 219-21.

**• Summary:** Committee members:

“Mr. L.E. Allen, UNICEF

“Dr. J.C. Cowan, Northern Utilization Research and Development Division

“Mr. G.M. Diser, Archer-Daniels-Midland Company

“Mr. F.H. Hafner, General Mills Inc.

“Dr. Max Milner, UNICEF

“Dr. A.K. Smith, Northern Utilization Research and Development Division

“Mr. R.L. Terrill, Spencer Kellogg and Sons

“This project was initiated back in August of 1960 by the Minneapolis office of the Soybean Council of America at the request of Dr. Max Milner, Senior Food Technologist, Food Conservation Division, UNICEF, New York, N.Y. The purpose intended for this guide was to establish quality standards for soy flour and soy grits that could be followed in producing these soya products in quantity for possible use as a major dietary source of protein for young children and/or a major source of supplementary protein in cereal-base and other types of foods for children and adults. This guide has also had as its purpose the matter of acquainting various people identified with WHO / FAO / UNICEF-assisted programs with the identity and many virtues of the particular

soy flours and soy grits that are most likely to be used for the feeding programs as indicated.

“The first rough draft of this guide was issued and circulated to members of the Protein Products Committee (Soybean Council of America, Inc.) on July 11, 1961.

“This guide has now received initial clearance of the U.S. soy flour processors through the Protein Products Committee of our ‘Council,’ and it will be submitted presently in its corrected form to our Special Collaborative Committee which is identified with this project, as listed above.

“This ‘guide,’ still tentative as it now stands, contains the following three distinctive sections:

“1. General, with introduction, definitions, and types of soy flour and grits, descriptions and flow charts covering processing, composition, and recommended uses.

“2. Analytical Methods—source of official and tentative procedures for many routine and special determinations are cited and in several instances specific procedures are enclosed with the guide. These procedures cover determination of general composition and methods under ‘quality control,’ such as urease activity, water dispersible protein, protein bioassays with laboratory animals; sanitary analyses, including bacteriological procedures, procedure for acid-insoluble ash and procedure for detecting presence of possible insect and rodent contamination. This portion also deals with packaging aspects.

“3. This is a separate section containing product specifications for each type of say flour and/or soy grits which are considered to have application in these feeding programs.

“The soya products that are now covered by specifications are as follows:

“Full-fat soy flour (general purpose)

“Defatted soy flour (general purpose)

“Defatted soy flour (toasted)

“Defatted soy grits (general purpose)

“Defatted soy grits (toasted)

“Detailed information is supplied for each soya product, as mentioned, under the following categories:

“Definition

“Analyses, including particle size

“Special Considerations:

“I. Nutritional or Functional Aspects

“PDI (protein dispersible index)

“Urease Activity

“II. Sanitation Aspects

“Bacteriology—total bacterial plate count

“Acid-insoluble ash

“Insect and rodent contamination

“Physical Properties

“Color

“Odor

“Taste

“Texture

“Recommended Uses

“Discussion Following Hayward Report on Processing Guide

“Dr. Hilbert commented that one of the properties which appears to have been overlooked is storage life under specified conditions of temperature and time. He referred particularly to a case where canned food stored on the beaches in the sun in Egypt showed definite deterioration and created a very bad impression when it was fed to people and they became sick.

“Mr. Hafner commented that storage life of soy flour is unusually long, far more stable than milk products, even at 140° F. if kept sealed. In polyethylene bags there has been no deterioration up to 5 years if kept dry and free from rodents and insects. The University of Minnesota has a relative humidity study, reprints of which are available.

“In India after 7 weeks’ storage at 90°-104°F. at a relative humidity well over 75 percent there was a slight softening and loss of crispness of samples stored in open bowls protected only by refrigerator covers at night, but no deterioration. This applied to both extracted and full-fat flours if the lipase had been destroyed. Until a few months ago no stable full-fat flour was being sold. Now we have stable products.

“In paying tribute to Dr. Hayward and his committee, Dr. Milner indicated that the problem is half solved if it can be defined. This meeting and the Processing Guide have defined our problems and brought them into proper focus.” Address: Chairman, Director of Nutrition, Soybean Council of America, 304 Baker Building, Minneapolis 4, Minnesota.

420. *Mankato Free Press (Minnesota)*. 1963. 3 million gallons soybean oil spill when tank splits: Oil could clog pipes, pumps. Jan. 23. p. 1.

• **Summary:** A large photo shows that the soybean oil, which burst out of a tank at the Honeymead Products Co., had such force that it pitched one railroad car off its tracks onto the ice of the nearby Blue Earth river, and knocked another railroad car onto the river bank. The tidal wave of oil covered the ice on the river. The tank that burst is visible at right.

421. *Mankato Free Press (Minnesota)*. 1963. Street crews fight to clear sticky soybean oil ooze. Jan. 23. p. 1-2.

• **Summary:** A photo shows one car on Given street up to its hubcaps in soybean oil.

422. *Mankato Free Press (Minnesota)*. 1963. Hexane blast big concern, not the oil. Jan. 23. p. 1-2.

• **Summary:** The Mankato fire department rushed to guard against the possibility that oil from Honeymead’s ruptured tank might cause a fire or explosion at the company’s hexane processing plant.

423. *Mankato Free Press (Minnesota)*. 1963. Sea of oil isolates 4 in family. Jan. 23. p. 2.

• **Summary:** Four members of Mel Herman’s family were stranded in their dwelling at 416 Given st. when 3 million gallons of soybean oil burst Honeymead’s ruptured tank. Mr. Herman, who is employed as a trucker by Honeymead, was in Minneapolis on business at the time of the accident.

424. Swanson, Bob; Gravenstein, Ed. 1963. Loss could reach \$2 million. *Mankato Free Press (Minnesota)*. Jan. 23. p. 1-2.

• **Summary:** Honeymead’s huge steel tank ruptured at 9:10 a.m. in 20-below zero cold, injuring one man and flooding several blocks surrounding the company in southwest Mankato. The lost oil is valued at \$2.1 million, according to Lowell Andreas, executive vice president of Honeymead. He said the firm is adequately protected against the loss by insurance. All 65 of Honeymead’s employees are being used in the salvage and cleanup. Address: Staff writers.

425. *Mankato Free Press (Minnesota)*. 1963. Honeymead mop-up to take a week. Jan. 24. p. 1-2, 8.

• **Summary:** A large photo shows an aerial view of the Honeymead plant in Mankato. ‘X’ marks the spot where the huge steel tank, filled with 3 million gallons of soybean oil, stood before it burst. Snow is on the ground around the plant. More photos appear on page 8.

426. *Soybean Digest*. 1963. New ADM plant on stream. Jan. p. 26.

• **Summary:** A photo shows ADM’s new plant and elevators in Fredonia, Kansas. With a capacity of 6 million bushels a year, it is now “on stream,” producing crude soybean oil for both edible and industrial uses, and soybean meal. Production manager is Don O. Fink, who joined ADM in Fredonia in 1929.

Douglas Forsberg is merchandising manager for the Fredonia plant, and Elnathan S. Anderson and James W. Lindsay are the soybean traders in the plant’s merchandising operations.

427. *Chemurgic Digest*. 1963. Special board meeting in New York: Andreas and Corey head Chemurgic Council. Jan/Feb. p. 1.

• **Summary:** “One of the purposes of the meeting was to elect a Chairman of the Board, to replace Wheeler McMillen who had resigned... Dwayne Andreas formerly president of the Council since 1958 was elected Chairman of the Board. Mr. McMillen is to remain on the Board and to be a consultant.”

A photo shows a youthful Dwayne O. Andreas.

428. Archer Daniels Midland Co., Soybean Div. 1963. Look what ADM is doing with soybeans (Ad). *Soybean Digest*. March. p. 45.

• **Summary:** This full-page ad states: “ADM research with isolated proteins extracted from soybeans is producing many new or improved products for your use today... and tomorrow...”

“Your future products, whether they be foods or feeds, adhesives or additives, paints or papers... might be better made at lower cost through ADM’s processing and research with soybeans.” Address: Minneapolis 40, Minnesota.

429. *Mankato Free Press (Minnesota)*. 1963. Interior department studies effects of river oil pollution. April 21.

• **Summary:** Secretary of the Interior Stewart L. Udall said that his department, together with the Fish and Wildlife Service are making intensive efforts to pinpoint the immediate and long-term effects on wildlife from the [Honeyamead soybean oil] spill that has now polluted the Mississippi and Minnesota Rivers. That spill “has already killed 2,000 waterfowl, plus an undetermined number of fish, beavers, muskrats and other wildlife.” Udall said his department has an obligation “to protect fully the national interest in such cases of large-scale pollution.”

430. *Mankato Free Press (Minnesota)*. 1963. Oil film still on river here, say officials. April 21.

• **Summary:** A light film of soybean oil (from the rupture of a Honeyamead tank in January) is still floating on the “Minnesota river,” according to federal and state fish and game officials.

431. ADM (Archer Daniels Midland Co.), Soybean Div. 1963. Look what ADM is doing with soybeans (Ad). *Soybean Digest*. April. p. 33.

• **Summary:** A photo on the top two-thirds of the page shows many delicious-looking foods. The text on the bottom one-third states:

“ADM research with isolated proteins extracted from soybeans is producing many new or improved products for your use today—and tomorrow.

“Long one of America’s largest and most efficient processors of soybeans, ADM now boasts four plants strategically located for procurement and processing of premium soybean crops. Special shipping facilities assure economical, dependable delivery anywhere in the world. Your future products, whether they be foods or feeds, adhesives or additives, paints or papers... might be better made at lower cost through ADM’s processing and research with soybeans.

“Contact your nearest ADM office or agent—now located in every major U.S. city and in 40 foreign markets.”

Note: According to the *Soybean Blue Book*, 1964 (p. 109), Central Soya is the only maker of “Edible isolated proteins.” ADM is not mentioned as a maker anywhere. Address: Minneapolis 40, Minnesota.

432. *Mankato Free Press (Minnesota)*. 1963. Army engineers seek to solve oil problem: In Minnesota River. April.

• **Summary:** Army engineers and the Minnesota department of health are studying the pools of crude soybean oil moving downstream towards Minneapolis in the “Minnesota river” after a storage tank broke at Honeyamead Products Co. last January. A major concern is to prevent the oil from entering the Mississippi river south of Minneapolis. Honeyamead will have to bear all expenses involved.

433. *Mankato Free Press (Minnesota)*. 1963. Kato ‘highball’ starts upstream. April.

• **Summary:** “Soybean Oil on the Rocks,” Mankato’s most famous highball, heralded the arrival of spring today, reaching a point between St. Peter and Le Sueur. Huge golden flows of soybean oil started to move downstream in the “Minnesota river” as the ice began breaking up. The golden-to-orange oil was part of 3 million gallons that burst from a tank at Honeyamead Products Co. in Mankato on Jan. 23. From the “Blue Earth river” beside the plant, it flowed into the Minnesota river, and will proceed toward the Mississippi river unless stopped.

434. *Mankato Free Press (Minnesota)*. 1963. Guardsmen pulled one section of oil dam out into the river to connect it with another (Photo caption). April.

• **Summary:** This photo shows burlap bags, stretched between two steel cables. The cables, one 4 inches above the water and the other 18 inches below, are supported by empty oil drums. A motor boat is pulling the floating dam onto the Mississippi River two miles above Red Wing, Minnesota. Oil stopped by the bags will be scooped into boats, taken ashore, and burned. The oil [some of it from Honeyamead Products Co.] has killed an estimated 10,000 waterfowl.

435. *Soybean Digest*. 1963. April advertisers. April. p. 3.

• **Summary:** This is the earliest list of advertisers seen in *Soybean Digest*. They are list alphabetically.

“Aeroglide Corp

“Amchem Products, Inc.

“V.D. Anderson Co. (Inside front cover).

“Archer-Daniels-Midland Co.

“Barzen of Minneapolis, Inc.

“Chipman Chemical Co.

“Davenport Machine & Foundry Co.

“Day Dryer Co.

“Elanco Products Co. (Back cover).

“A.T. Ferrell & Co.

“French Oil Mill Machinery Co.

“Hart-Carter Mfg. Co.

“Jacob Hartz Seed Co.

“Humble Oil & Refining Co.

“Lauhoff Grain Co.

“National Tank Co.

“Phillips Petroleum Co. (Inside back cover).  
 “Ross Machine & Mill Supply, Inc.  
 “Screw Conveyor Corp.  
 “Simon-Carter Co.  
 “Universal, Inc.  
 “Urbana Laboratories  
 “U.S. Rubber Co.  
 “Weather Trends, Inc.  
 “K.I. Willis Corp.  
 “Woodson Tenent Laboratories.  
 “Woodson Tenent of New Orleans, Inc.”

436. Archer Daniels Midland Co. 1963. Annual report for the year ended June 30, 1963. 733 Marquette Ave., Minneapolis, Minnesota 55440. 20 p. 28 cm.

• **Summary:** Net sales and other operating income: \$271,285,056. Earnings before taxes: \$6,534,521. Net earnings: \$3,854,275. Current assets: \$85,799,752. Current liabilities: \$31,540,819.

On page 20 is a “Ten-year summary of financial and operating data.” 1963 showed a new upswing in all important financial numbers—except net earnings (profit) which fell from \$4.421 million in fiscal 1962 to \$3.854 million in fiscal 1963. Address: Minneapolis, Minnesota.

437. *Arkady Review (Manchester, England)*. 1963. HI-SOY in confectionery. 40(3):42-46. Sept.

• **Summary:** Hi-Soy, is a processed [full-fat soya] flour. Recipes are given for cake, general-purpose mix and pies.

438. Chambers, John A. 1963. Soya in nutritional foods. *Arkady Review (Manchester, England)* 40(3):47-50. Sept.

• **Summary:** Soybeans which are high in protein and low in carbohydrates lend themselves to both specialty diets (slimming foods) and to food for those suffering from milk allergies, coeliac disease [celiac] and phenyl ketonuria. A photo (p. 49) shows “Some specialty foods containing soya.” These include Metrecal [spelled Metrecal in the USA] powder and wafers (made by Mead Johnson), Ovaltine, Farley’s Gluten Free Biscuits, and Limmits (“The meal in a biscuit that helps you slim”). Address: BSc, Research Chemist, British Arkady Co., Ltd.

439. Adolphson, Lynn C. 1963. Le développement et l’emploi de la farine de soja dans l’alimentation humaine [The development and use of soybean flour in human nutrition]. *Revue Francaise des Corps Gras* 10(12):649-59. Dec. Presented at a conference on Le Soja et les Produits Derives, 2 Oct. 1963 in Paris. [7 ref. Fre]

• **Summary:** Includes composition, properties, and nutritive value. Address: Archer Daniels Midland Co., Minneapolis, Minnesota.

440. Anderson, Loyd V. 1963. The U.S. soybean story.

*Chemurgic Digest*. Nov/Dec. p. 3-4.

• **Summary:** “Soybean acreage was stimulated by the droughts of the 1930’s and by corn acreage allotments which made land available for beans... In 1929 a soybean laboratory was established in Ohio to conduct research aimed at the development of varieties high in oil and protein. The U.S. Regional Soybean Industrial Products Laboratory was located at Urbana, Illinois in 1936. It carried on industrial utilization research and, in cooperation with the experiment stations of the North Central states, it also conducted agronomic studies in the development of improved varieties.”

Soya Lecithin “has become almost the traditional example of Chemurgy whereby an agricultural by-product of little value is upgraded and is found to have value as the result of scientific investigation. Lecithin is nature’s wetting agent...” In pharmaceuticals, lecithin is a source of choline and inositol. “In the cosmetic industry, it is again a satisfactory and safe emulsifying agent. In soaps, it improves lather stability and represses alkalinity. In paint products, it acts as a wetting and dispersing agent and improves milling, paint leveling and brushing qualities. In rubber, it acts as an antioxidant and as a dispersing agent for the filler. As an additive to lubricating oils, it helps counteract bearing corrosion and otherwise lengthens the life of the product. In gasoline, it is an anticloud and anti-corrosive agent. It helps produce softer, silkier leather products.” Address: Honeymead Products Co., Mankato, Minnesota.

441. *Arkady Review (Manchester, England)*. 1963. Robert Whympier [obituary]. 40(4):58-59. Dec.

• **Summary:** “Robert Whympier was the man who spotted Arkady as a winner for British bread. Robert Kennedy Duncan, after whom Arkady is named, formulated Arkady as a completely new type of ingredient for bread in the U.S.A. but it is Robert Whympier who was mainly responsible for its introduction to Britain.

“Whympier was one of a small band of chemists in the food industry in Great Britain prior to World War I.”

“Mr. Whympier was one of the original directors of the British Arkady Co. Ltd. when it was formed in 1921 and remained on the Board until his death, i.e. for more than 40 years.

“The Arkady Review, which commenced publication in 1924, was Mr. Whympier’s idea and in its early years he was a frequent contributor.”

“Another activity which was a ‘must’ to a man of Mr. Whympier’s outlook was scientific research for better products for making better bread. With this end in view a laboratory and test bakery were included as an integral part of the first small Arkady factory and have remained a vital part of the Arkady Company’s activities ever since.

“It was at the instigation of Mr. Whympier that much research was devoted to the preparation of soya flour for

breadmaking. Soya flour of the processed type had been sold for some years in Great Britain but the special value of the enzyme-active flour which we now call Do-Soy was not appreciated by the baking trade until 1937 when we put it on the market. The usefulness of enzyme-active soya flour in bread is borne out by the estimate that 75% of the bread made in Great Britain to-day contains soya flour.”

“He retired to Italy several years ago and he died in Rome in October. He will be kindly remembered as an adventurous spirit always looking for progress.”

442. Chambers, J.A. 1963. Some thoughts on soya in cake coverings. *Arkady Review (Manchester, England)* 40(4):59-62. Dec.

• **Summary:** Hi-Soy is a full-fat soya flour. Note: The previous article states (p. 59) that an estimated 75% of the bread made in Great Britain today contains soya flour. Address: B.Sc., Research Chemist, British Arkady Co. Ltd., Skerton Rd., Old Trafford, Manchester 16, England.

443. **Product Name:** Hi-Soy (Full-Fat, Heat-Treated Soya Flour).

**Manufacturer's Name:** British Arkady Co. Ltd., Arkady Soya Mills.

**Manufacturer's Address:** Old Trafford, Manchester 16, England.

**Date of Introduction:** 1963.

**Ingredients:** Soybeans.

**Wt/Vol., Packaging, Price:** 25 kg multi-ply sacks with a protective moisture-proof layer.

**How Stored:** Shelf stable.

**Nutrition:** Protein 41.0%, oil 20.0%, phosphatides (lecithin) 2.0%, sugars 10%, other carbohydrates 13.7%, cellulose 2.3%, ash 4.5%, moisture 6.5%.

**New Product-Documentation:** *Arkady Review (Manchester, England)*. 1963. “HI-SOY’ in Confectionery.” 40(3):42-46. This is a processed soy flour. Recipes are given for cake, general-purpose mix, and pies; Ad in *Food Manufacture (London)*. 1967. Ingredient Survey. Jan. p. 13. “Would Mrs. Johnson connect high jinks with Hi-Soy?” This section bound after Jan. 1967 issue (Vol. 42).

Orr and Adair. 1967. Tropical Products Institute Report G-31. “The production of protein foods and concentrates from oilseeds.” p. 56. Hi-Soy is a full-fat soya flour containing 20% fat and 40% protein. Isabel James. 1972. *Vegetarian Cookery*. p. 78. Soya sausage roll filling uses Hi-soy soya flour.

Form filled out by Peter Fitch of British Arkady. 1983. He says Hi-Soy is a full-fat soya flour. It has no enzyme or urease activity. The particle size is 100 mesh. Soya Bluebook. 1986. p. 85. Now spelled “Hisoy.”

444. Chambers, J.A. 1964. The bleaching action of soya. *Arkady Review (Manchester, England)* 41(1):3-6. March.

• **Summary:** “An examination of the patent literature of 1930 reveals some of the very early work done in the Arkady laboratories to effect the natural bleaching of flour through the agencies of high speed mixing and enzyme-active soya flour. The relevant [British] patent numbers covering this work are B.P. 342,697; 343,193 and 343,677. Enzyme-active soya flour, or an aqueous extract of this flour, was added at a level of up to 2% of the wheat flour weight, to a dough made from bleached or unbleached flour. A dough so made was subjected to a fast mixing action which continuously exposed varying parts of the dough to the oxygen of the atmosphere. Oxygen was transferred to the wheat flour, via the soya flour, bringing about the necessary bleaching effect.” Address: B.Sc., Research Chemist, British Arkady Co. Ltd., Skerton Rd., Old Trafford, Manchester 16, England.

445. **Product Name:** Granogen (Powdered Soymilk for Adults).

**Manufacturer's Name:** Granose Foods Ltd. (Importer-Marketer). Made in the USA by Loma Linda Foods.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England. Phone: 0923-672281/2.

**Date of Introduction:** 1964 April.

**Ingredients:** Soya bean solids, corn syrup, soya oil, sugar, salt, lecithin, vitamins.

**Wt/Vol., Packaging, Price:** 1 lb can. Retails for 9 shillings 6 pence (4/64, England).

**How Stored:** Shelf stable.

**Nutrition:** Protein 22.5%, carbohydrate 46.8%, fat 22.6%, ash 4.2%, moisture 3.9%.

**New Product-Documentation:** *The British Vegetarian*. 1961. March/April. p. 93. “Soya milk for household use.” Granose Foods will soon be in a position to supply two varieties of spray-dried soya milk, Soyalac and Soyagen, made by one of their associated companies, Loma Linda Food Company in Arlington, California. Soyalac is specially prepared for infants, whereas Soyagen is for general use. A table compares the nutritional composition of the two products.

*The British Vegetarian*. 1964. March/April. “Granogen: Soya Bean Milk Now Available.” “Readers will be glad to know that a really delicious general purpose soya bean milk is now available in Britain and will shortly be on sale in Health Food Stores.” Made in America, Granose is imported and distributed to the trade by Granose Foods Ltd., Stanborough Park, Watford, Herts. Fortified with vitamin B-12, this fine white powder is sold in a 1-lb can for 9 shillings 6 pence.

Orr and Adair. 1967. Tropical Products Institute Report G-31. “The production of protein foods and concentrates from oilseeds.” p. 72. Soyalac is made in both liquid and powder form by Loma Linda Foods. The powder is imported into the U.K. by Granose Foods Ltd. and sold under their brand name of Granogen. A nutritional analysis is given.

Leah Leneman. 1971. *The British Vegetarian*. Jan/Feb. p. 6. "Plantmilk and sex!" The author (and many other people she knows) prefers the taste of Granogen to that of Plamil as an alternative to cow's milk. Granogen, however is not made in Britain.

Listing in *The Vegetarian Health Food Handbook* (UK). 1974. p. 155. "Granogen Soya Milk by Granose Health Foods Ltd." Note the new company name.

Manufacturer's catalog. 1980. April. "Soya milk for adults with added vitamins and minerals. Of great value to those with milk allergies." Purves. 1981. *Nutrition and Food Science*. Jan/Feb. p. 5-6.

Letter from Adrian Peck, production manager at Granose Foods. 1990. July 11. This product has always been imported as a powder. Granose has never sold a liquid Granogen. Before 1988 it was named Granogen and made in the USA by Loma Linda Foods. From 1988 on it was renamed Soyagen and made in West Germany by DE-VAU-GE.

446. Diser, G.M.; Hayward, J.W. 1964. Expanding overseas markets for U.S. soy protein products: The most serious need in the human diet is adequate levels of good quality protein. *Soybean Digest*. May. p. 16.

• **Summary:** "Based on a presentation made by Mr. Diser at the Annual Meeting of the American Association of Cereal Chemists in Minneapolis" [Minnesota].

"During the period Feb. 1 to March 21, 1962, the Soybean Council of America, Inc., in cooperation with the Foreign Agricultural Service of the U.S. Department of Agriculture, conducted a survey in 11 developing countries to determine the potential utilization of soy products as an aid in alleviating protein deficiencies in the diets of the people in these areas of the world. One of the fundamental purposes of this survey was to learn the dietary habits, levels and status of the people in these countries. Representatives of the soybean processing industry made the survey which covered the following countries: Burma, Egypt, Greece, Hong Kong, India, Iran, West Pakistan, Philippine Islands, Portugal, Spain and Turkey.

"The results of this survey showed that protein malnutrition, suffered by a major portion of the people in these countries as a result of inadequate food supplies, particularly a serious lack of protein foods, could be relieved by utilization of inexpensive oilseed protein products.

"Bread, a principal food in these countries, if properly fortified with soyflour or grits, offers the greatest opportunity for increasing protein in the diet. Soy-supplemented chapattis, pakoris, samosas, buns and various other local breads were readily acceptable because of improved palatability, appearance and storage quality. These breads frequently contained two to seven times the amount of soy flour or grits customarily used in the United States. Macaroni products, including noodles, and various native dishes, supplemented with these soy products, offer another means

of improving dietary protein intake. These foods, as well as beverages and soups based on soy protein, were evaluated by local food specialists and found to be acceptable in all countries. In most instances, lack of availability was the only factor preventing current use of soy products as a source of supplemental protein in the diet.

"Beverages and infant formulas, based on full-fat or defatted soy flour and nutritionally equivalent to cow's milk, were found to be desirable for improving the general health of infants and children as well as expectant and nursing mothers in most of the countries. Products which have been developed and tested for this purpose under the auspices of the Soybean Council of America are presently available so that an 8-ounce serving costs about 1¢.

"Distribution Channels: Relief agencies, military rationing, local government mass-feeding programs, and school lunch programs are immediately available as channels of distribution.

"Based on information collected by the members of the survey team, market development for edible soybean products would logically proceed as follows: (1) samples would be provided for large-scale evaluation, (2) methods of using protein products to improve the nutritional value of foods would be demonstrated to consumers, (3) technical assistance would be furnished to local authorities, (4) relief agencies would be encouraged to purchase and use U.S. soy products to meet protein nutrition problems, (5) locally acceptable products would be developed and sold to meet the demand created by relief agency distribution and other market development efforts, and (6) as a result, developing countries would gradually increase their purchases of U.S. soy protein products or would increase their purchases of soybeans on the open market to process locally into products which would be used in the manufacture of and/or included in native foods for domestic consumption.

"Present acceptance and available means of distribution indicate that a total of 25,000 tons of edible soy protein products could be adequately utilized per month in the 11 countries surveyed. It is within the present capacity of the soy processing industry to produce all the current market demands plus an additional 6,000 tons of soy flour and 10,500 tons of soy grits per month. Within 6 months presently existing plants could manufacture an additional 25,000 tons per month without sacrificing any of the present market requirements. The increased production would consume an additional 20 to 22 million bushels of soybeans annually.

"More recently, greater official recognition has been given to the need for a market development program on the dietary utilization of soy protein products. The Agency for Industrial Development is becoming more cognizant of the need for protein in nutrition. For example, Alliance for Progress sponsored a workshop in Lima, Peru, from April 29 through May 10, 1963, with participating agencies

including the government of Peru, the U.S. AID mission and personnel from the Latin American countries. The purpose of this workshop was to train administrators and managers of child feeding centers in connection with 'Operation Ninon.' A conference on the use of American foodstuffs to further the Alliance for Progress program was held in Quito, Ecuador, on May 12, 1963.

"It is readily apparent that a new concept is being formulated as to the type of foreign aid to be rendered in the future. This concept will undoubtedly include the furnishing of protein from all sources to feed the protein-hungry world.

"A joint intergovernmental committee has been formed to follow up on the utilization of soy protein in foreign aid programs. Pilot projects are being developed on the use of soy protein in various areas. Shipments of soy products have been made to Egypt, Greece, West Pakistan and other countries for large-scale evaluation in response to requests developed through the efforts of the members of the survey team. Institutes have been established in West Pakistan and experiments are being conducted on soy protein products, particularly in demonstrating their value as nutritional supplements for children. The objective in this country is to get these products introduced on a commercial basis.

"Usage in Colombia: Soy products are being promoted for bakery uses in Colombia through the Nutritional Institute and similar institutions. Isolated soy protein and soy flour are being studied as a means of improving the nutritional value of 'panela,' a sugar-based food product widely used in the diet of infants and children in Colombia. In fact, a satisfactory product combining soy flour and panela has been developed by the Colombian Institute of Technological Research and submitted for biological evaluation. The Soybean Council of America is cooperating with the Colombian armed forces in the evaluation of soy protein products. A large-scale study is presently under way in Peru in which the Council is cooperating with the armed forces to compare the nutritive value of soy flour, fish flour and other protein sources as represented by the native supplements.

"The soybean industry, through the Council, has donated sufficient soy grits for a research project to be conducted by the Agricultural Research Service, USDA, in cooperation with the University of Hong Kong. In this instance the soy grits will serve to provide a known amount of supplemental protein in cereal-containing foods in the diet of children in that area. The objective of this research is 'to study the effect on growth and nutritional status of children of increasing their dietary intake of selected nutrients and of replacing a significant part of the rice in the diet with wheat.'

"A very recent and most important development in this area of expanding markets is evidenced by the request from USDA for offers from the industry to sell 160,000 pounds of defatted soy grits to the Commodity Credit Corp. These grits will be donated for distribution overseas by voluntary relief agencies through a market development program to

be administered jointly by AID and the Foreign Agricultural Service, USDA. Evaluation of acceptance of this product in pilot child feeding projects, including school lunch programs, hospitals and orphanage centers, will be carried out in Bolivia, Nigeria, Turkey and the Philippine Islands. Each of these four countries will receive 40,000 pounds of grits for this study.

"The offices of the Soybean Council plan to continue their efforts to bring about revision of the official restrictions presently existing in many countries against the use of soy protein in meat and bread products and other foods" (Continued). Address: Soybean Council of America, Inc., Minneapolis, Minnesota.

447. Diser, G.M.; Hayward, J.W. 1964. Expanding overseas markets for U.S. soy protein products: The most serious need in the human diet is adequate levels of good quality protein (Continued—Document part II). *Soybean Digest*. May. p. 16. • **Summary:** (Continued): The Council will continue to provide information and technical data on the properties of soy flour and soy protein to governmental and various official agencies. Demonstrations and seminars are scheduled in cooperation with schools, hospitals, women's clubs, home economists' groups and other organizations at the consumer level in Belgium, Luxembourg, Denmark and the other Scandinavian countries, France, England and other areas. These projects will include discussions on soy protein products and their nutritional and functional advantages in foods and bakery products. Food fairs will also be held in certain of the countries served by the Council to disseminate such information at both the consumer and industry level. The use of soy flour in bread, baby foods, typical indigenous dishes and various specialty products will be demonstrated by representatives of the Council.

"Efforts will be vigorously continued in attempting to bring about reduction of duties and other taxes on the importation of soy protein products in the United Kingdom, Spain and other countries where tariff barriers have been imposed.

"Keep Close Contacts: Close contacts are being maintained with governmental and educational institutions in Italy in attempting to get soy approved as a food ingredient. The Council office in Rome is working very closely with the largest manufacturers of pasta. Attempts are also being made to improve the level of protein in Italian bread through the addition of soy flour. Licensing of industries for the manufacture and utilization of soy protein products is being promoted in Israel.

"U.S. defense agencies are authorized to purchase protein products for use by armed forces of friendly nations. UNICEF is very active in promoting the utilization of soy in the protein-deficient areas of the world. Church groups and other volunteer relief agencies are taking an active interest in soy as a potential source of supplemental protein for use

in their feeding programs. These are only a few examples of the type of work being carried on cooperatively by Foreign Agriculture Service and the Soybean Council of America in attempting to develop the utilization of soy protein in the various countries.

“Greatest Problem Hunger: As long as population growth continues to exceed levels of food production, hunger can be expected to be the world’s greatest problem. The most serious need in the human diet throughout the world is for balanced nutrition with adequate levels of good quality protein. Unfortunately, many of the distribution programs implemented to date have resulted in the shipment of surplus grains overseas with little or no regard for deficiencies in quantity and quality of protein in the food supplies of the various areas.

“Protein products from the soybean, providing an abundance of excellent quality protein at a greatly reduced cost per unit, could properly supplement the cereals which make up a large share of the diet and thus aid in alleviating protein malnutrition in the protein-deficient areas of the world. These products can be used directly in the human diet as a source of readily available protein in those areas where ability, facilities and land area are not available for the utilization of animals to convert feedstuffs into food.

“A tremendous potential exists for the utilization of U.S. soy protein products in protein-deficient countries. However, this market cannot be effectively expanded without a concurrent improvement in the stability of the administrative and economic status of the respective governments, together with a widespread educational program covering nutrition, sanitation and hygiene among those consumers whose need for a higher level of protein in their diet is greatest.

“While samples of soy protein products have already been supplied through the Council to several of the developing countries for evaluation, it will be some time in the future before a report of the results of these studies can be expected. Consequently, any program for employing these products in improving the nutritional balance of the diets in various areas of the world would be significantly expedited and greatly implemented if data resulting from the research and development studies recently recommended to USDA officials could be made available to those administering the program and providing the technical assistance so necessary for the optimum utilization of these protein products from the soybean.” Address: Soybean Council of America, Inc., Minneapolis, Minnesota.

448. Fitch, Coy D.; Harville, W.E.; Dinning, J.S.; Porter, F.S. 1964. Iron deficiency in monkeys fed diets containing soybean protein. *Proceedings of the Society for Experimental Biology and Medicine* 116(1):130-33. May. [11 ref]

• **Summary:** “Certain foods reduce iron absorption from the gastrointestinal tract. In comparison to many foods the iron of soybeans and of diets containing isolated soybean protein

has been found to be well absorbed.” The isolated soy protein used in this experiment was ADM C-1 Assay Protein, Archer-Daniels-Midland Co., Cincinnati, Ohio.

The results showed reduced gastrointestinal absorption of iron and iron deficiency anemia in monkeys receiving a diet containing this isolated soy protein. Address: Univ. of Arkansas School of Medicine, Little Rock.

449. *Chemical Week*. 1964. Ahead: Synthetics for the starving. New ways to turn inedible raw materials into protein vie for domestic and world uses. 95(8):79-80, 82, 84, 86. Aug. 22.

• **Summary:** Contents: Introduction. Formulated products. Fiber route [spinning soy protein]. Other soy work. How different protein sources rate (comparing the amino acid content of an Ideal, fish, beef, skim milk, soybean, peanut, cottonseed). Other soy work (ADM is working on an inexpensive extruded soy ingredient) [later to be called TVP]. (USDA’s Northern Regional Research Lab. has conducted extensive research on “developing edible forms of soybean protein, as have other food and agricultural manufacturers”). Peanuts and cottonseed. ‘Inedible’ food (slaughterhouse waste, trash fish and fish flour). Petroleum upgrader (petroleum is the newest source of edible protein). Synthetic diets.

A large photo at the top of the first page shows children standing with empty bowls and cups. The caption: “Broad research effort on new sources of protein promises new hope for hungry children.”

Four photos one page 80 have these 4 captions: “Abundant soybean crop, yields 90% protein powder, that can be spun into fiber, for making simulated meat.” Of course, no hungry person could afford such an expensive result of food science wizardry and Robert Boyer’s U.S. Patent 2,682,466.

450. Archer Daniels Midland Co. 1964. Annual report for the year ended June 30, 1964. 733 Marquette Ave., Minneapolis, Minnesota 55440. 18 p.

• **Summary:** Net sales and other operating income: \$291,713,674. Earnings before taxes: \$4,362,764. Net earnings: \$3,282,299. Current assets: \$86,527,677. Current liabilities: \$30,540,752.

On page 16 is a “Ten-year summary of financial and operating data.” 1964 showed a new upswing in all important financial numbers—except net earnings (profit), which has now fallen for three years in a row, from \$4.421 million in 1962 to \$3.854 million in 1963 to \$3.282 million in 1964. Bad news!

On page 3 is a photo of John H. Daniels, president, and Thomas L. Daniels, chairman of the board—standing side by side. Address: Minneapolis, Minnesota.

451. Allred, J.B.; Kratzer, F.H.; Porter, J.W.G. 1964. Some

factors affecting the *in vitro* binding of zinc by isolated soya-bean protein and by  $\alpha$ -casein. *British J. of Nutrition* 18(4):575-82. [10 ref]

• **Summary:** It is well established that soya-bean protein contains some compound that renders zinc in the food unavailable and increases the turkey's apparent requirement for it.

Summary: "5. The amount of Zn bound by isolated soya-bean proteins and by alpha-casein was relatively low at pH 4 but increased markedly as the pH was increased to 5.3.

"6. The amount of Zn bound by ADM assay protein and by alpha-casein increased markedly, particularly at pH values below 4.5, in the presence of sodium phytate.

"7. ADM assay protein from which part of the phytic acid had been removed bound less Zn than the original protein.

"8. The significance of these findings is discussed in relation to the availability of Zn in diets for chicks and turkey poults." Address: 1-2. Dep. of Poultry Husbandry, Univ. of California, Davis; 3. National Inst. for Research in Dairying, Shinfield, Reading, Berkshire, England.

452. McGovern, George S. 1964. War against want: America's Food for Peace program. New York, NY: Walker and Company. xix + 148 p. Forward by President Lyndon B. Johnson. Illust. No index. 21 cm.

• **Summary:** This good history and analysis of the U.S. Food for Peace Program (Public Law 480) is greatly weakened by lack of an index.

Contents: Prologue. Acknowledgments. 1. The challenge of hunger. 2. Tools for the attack. Serving the Food for Peace table. 4. Food: Instrument of economic development. 5. Alianza para el Progreso (Alliance for Progress, proposed by President Kennedy on 13 March 1961). 6. Food and the India way. 7. Freedom from hunger. 8. Victory in the war against want. Appendix I: The Food for Peace Program. Appendix II: A partial list of voluntary participants in the Food for Peace program.

The Food for Peace program began in 1954. Senator McGovern was born in 1922. On 16 Dec. 1960 President-elect Kennedy asked him to serve as director of a newly proposed White House Office of Food for Peace. In the opening hours of his administration, on 24 Jan. 1961, President Kennedy issued an Executive Order creating the Office of Food for Peace; Senator McGovern was its first director.

Chapter 2 includes a history of U.S. relief feeding programs, the work of Herbert Hoover, and the Lend Lease Act of March 1941 (in which the USA procured vast quantities of food for our fighting overseas Allies such as Britain and the USSR), and the Marshall Plan (which sent \$13,000 million in American resources into Western Europe over 4 years). But after the Korean Conflict (1950-1953) farm surpluses began to accumulate in America at the same

time there were chronic food shortages in many parts of the world. So in 1954 Congress enacted legislation designed to utilize U.S. food surpluses in less-developed countries. "This was the very important Agricultural Trade Development and Assistance Act of 1954, Public Law 480. Known around the world as 'PL 480' it was an ingenious combination of self-interest and idealism."

Title I of PL 480 consists of foreign currency sales. Title II is outright grants of food in times of emergency or disaster. Title III authorizes distribution abroad of surplus food by private voluntary agencies, such as CARE and many church-connected agencies. In 1959 a new provision was added to PL 480—the extension of long-term credit at low interest rates on dollar sales of surplus food and fiber. The total of U.S. food assistance since 1948 is over \$20,000 million.

Chapter 7, titled "Freedom from hunger," focuses on FAO (The Food and Agriculture Organization of the United Nations) and its forerunners. FAO was born out of the Hot Springs Conference held by forty-four nations at the Homestead Hotel, Hot Springs, Virginia, from May 18 to June 3, 1943. President Franklin D. Roosevelt issued an invitation to this conference at the peak of World War II, on 30 March 1943, to countries associated with the United States in the war, to discuss world problems of agriculture, nutrition and food. "This first World Food Congress established an interim commission with an office in Washington, D.C., which functioned until" FAO was formally established as an agency of the United Nations on 16 Oct. 1945 in Quebec, Canada, to assume the work of the International Agriculture Institute and is presently governed by the U.N. Conference of Member Nations. FAO's headquarters was transferred from Washington to Rome, Italy, in early 1951 (p. 101).

"In July 1960, FAO, with the approval and cooperation of the United Nations system, launched the five-year, worldwide Freedom from Hunger Campaign." The message of this campaign "to the more affluent nations has concentrated on arousing public awareness of the danger which global hunger and malnutrition pose to the peace and progress of mankind. It has also sought to encourage international cooperation in facing up to the solution of these problems."

"Every nation has been urged to establish a Citizens' Freedom from Hunger Foundation to raise funds for the campaign. In this way private individuals, women's clubs, religious groups, civic organizations, and commercial firms can participate through contributions of money or materials.

"The American Freedom from Hunger Foundation Campaign was named by President Kennedy on November 22, 1961, the day before Thanksgiving." A ceremony in the White House launched the U.S. phase of the campaign. Alvin Shapiro of Washington, DC, was the first head of the American Foundation (p. 103-04). A photo (facing p. 15) shows the people present at the launching of the FFH

Campaign in the Fish Room of the White House (left to right): Marian Anderson, Senator George McGovern, President John F. Kennedy, German Chancellor Konrad Adenauer, and Mrs. Woodrow Wilson.

“A highlight of the campaign was the World Food Congress in Washington, D.C., June 14-18, 1963, timed to commemorate the twentieth anniversary of the Hot Springs World Food Conference” [in Virginia]. President Kennedy opened the conference with a memorable speech (p. 106). The United States pledged \$40 million in commodities, as part of a program to reduce U.S. food surpluses and also feed the hungry (p. 108).

Note: In March 1979 The American Freedom from Hunger Foundation merged with the Meals for Millions Foundation to become the “Meals for Millions / Freedom from Hunger Foundation.”

The World Food Program was first established at the 1960 Food and Agricultural Organization (FAO) Conference, when George McGovern, director of the US Food for Peace Program, proposed establishing a multilateral food aid program. WFP was formally established in 1963 by the FAO and the United Nations General Assembly on a three-year experimental basis. In 1965, the program was extended to a continuing basis.

Chapter 8, “Victory in the war against want, begins: On 23 Sept. 1959 Soviet premier Nikita Khrushchev, at the start of his visit to the United States, visited the farm of Roswell Garst near the city of Coon Rapids, Iowa. He wanted to learn more about modern agriculture. In the Soviet Union nearly 50% of the entire labor force was involved in producing food, compared with only 8% in the United States. Yet the remaining 92% of Americans are better fed than is the Russian populace, and the USA has surplus food which it uses to feed the hungry overseas (p. 113-14).

“The great changes in American agriculture came at an accelerating pace after 1915 with the sharply increased demands for food of World War I serving as a catalyst. In the half century since then the American farm has been transformed. Every phase of the farm operation is heavily assisted by machinery. Rural electrification not only lights the farmhouse but runs everything from water pump to milking machine, hybrid seed, chemical fertilizer, pesticides, livestock feed supplements, soybean products, and a host of other developments, including the cooperative movement, have changed the face and form of rural America.”

In 1862, under Abraham Lincoln and during the Civil War, three historic acts “laid the institutional foundation of American agriculture: The Homestead Act, the Morrill Act, and the creation of the Department of Agriculture (p. 115-16).

In the last half of Chapter 8 McGovern suggests “a ten-point battle plan against hunger led by the American people, which I am convinced will end in victory.” These are largely McGovern’s opinions about how the Food for Peace program

could be improved and expanded. Four example, No. 4 is to “eliminate the political restrictions on our Food for Peace (FFP) program.” He advocates that surplus American food be sent to hungry people (especially children) living in Communist countries, such as the USSR, China, or Cuba.

Appendix I gives 4 pages of statistics about the FFP program, including a graph showing the dollar value of FFP shipments to 5 different regions of the world from 1955 to 1963. Shipments to Europe peaked in 1957 at \$850 million and decreased sharply thereafter. Shipments to the Near East and South Asia peaked in 1961 at \$700 million and have decreased since then but were still the largest in 1963.

Appendix II includes directories of: (1) The executive committee of the American Food for Peace Council. Many of the members of the Executive Committee are private citizens. Mr. Dwayne O. Andreas, an Executive Vice President, is from Farmers Union Grain Terminal Association (FUGTA). (2) The American Freedom From Hunger Foundation, Inc., divided into officers, executive committee, and board of trustees (incl. Dwayne Andreas). (3) American Council of Voluntary Agencies for Foreign Service, Inc. (4) United States trade groups cooperating in foreign market development (incl. Soybean Council of America, and American Soybean Association). Address: Senator, South Dakota.

453. Paulsen, Twila M.; Horan, F.E. 1965. Functional characteristics of edible soya flours. *Cereal Science Today* 10(1):14-17. Jan. [12 ref]

• **Summary:** Discusses the use of soya flours in baked goods. Address: T.L. Daniels Research Center, Archer-Daniels-Midland Co., Minneapolis, Minnesota.

454. *Soybean Digest*. 1965. [Dwayne O. Andreas named to advisory committee by President Johnson]. May. p. 47.

• **Summary:** Andreas, vice president of Farmers Union Grain Terminal Association (Minneapolis, Minnesota) has been “named by President Johnson as a member of a 14-man advisory committee to make on-the-ground evaluations of U.S. foreign aid programs and to recommend steps to improve them.”

455. Horan, F.E. 1965. Contribution of non-animal proteins and fats. *Soybean Digest*. Aug. p. 21-24. [11 ref]

• **Summary:** If we try to look 15 years into the future, to 1980, we will see that non-animal proteins and fats will probably have become increasingly important.

“At this stage of population development, the oilseed proteins can play an important role in giving a better nutritional balance to the diet. The most promising possibilities lie in the soybean, cottonseed and peanut. In fact, soybeans have been a staple in the Oriental diet for centuries.

“The soybean is truly one of the outstanding phenomena

TABLE 5. COMPARATIVE COSTS OF EDIBLE PROTEIN PRODUCTS

Protein product	\$/lb.	\$/Protein lb.
Beef protein -----	0.75	4.20
Egg albumin -----	0.75	0.85
Lactalbumin -----	0.65	0.82
Yeast -----	0.30	0.67
Casein -----	0.55	0.63
Milk solids -----	0.16	0.46
Isolated soy protein -----	0.35	0.40
Wheat gluten -----	0.30	0.38
70% protein soy flour ---	0.21	0.30
Wheat germ -----	0.08	0.27
50% protein soy flour ---	0.07	0.14

in the entire history of agriculture in the United States—it is well called the miracle crop of the 20th century. It is undoubtedly the fastest growing segment of American agriculture.

“Although soybeans were grown in the United States as early as 1804, they remained an agricultural curiosity and minor crop for over a century. In 1924—just 40 years ago—the total production of soybeans in the United States was less than 5 million bushels; last year the United States production was somewhat over 700 million bushels. Approximately 70% of this total was crushed to yield 5 billion pounds of oil and 11 million tons of meal. Approximately 98% of the meal is eventually consumed as animal feed.

“At present a relatively small amount of the meal is upgraded commercially into edible soy flour products, which contain 50% protein. A soy protein concentrate with 70% protein and a soy protein isolate containing 90% protein are also available. The nutritional values of soy protein compared to other types of proteins are given in table 4.

“A comparison of the basic cost of soy protein with other proteins is given in table 5. “Recognizing the nutritional value of the soybean protein in itself may be insufficient. The material still must be agreeable to the palate and must have certain aesthetic qualities to be accepted in many diets. Therefore, a challenge exists to change the forms of the base material in such a way as to build in flavor, texture and mouth-feel. “One approach to this problem has been the application of spinning technology, taken from the textile industry, using isolated soy protein to produce very fine proteinaceous filaments which can then be molded and fabricated into a variety of finished food shapes. Another development concerns the extrusion of soy flour products into forms which can be dried and stored, but later hydrated to give particles with textural characteristics.

“Whether these products should be considered as meat substitutes or supplements, or as entirely new forms of nutritious protein matter will perhaps ultimately be decided by the consumer—and we should have the answer by 1980.” Address: Manager, Agricultural Research Div., ADM, Minneapolis, Minnesota, MN.

456. Archer Daniels Midland Co. 1965. Annual report, fiscal 1965. 733 Marquette Ave., Minneapolis, Minnesota 55440. 18 p.

• **Summary:** Net sales and other operating income: \$323,223,044. Earnings before taxes: \$4,539,842. Net earnings: \$2,765,138. Current assets: \$117,190,381. Current liabilities: \$62,918,546. “At the annual meeting on November 5, 1964, Thomas L. Daniels retired from the Board of Directors and Executive Committee. Mr. Daniels had been Chairman of the Board since 1955 and was President of ADM from 1947 to 1958. Except for three periods of government service, he had been associated with the Company since 1914.”

On pages 14-15 is a “Ten-year summary of financial and operating data.” 1965 showed a new upswing in most important financial numbers, - including net sales and earnings before taxes. But not in net earnings (profit), which has now fallen for four years in a row, from \$4.421 million in 1962 to \$3.854 million in 1963 to \$3.282 million in 1964. \$2.765 million in 1965. Bad news again! Time to make some big changes. Address: Minneapolis, Minnesota.

457. National Soybean Processors Association. 1965. Year book, 1965-1966 (Association year). Chicago, Illinois. 63 p.

• **Summary:** On the cover (but not the title page) is written: “Year Book and Trading Rules, 1965-1966.” Contents:

Constitution and by-laws and code of ethics. Officers, directors and committees for 1965-66. Membership of the National Soybean Processors Association. Trading rules on soybean meal. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}, sampling of soybean meal {automatic sampler, probe sampler}). Trading rules on soybean oil. Definitions of grade and quality of export oils. Tentative soybean lecithin specifications. Appendix to trading rules on soybean oil: Uniform sales contract, grading soybean oil for color (N.S.P.A. tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses; soap stock, acidulated soap stock and tank bottoms (only method numbers listed).

The section titled “Officers, directors, and committees” (p. 12-15) states: President: Robert G. Houghtlin. Secretary: J.W. Moore. Treasurer: R.E. Fiedler. Executive Committee: L.W. Andreas, Chairman, Wilfred F. Carle, T.W. Bean, B.A. Townsend (term ending Sept. 1966). J.W. Moore, M.D. McVay, R.E. Fiedler, E.B. Copeland (term ending Sept. 1967). R.G. Houghtlin.

Board of Directors: Chairman of the board: L.W. Andreas. Vice chairman of the board: T.W. Bean. Immediate past chairman of the board: S.E. Cramer. (Term expiring Sept. 1966): R.A. Denman, Joe C. Givens, R.G. Golseth, Floyd E. Hiegel, H.D. Rissler, R.B. Williams. Term expiring Sept. 1967: T.J. Barlow, Elmer L. Buster, Elster B. Copeland, F.L. Morgan, H.R. Scroggs, B.A. Townsend. Term expiring Sept. 1968: Donald B. Walker -> Win Golden, Wilfred Carle, Arthur Frank, M.D. McVay, William King Self,

Harry E. Wiysel. General counsel: Raymond, Mayer, Jenner & Block, Chicago, Illinois. Washington counsel: Sellers, Conner & Cuneo, DC. Washington representative: George L. Prichard, DC. Managing director, National Soybean Crop Improvement Council: Robert W. Judd, Urbana, Illinois.

Standing committees: For each committee, the names of all members (with the chairman designated), with the company and company address of each are given—Traffic and transportation. Technical. Oil trading rules. Industrial oil. Lecithin. Meal trading rules. Uniform rules and standards for soybean meal. Crop improvement council. Soybean research council. Soybean grades and contracts. Safety and insurance. Regional: Illinois, Indiana, Ohio, Kentucky, and eastern Missouri; Iowa, Minnesota, Nebraska, the Dakotas, Kansas, and Western Missouri; Mississippi River Delta Sections.

The following organizations, and individuals are members of NSPA: Allied Mills, Inc., Chicago, Illinois; Taylorville, Illinois; Guntersville, Alabama. Archer-Daniels-Midland Co., Minneapolis, Minnesota; Decatur, Illinois; Mankato, Minnesota; Fredonia, Kansas; Bloomington, Illinois. Arkansas Grain Corp., Soybean Division, Stuttgart, Arkansas (Wilfred F. Carle); Helena, Arkansas (W.E. Higginbotham). Big 4 Co-op. Processing Assn., Sheldon, Iowa (Kenneth J. McQueen). Buckeye Cotton Oil Div. of, The Buckeye Cellulose Corp., Cincinnati Ohio (R.B. Williams); Little Rock, Arkansas; Augusta, Georgia; Memphis, Tennessee. Cargill, Inc., Minneapolis, Minnesota (M.D. McVay, Jay Haymaker); Chicago, Illinois (Robert Cournoyer); Cedar Rapids, Iowa (C.W. Bohlander); Des Moines, Iowa (W.J. Wheeler); Fort Dodge, Iowa (George J. Cox); Sioux City, Iowa (A.L. Peterson), Washington, Iowa (William R. Matson); Wichita, Kansas (Ralph S. Moore); Memphis, Tennessee (Philip St. Clair); Norfolk, Virginia (D.H. Leavenworth). Central Soya Co., Inc., Fort Wayne, Indiana (B.A. Townsend); Decatur, Indiana (T.H. Alwein); Indianapolis, Indiana (R.E. Syster); Chicago, Illinois (Willard C. Lighter); Gibson City, Illinois (George R. Walter); Belmond, Iowa (J.R. Wright); Bellevue, Ohio (Harry Stokely); Marion, Ohio (Leroy Rich); Chattanooga, Tennessee (Jack Rosenberger). Delphos Soya Products Co., Delphos, Ohio (Floyd E. Hiegel). Delta Cotton Oil and Fertilizer Co., Jackson, Mississippi (Alfred Jenkins). Farmers Grain Dealers Assn. of Iowa (Cooperative) Soybean Processing Division, Mason City, Iowa (H.D. Rissler). Farmers Union C.M.A. [CMA], St. Joseph, Missouri (Arthur E. Frank). Fremont Cake & Meal Co., Fremont, Nebraska (Harry E. Wiysel). Galesburg Soy Products Co., Galesburg, Illinois (Max Albert & Regi Simon -> Elnathan Anderson, Box 711). General Vegetable Oil Co., Fort Worth, Texas (J.D. Morton). Gooch Milling & Elevator Co., Lincoln, Nebraska (M.R. Eighmy). Grain Processing Corp., Muscatine, Iowa (G.A. Kent, F.J. Prochaska, H.P. Woodstra). Honeymead Products Co., Mankato, Minnesota (L.W. Andreas, W.B. Cox, J.I. Maslon, C.T. Mullan, L.K.

Rasmussen); Huegely Iowa Milling Co., Cedar Rapids, Iowa (Joe Sinaiko, Bob Scroggs, Les Liabo). Kansas Soya Products Co. (The), Emporia, Kansas (Elmer L. Buster). Lauhoff Grain Co., Danville, Illinois (Ralph G. Golseth, Loren R. Larrick, Laurie J. Slocum). Marshall Mills Co., Marshalltown, Iowa (J.B. Saccaro). Minnesota Linseed Oil Co., Minneapolis, Minnesota (R.J. Lindquist, Jr.). Mississippi Cottonseed Products Co., Jackson, Mississippi (H.E. Covington). Missouri Farmers Assn., Grain Div., Mexico, Missouri (Kermit F. Head). Owensboro Grain Co., Owensboro, Kentucky (William M. O'Bryan). Paymaster Oil Mill Co., Houston, Texas (T.J. Barlow, C.R. Bergstrom); Phoenix, Arizona (O.C. Harris); Jackson, Mississippi (John Bookhart). Perdue (A.W.) & Son, Salisbury, Maryland (Robert L. Brodey). Planters Industries, Inc., Rocky Mount, North Carolina (W.T. Melvin). Planters Manufacturing Co., Clarksdale, Mississippi (A.K. Shaifer). Quincy Soybean Products Co., Quincy, Illinois (Theodore W. Bean, John Franks). Ralston Purina Co., St. Louis, Missouri (Donald B. Walker, W.L. Golden); Kansas City, Missouri (A.V. Couch); Bloomington, Illinois (R.C. Witte); Decatur, Illinois (R.E. Baer); Lafayette, Indiana (A. Hardy); Iowa Falls, Iowa (W. Bower); Louisville, Kentucky (J. Gardner); Raleigh, North Carolina (J.L. Bumgardner); Memphis, Tennessee (J.K. Sartain). Riverside Oil Mill, Marks, Mississippi (William King Self). Sisketon, Missouri (P.B. Bartmess). Southern Cotton Oil Div., Hunt Foods and Industries, Inc., New Orleans, Louisiana (F.L. Morgan); Newport, Arkansas (Jerry Jeffrey); Macon, Georgia (M.S. Long); Greenville, Mississippi (M.D. Kolb); Goldsboro, North Carolina (W.W. Davis). Southern Soy Corp., Estill, South Carolina (R.A. Denman). Southern Soya Corp. of Cameron, Cameron, South Carolina (Charles Everett Bullard). Staley (A.E.) Manufacturing Co., Decatur, Illinois (J.W. Moore, E.C. Lane, H.E. Lents); Painesville, Ohio (D.J. Hopkins). Swift & Co., Chicago, Illinois (Scott E. Cramer, W.W. Moore). Townsends, Inc., Millsboro, Delaware (P.C. Townsend). Tri-County Co-op Soybean Assn., Dawson, Minnesota (Joe C. Givens). West Tennessee Soya Mill, Inc., Tiptonville, Tennessee (Tyler Terrett). Yazoo Valley Oil Mill, Inc., Greenwood, Mississippi (N.F. Howard).

Associate Members: American Feed Stores Home Organization, Inc., Minneapolis, Minnesota. Anderson Clayton & Co., Foods Div., Dallas, Texas. Armour & Co., Chicago, Illinois (Harry K. Bean [crossed out]). Capital City Products Co., Div. of Stokely-Van Camp, Inc., Columbus, Ohio. Cereales y Concentrados, Mexico City, Mexico (Francis Tovar [crossed out]). Colchester Processing Co., East St. Louis, Illinois [crossed out]. Cooperative Mills Inc., Baltimore, Maryland. Corn Products Co., New York City, New York (R.W. List). General Mills, Inc., Kankakee, Illinois (Gerald G. Wilson) [handwritten in]. Grasas Vegetales, S.A., Guadalajara, Jalisco, Mexico (Mr. Collighon) [handwritten in]. Greendale Soy Products, Inc.,

Kinmundy, Illinois (Elwin G. Ingram) [handwritten in]. Glidden Co. (The), Durkee Famous Foods, Div., Chicago, Illinois (Gerald J. Daleiden). Hartsville Oil Mill, Hartsville, South Carolina (Edgar H. Lawton, Jr.). Huegely Elevator Co., Nashville, Illinois (J.W. Huegely). HumKo Products—Div. of National Dairy Products Co., Memphis, Tennessee (Sam Cooper). Kraft Foods Div. of National Dairy Products Corp., Chicago, Illinois (G.M. Gibson). Lever Bros Co., New York City, New York. Maple Leaf Mills Ltd., Toronto, Ontario, Canada (W.G. Milliken) [handwritten in]. Nebraska Consolidated Mills Co., Omaha, Nebraska [crossed out]. Pacific Vegetable Oil Corp., San Francisco, California. Procter & Gamble Co. (The), Cincinnati, Ohio. Quaker Oats Co. (The), Chicago, Illinois. Spencer Kellogg Div. of Textron Inc., Buffalo, New York. Supersweet Foods Div., International Milling Co., Minneapolis, Minnesota. Valley Mills, Vicksburg, Mississippi. Wesson Div., Hunt Foods and Industries, Inc., Fullerton, California. Ralph Wells & Co., Monmouth, Illinois (Willis H. Wells). Address: 3818 Board of Trade Building, Chicago 4, Illinois.

458. *Soybean Digest*. 1965. ADM acquires processing plant in Galesburg, Illinois. Nov. p. 25.

• **Summary:** “Archer Daniels Midland Co. announced that it has purchased all outstanding stock of Galesburg Soy Products Co., Galesburg, Illinois.”

“The Galesburg plant, located in a major soybean production area, has a processing capacity of 4 million bushels of soybeans annually and 400,000 bushels of storage capacity. It normally employs about 28 persons.”

459. Archer Daniels Midland Co. 1965. If you’re in the agribusiness, look to ADM for a world of service (Ad). *Soybean Digest*. Dec. p. 32-33.

• **Summary:** This 2-page black-and-white ad begins: “ADM serves everyone who travels the road that leads from farm to market—including those whose markets lie abroad.

“ADM’s newest gateway to world-wide markets is the huge export terminal at Destrehan, Louisiana, a joint venture with Garnac Grain Company of New York. The 94 concrete storage bins of the terminal have a capacity of 2¼ million bushels...”

An illustration shows a large tanker loading grain at the terminal. Address: Minneapolis, Minnesota 55440.

460. *Soybean Digest*. 1966. ADM to expand facilities for food oil production. Feb. p. 57-58.

• **Summary:** The expansion will double ADM’s soybean oil refining facilities at its Decatur West plant in Illinois. A soybean oil hydrogenation plant will also be installed there—according to Erwin A. Olson, chairman of the board and executive vice president of ADM’s agricultural group.

Construction will begin immediately; production is scheduled within a year. The new ADM facilities will

process about 600,000 pounds or 10 tank cars a day of refined or hydrogenated soybean oil. The company’s other soybean plant there, Decatur East, presently makes refined oil. Address: Minneapolis, Minnesota 55440.

461. *Soybean Digest*. 1966. ADM will build new plant in Omaha area. Feb. p. 61.

• **Summary:** Archer Daniels Midland Co. will build a soybean processing plant in the Omaha, Nebraska, area. According to John H. Daniels, president of the Minneapolis-based agricultural company, the plant will be a large one, since soybean production in the Omaha area has nearly doubled in the past 4 years.

ADM presently operates soybean processing plants at Fredonia, Kansas; Mankato, Minnesota; Galesburg, Illinois; Bloomington, Illinois; and two plants in Decatur, Illinois.

462. **Product Name:** TVP Textured Vegetable Protein (Textured Soy Flour) [Meat Flavors, Nut Flavors, and Unflavored].

**Manufacturer’s Name:** Archer Daniels Midland Co.

**Manufacturer’s Address:** Decatur, Illinois.

**Date of Introduction:** 1966 April.

**Ingredients:** Defatted soybean meal.

**Wt/Vol., Packaging, Price:** Sold in bulk.

**How Stored:** Shelf stable.

**Nutrition:** Moisture 6%, protein 52%, fat 1%, ash 6%, crude fiber 3%, other carbohydrates 32%, calories 280/100 gm.

**New Product—Documentation:** Ziembra. 1966. Food Engineering. May. p. 82-93. “Let soy proteins work wonders for you.” “Archer Daniels Midland is currently researching with a patent-applied-for extrusion process. Product (about 50% protein) can be shaped into many fibrous, textured forms—chips, chunks, flakes, slabs, wafers, or puffs. But whole meat-resembling pieces can’t be formed.”

*Soybean Digest*. 1966. Dec. p. 14. “ADM Begins Production of New Protein Foods.” States that TVP is now being made in Decatur, Illinois.

ADM Annual Report. 1967. Page 5: “During the past year TVP moved from the development stage to commercial production. A plant to produce this new concept in nutritious high protein food was placed in operation at our Decatur, Illinois, soybean processing complex.”

*Soybean Digest Blue Book*. 1968. March. p. 112.

Company is now at 733 Marquette Ave., Minneapolis, Minnesota. *Soybean Digest*. 1968. May. p. 38. “Atkinson Pioneered Textured Protein.” Ad in *Soybean Digest*. 1969.

May. p. 9-12. “A fabulous new food: TVP. Dip in batter, saute, and see what you can do with it.” *Soybean Digest Blue Book*. 1969. p. 114. Company is now at 4666 Faries Parkway, Decatur, IL 62526. “TVP, via extrusion process, in meat flavors, nut flavors, and unflavored.”

William Atkinson. 1970. U.S. Patent 3,488,770.

Predicasts. 1974. World Manufactured Soybean Foods. p. 9. "Archer-Daniels-Midland (Decatur, Illinois), through its ADM Protein Specialty Division, has been the world's leading producer of soybean protein foods since 1965. Its 'TVP' extruded textured soy protein is used in meat patties, pizzas, chili, stews and a myriad of other prepared meat products." Main soy meat extender plants are in Decatur, Illinois and Fredonia, Kansas.

463. *Soybean Digest*. 1966. [Dwayne O.] Andreas to ADM board. April. p. 37.

• **Summary:** "Election of Dwayne O. Andreas, Minneapolis [Minnesota] businessman, to the board of directors and the executive committee of Archer Daniels Midland Co. was announced at the board's quarterly meeting. Mr. Andreas succeeds Walter G. Andrews, St. Paul, on the ADM board. Mr. Andrews, associated with ADM for 25 years, had submitted his resignation, saying he wishes to devote more time to his personal business enterprises. Mr. Andreas is chairman of the board of First Interoceanic Corp., a Minneapolis investment company. Until his resignation in early January he was executive vice president of the Farmers Union Grain Terminal Association, St. Paul."

Note: This is the earliest document seen (July 2020) concerning Dwayne Andreas or any of the Andreas brothers and ADM.

464. *Soybean Digest*. 1966. Three U.S. firms are processing [soybeans] in Spain. May. p. 51, 54.

• **Summary:** "The A.E. Staley Manufacturing Co. has announced that its new joint venture processing plant in Santander, Spain, will begin production in May... When fully operational it will have a daily processing capacity of more than 350 metric tons of soybeans. The joint venture company, Sociedad Iberica de Molturacion, S.A., known as SIMSA, is owned equally by Staley and Sonaco, S.A., a prominent Madrid commodities firm... The Spanish plant marks Staley's first overseas venture in soybean processing."

Cargill, Inc. of Minneapolis, Minnesota, and a group of Spanish investors have a processing plant in Tarragona, Spain. It has been operating at peak capacity (700 tons/day of soybeans) since Feb. 1965. It is "operated as an independent Spanish corporation and is know formally as Industrias de la Soja S.A. which shortens to Indusoja and is pronounced 'Indu-soya.'"

"Archer Daniels Midland Co.'s affiliate in Spain, Oleotecnica, S.A., produces soybean-based margarine at its plant in Castro-Urdiales. Oleotecnica refines soybean oil imported from the United States for its margarine. The plant also crushes some soybeans imported from the United States."

465. Ziemba, John V. 1966. Let soy proteins work wonders for you. *Food Engineering* 38(5):82-84, 87-90, 93. May.

• **Summary:** The subtitle reads: "With far better quality and functional properties, soy proteins are finding ever-increasing uses in foods. You can 'engineer' new foods or improve your current products—at more profit, too."

Contents: Introduction to soy proteins—flours, concentrates, and isolates. Soy flours and grits. Who's supplying what. Benefits in quality, cost. Values of soy concentrates. Varieties of concentrates. Highest protein: Isolates. Soy proteins added to egg albumen. Versatility of isolates. Foams and gels. Fiber technique emerges: Worthington's accomplishments ("First textured soy protein fiber product marketed as Worthington's frozen Fri-Chik—an extruded formulation simulating a fried portion of white chicken meat"), problems ahead. Texturizing in other ways.

"New process techniques have been 'engineered' into making soy proteins better so far as quality and function are concerned... Last year about 250 to 300 million lb of soy flours and grits went into formulating food products. About 7 million lb of concentrates and 9 million lb of isolates were used. Present estimates indicate that flours and grits are increasing at a 5% per year rate, concentrates and isolates at about 10% each." Who supplies what? Soy flours and grits: ADM, Central Soya, Crest Products, Staley. Soy protein concentrates: ADM, Central Soya, Crest, Griffith, Gunther Products, Ranell Labs., Swift & Co. Isolated Soy Proteins: Central Soya, Crest, Gunther, Ralston Purina. Spun isolate fibers: ADM, General Mills, Ralston Purina, Worthington Foods. Textured Soy Proteins (extruded grit-type): ADM, H.B. Taylor.

"Archer Daniels Midland is currently researching with a patent-applied-for extrusion process. Product (about 50% protein) can be shaped into many fibrous, textured forms—chips, chunks, flakes, slabs, wafers, or puffs. But whole meat-resembling pieces can't be formed.

"Company's selling product-development lots in various sizes, shapes and flavors. Customers are planning or test-marketing ADM's 'fabricated protein' in stews, chili, and casserole products. Potential market for chunky, ground or snack-type products is likely to be much greater than the one for simulated whole meats." Note: This is the earliest document seen (Sept. 2003) that mentions textured soy flour or grits produced by an extrusion process—later widely known by its ADM trademark as TVP.

"Worthington's simulated meats made from spun soy protein fibers (Fibrotein) come in cubes, slices, chips, granules, rolls, square logs, or other shapes and sizes. They are in fresh, frozen, or dehydrated forms" (p. 93).

Photos show: (1) Soy protein fibers, plus chunks and cubes made from fibers. The caption reads: "Simulated meats can be 'engineered' readily from soy protein fiber shown in the center of these General Mills products." At lower left, going clockwise: 'bacon' chips, 'beef' granules, 'chicken,' 'beef' chunks, 'ham,' and 'seafood.' (2) Many of Worthington Foods' packaged meatless foods made from

textured soy protein fiber; they are canned, frozen, smoked, diced, sliced, or formed into rolls or sausages. (3) Spun soy protein fiber coming out of a spinnerette head (in a glass beaker). (4) Joseph Rakosky operating an electrophoresis apparatus at USDA's Northern Regional Laboratory (NRRL, in Peoria, Illinois). (5) Edible soy protein foam on a meringue pie, developed by USDA at NRRL. (6) A.K. Smith watching Tokuji Watanabe making "tofu cake" by an improved process at NRRL. Address: Senior Assoc. Editor, Food Engineering magazine, Chicago.

466. *Time*. 1966. Commotion in the bean pit. 88:77-78. July 8.

• **Summary:** The soybean is now "the hottest item in the seething U.S. commodities market. Last week futures for soybeans, soybean oil and soybean meal set seasonal records after a month of wild trading." Prices tripled during the month.

"Introduced to the U.S. from Asia in 1804, the soybean did not become a significant agricultural product until World War II cut off normal U.S. imports of fats and oil. From a crop of 193 million bu. in 1945, output rose to 843.7 million bu., worth nearly \$2.5 billion last fall. Soybeans are the U.S.'s most valuable agricultural export, ranking ahead of wheat and corn..."

"Worthington Foods Inc. takes edible soybean fiber produced by Ralston Purina, turns it into meatless frankfurters, roast beef and fried chicken, sells them to Seventh-day Adventists and vegetarians. Archer-Daniels-Midland Co. is testing a soy beverage to be sold in powder form, and Central Soya has developed an ice cream-like frozen dessert made of soybeans.

"What interests researchers the most about the soybean is its high protein content (up to 50%), and this month Central Soya will begin mass production of Promine, an isolated soybean protein, at a new Chicago plant. Promine binds and emulsifies pulverized meats, such as sausages, meat loaf and bologna."

467. *Business Week*. 1966. Soybeans move up on the menu. July 23. p. 82, 84, 87.

• **Summary:** "General Mills, under its Betty Crocker Red Spoon trademark (A.D. Odell in charge), is test marketing the first of a series of projected foods spun out of a protein isolated from soy. Called Bac\*Os, it is designed as a condiment and looks and tastes like lean, crumbled, cooked bacon. Priced at \$0.69 for 3.25 ounces, the jar is equal to 1 lb of cooked bacon." Corn Products' (CPC) Best Foods Div. is marketing Skippy peanut butter containing the product. "Thomas J. Lipton, Inc., a Unilever subsidiary, recently launched four dried gourmet main dish meals including beef stroganoff and chicken la scala. Lipton has patented a process to use isolated soy protein (ISP) as a binder for dried meats... Ralston Purina has developed a series of spun soy

protein foods resembling ham, chicken, and turkey out of ISP. It is selling its spun ISP base, Edi-Pro, to Worthington Foods Inc. Worthington has developed its own line of chicken and ham-like products for sale to religious groups.

"Central Soya makes an isolated soy protein binder called Promine, which goes into sausage and other processed meats. Sales of the binder at \$0.35/lb—twice the cost of the binder it is replacing—are so promising that production will be doubled to 2.5 million lb monthly when a new plant opens in Chicago next month... In addition the company this fall hopes to start exporting a frozen soy dessert to tropical countries with no dairy industries." General Mills, Ralston, ADM, Central Soya, and Worthington combined spend some \$4 million annually on research. Half of this sum is going into basic research and half into product development. ADM recently shipped 3 million lb of a new protein rich soy beverage to Latin America and the East Asia under a USDA program.

468. *Galesburg Register-Mail (Galesburg, Illinois)*. 1966. Max Albert succumbs in New Jersey. Aug. 26. p. 22.

• **Summary:** Max Albert died on 25 Aug. 1966 (Thursday) in Trenton, New Jersey at 9:30 p.m. at the Mercy Hospital after a two-months illness. The retired founder of Galesburg Soy Products, he organized the company in 1938 in Galesburg, Illinois. The funeral will be on Sunday at Trenton, New Jersey, and burial will be at Roosevelt Cemetery in Pennsylvania.

Mr. Albert and his wife Anne maintained a residence in Galesburg at 1612 N. Cherry St. and also in Hollywood, Florida.

Max was born in 1893 in New York City. He was a graduate of the Carnegie Institute of Technology at Pittsburgh, Pennsylvania.

"He was one of the pioneer soybean processors, founding a milling company [Iowa Milling Co.] in Cedar Rapids, Iowa, before organizing Galesburg Soy Products in 1938. He remained with the firm until he retired last year. The company was sold to Archer Daniels Midland" [in Nov. 1965].

The Alberts were married in 1917 in Madison, Wisconsin. Max Albert is survived by his wife and two daughters: Mrs. Horace (Lois) Shaffer, 31 Richey Place, Trenton, New Jersey, and Mrs. Reginald (Eleanor) Simon of Armonk, New York. He also survived by nine grandchildren. A daughter, Betty, died three years ago.

At the family's request, memorials may be made to a charity of the contributor's choice.

Note: Max Albert died in Trenton, New Jersey, because he was visiting his daughter, Lois Shaffer, who lived there.

469. Archer Daniels Midland Co. 1966. "Jack" and the bean stalk (Ad). *Soybean Digest*. Aug. p. 27.

• **Summary:** This full-page black-and-white ad begins: "One

upon a time there were no soybean in America. Our country had to get along without an important source of 'jack' [slang, money].

"U.S. farmer's didn't plant 34.5 million acres of soybeans in the spring and harvest 843 million bushels in the fall."

"But that was Once Upon a Time. And times have changed. The soybean crop and its usefulness have grown miraculously. So has the 'jack.'"

Illustrations show: (1) A goofy \$5 bill. (2) A stylized soybean plant / bean stalk. Address: Soybean Div., Minneapolis, Minnesota 55440.

470. Bowen, William; Shook, Edgar. 1966. Why they call those soybeans "golden." *Fortune* 74:126-29, 186, 191. Aug. • **Summary:** Soybeans have become a \$2.5-billion crop in the U.S., a major U.S. export, and the basis of a hefty domestic processing industry. In the futures market, soybeans have outdistanced all other commodities in dollar volume of transactions. At Chicago's Board of Trade soybean futures are bought and sold in the largest of the seven commodity pits—the pit, the famous arena formerly occupied by the old-time champion, wheat...

"The U.S. produces about 70 percent of the world's soybeans, and is the only nation with a substantial surplus for export. The only other big producer of soybeans, Red China, consumes most of its crop at home..."

"Last fall's crop was four times as big as 1945's, and about 170 times as big as that first officially recorded crop in 1924..."

"Since the early 1950's, demand for meat, and hence for soybean meal, has grown faster in Western Europe and Japan than in the U.S., and as a result U.S. soybean exports have expanded at an average annual rate of 16 percent since 1953... In dollar earnings, soybeans and soybean products now rank as the U.S.'s No. 1 agricultural export..."

"In recent years margins have tended to be uncomfortably narrow...For a big, efficient crusher, the breakeven crushing margin comes to about 17 cents a bushel. During the past several years average industry-wide crushing margins... have tended to run considerably below that breakeven level..."

"Intense competition and meager margins have driven many companies out of soybean processing. The number of companies in the business has shrunk from about ninety in 1946 to sixty-five or so today. Some big companies have dropped out, including Spencer Kellogg and General Mills. The companies still in soybean processing include six giants, all headquartered in the Midwest. Among them they have something like 60 percent of the industry's total crushing capacity. The biggest are Central Soya Co. of Fort Wayne, Indiana, with a capacity of 84 million bushels a year, and Cargill, Inc., of Minneapolis [Minnesota]. Cargill claims to have about the same capacity as Central Soya. The other four

members of the Big Six all have capacities on the order of 50 million to 60 million bushels a year: Archer Daniels Midland Co. (Minneapolis), Ralston Purina Co. (St. Louis), Swift & Co. (Chicago), A.E. Staley Manufacturing Co. (Decatur, Illinois).

"These companies all have large interests apart from soybeans, Archer Daniels, Cargill, Ralston, and Staley in grains, and Swift in meats. Even Central Soya, despite its name, gets less than half its revenues from soybean processing; the company has spread out on a grand scale into other fields, including feed manufacturing and grain merchandising..."

"Soybean futures work like other commodity futures. The future bought or sold constitutes an enforceable contract to take delivery of, or deliver, a specified quantity at a specified price in a specified month at a specified place. But at any time prior to the delivery month the buyer or seller can cancel out the contract at will (though not always, of course, without loss), simply by taking an equal action in the opposite direction. The trader who bought sells, or the trader who sold buys, and, lo, everything washes out. The earlier and later transactions offset each other. Most futures contracts are offset in this way, prior to maturity; at the Board of Trade only 1 percent or so are settled by actual delivery of the commodities.

"Basically, the commodity-futures market enables holders of large inventories to hedge against inventory losses resulting from price declines."

Contains a detailed discussion of hedging and its complexities and uncertainties. "Hedging is more sophisticated than crushing."

471. Archer Daniels Midland Co. 1966. Annual report for the year ended June 30, 1966. Minneapolis, Minnesota.

• **Summary:** Net sales and other operating income: \$361,521,017. Earnings before taxes: \$7,877,783. Net earnings: \$4,945,464. Current assets: \$142,072,993. Current liabilities: \$84,591,173. "ADM enjoyed its best year since 1959. The outstanding factor was the comeback of the Agricultural Group."

"On February 14 Dwayne O. Andreas was elected to the ADM Board of Directors and Executive Committee. On the Board he succeeded Walter G. Andrews, who resigned after 25 years of association with the Company. Mr. Andreas brings to ADM international experience in the merchandising and processing of agricultural commodities."

A "Ten year summary of financial and operating data" shows a dramatic increase in net earnings from \$2.765 million in 1965 to \$4.945 million in 1966—more than doubling in one year.

Photos show: (1) The board of directors. (2) The executive committee. Both include Dwayne O. Andreas. Address: Minneapolis, Minnesota.

472. *Soybean Digest*. 1966. Honorary life members [American Soybean Assoc.]: D.W. McMillen and Dwayne O. Andreas. Sept. p. 6.

• **Summary:** “Dale W. McMillen, a pioneer in the soybean processing industry, demonstrated his belief in the future of the soybean by founding Central Soya at Decatur, Indiana, in the depression year of 1934 when he was 54 years of age.

“He believed that soybean meal could become an important ingredient in animal feeds, and the founding of Central Soya to process soybeans and manufacture Master Mix feeds was his way of putting his belief into action.

“Mr. McMillen was one of the first in the industry to take the major step in 1937 of converting from the expeller method of processing soybeans to the now universally accepted solvent extraction method of processing soybeans into meal and oil. For a company scarcely 3 years old, this was a courageous move.

“In the late thirties, soybean meal had so little standing in the feed industry that one of Mr. McMillen’s first jobs was that of making soybean meal respectable. Through cooperative work with agricultural colleges, utilizing nutrition conferences for veterinarians and livestock feeders, Mr. McMillen and his staff helped dispel false ideas about soybean meal and give soybean meal the place it deserved in the nation’s feedlots. Mr. McMillen’s personal salesmanship and his continuing emphasis on improving the product through technological advances in processing techniques also contributed significantly to building a market for soybean meal, and thus for the soybean itself.

“Now an active 86 years of age, Mr. McMillen has lived to see the soybean crop grow from 23 million bushels in 1934 to a figure approaching the 1-billion-bushel mark in 1966.

“Dwayne O. Andreas, of Excelsior, Minnesota, has had a lifelong association with the processing of soybeans. He believes he has been involved in planning, building, or actually operating about 30% of the soybean processing capacity of the nation at one time or another. Also, he has had a hand in the manufacture of almost every product made from soybeans.

“Mr. Andreas was born on a farm near Worthington, Minnesota, and spent his early years on the farm. During his school years he worked in the family country elevator and seed business at Lisbon, Iowa.

“From 1938 to 1945 he was principal executive officer of the family-owned company, Honeymead Products Co., which had soybean processing facilities at Cedar Rapids and Washington, Iowa.

“From 1946 to 1952 he was vice president of Cargill, Inc., with soybean processing plants in Chicago, Illinois; Fort Dodge, Iowa; Springfield, Illinois; Savage, Minnesota; and Memphis, Tennessee.

“From 1961-65, he was executive vice president of Farmers Union Grain Terminal Association, which owns a

processing plant [Honeymead] at Mankato, Minnesota.

“At present, Mr. Andreas is a member of the board of directors and the executive committee of Archer Daniels Midland Co., which has soybean processing plants at Bloomington, Galesburg and Decatur, Illinois; Fredonia, Kansas; and Mankato, Minnesota.

“Mr. Andreas is also chairman of the board of directors of First Interoceanic Corp., a privately owned investment company, Minneapolis; chairman of the executive committee, National City Bank of Minneapolis; and president of the Andreas Foundation, Minneapolis.”

Photos show D.W. McMillen and Dwayne O. Andreas.

473. *Mankato Free Press (Minnesota)*. 1966. ‘63 Mankato soybean tank collapse not caused by blast, court rules. Oct. 28.

• **Summary:** The Minnesota Supreme Court ruled today [to nobody’s surprise] that the rupture of a huge soybean oil storage tank at Honeymead Products Co. at Mankato in Jan. 1963 was not caused by an “explosion.” Sixty companies carried policies insuring Honeymead against “direct loss by... explosion.” Honeymead had other insurance, but with less coverage than under an explosion. The court turned down Honeymead’s contention that the jury should have been permitted to look at the insurance policies during the trial.

Experts at the trial blamed the tank collapse on the extremely cold weather, which caused welded steel plates to become brittle. Lowell Andreas, president of the company, was out of the country and could not be reached for comment.

474. Chambers, John A. 1966. What is soya? *Arkady Review (Manchester, England)* 43(4):54-59. Dec. [2 ref]

• **Summary:** Includes recipes for Madeira slab cake and chocolate slab. Address: Development Manager, British Arkady Co. Ltd., Skerton Rd., Old Trafford, Manchester 16, England.

475. Cohen, Maxim M. 1966. Seaport of Chicago—Gateway to the Midwest’s soybean lands. *Soybean Digest*. Dec. p. 15-16, 19-21, 23.

• **Summary:** The cover story of this issue of Soybean Digest is “Seaport of Chicago.” This story reads more like an advertisement than an article, although it does contain valuable information. The entire first page of the article is an aerial photo of the “Seaport of Chicago,” with those words written in red across the middle.

Contents: Introduction. Other facilities (on the Calumet River). International port. Calumet elevators. Bulk terminals. Access to all roads.

Photos show: (1) Chicago Harbor Lighthouse. (2) Portrait photo of Maxim M. Cohen. (3) General Mills Chicago installation with 2½-million-bushel Rialto elevator at left. The elevator supplies domestic and export demand.

(4) Cargill's 20-million-bushel elevator on the Calumet channel—largest on the Great Lakes. (5) Archer Daniels Midland Co.'s 4,800,000-bushel Calumet elevator. (6) Continental Grain Co.'s B elevator. Continental has three big elevators at Chicago, A, B, and C. All these elevators are domestic and export terminals, with facilities for receiving soybeans by rail, barge, and truck, and shipping out in rail cars, barges, and ships. Address: General Manager, Chicago Regional Port District.

476. Randolph, Chet. 1966. New vegetable protein foods are now available: International Protein Conference [at Peoria]. *Soybean Digest*. Dec. p. 9-10.

• **Summary:** "Over 250 people attended the International Conference on Soybean Protein Foods at Peoria, Illinois, Oct. 17-19. They came from many states, nine countries, and the United Nations.

"At a similar conference 5 years ago many questions were raised as to how we might meet the protein needs of the world and whether or not the necessary foods could be developed and marketed successfully. At this conference it became clear that scientists have developed the formulas and techniques and that foods are now available from vegetable protein sources. How to distribute or market the foods is not so clear.

"Orville G. Bentley, dean of the College of Agriculture at the University of Illinois, who opened the conference, referred to the soybean as the golden nugget of the Orient that is now recognized worldwide as the efficient producer of high-quality protein and oil. The United States produces 71% of the world soybean supply.

"The need for protein in the underdeveloped countries was clearly reestablished at the conference. Dr. Ricardo Bressani, of the division of agricultural and food chemistry in Guatemala, Dr. Fred T. Sai of the University of Ghana Medical School, and Dr. Kamaluddin Ahinad of the University of Dacca in East Pakistan all reported graphically the need for protein, especially for children and in particular those just weaned. In the underdeveloped areas the infant is taken from the mother's breast and abruptly placed on a starch gruel which may be made from corn, casava [cassava], or rice. At the very time when they need the greatest protection against childhood diseases they are given a strange gruel, in many cases with only half the protein requirements.

"Several men in the medical profession reported on experimental work proving that vegetable sources can supply the needed protein where milk is not available or is too high priced. Dr. George C. Graham of Baltimore City Hospitals [Maryland] reported on a detailed study of undernourished infants who responded to vegetable proteins. Dr. Po-Chao Huang of the Massachusetts Institute of Technology had returned to his native Formosa where he had an experiment with 57 babies that averaged 3 months of age. He compared

cow's milk, soy beverage, and some soy flour and rice formulas. In all cases he found that the growth rate, skin texture and smile of the babies were equal whether the protein was from vegetable or milk protein sources. He even had two sets of identical twins which added to the study.

"Sales of Incaparina: John W. Money with Quaker Oats Co., working in Colombia in South America, reported that Incaparina was beyond the experimental stage and they were actually selling it. This high-protein formula is supplying the protein needs of children in that area to the equivalent of 5 million glasses of milk a month. They have priced their product just below the second staple food, rice.

"We had reports of the many uses of soy flour and soy grits and beverages that can come in an almost infinite variety of forms. One type of soy flour is used in baked goods, another in doughnuts. Soy grits are widely used in dog food, with another type of soy flour finding increased use as a calf milk replacer. Different companies are prepared to sell soy fiber foods with flavors similar to those of fish, ham, chicken, or pizza. Dr. Arthur D. Odell of General Mills, Inc., reported on the techniques and sales of their meat-like products made from modified vegetable tissues. Such items as their bacon chips are on the market and beyond the research stage.

"Others reported on sales of the modified vegetable proteins to hotels and restaurants. This is the sophisticated type of food that goes with a suitable income. People enjoy it as a convenience item.

"We had a report on several formulations of very basic foods primarily for nutrition to sell at the lowest possible cost. General Mills, Archer Daniels Midland Co., Central Soya, and Ralston Purina Co. have highly specialized machinery and equipment for spinning the fibers or preparing the foods.

"Gus C. Mustakas of the Northern Regional Research Laboratory at Peoria, Ill., reported on his work to develop a simple technique that can be used in any village in India or Ghana. This involved soaking the soybeans in a sack, boiling on an open fire and running through a small hand grinder. He reported that with such simple equipment they could make 300 pounds a day to provide half the daily protein needs of 1,600 people.

"It was agreed that one of the big needs is for more know-how in marketing in many areas of the world where cultural, ethnic, and religious backgrounds and tastes vary so widely. Dale W. Johnson, executive vice president of Crest Products, Inc., and Hugh Robinson of Foreign Agricultural Service, Washington, D.C., among others, reported on the complexities of the problems that must be overcome, including the tariffs and government restrictions, as well as such things as the taste habits and advertising patterns in the many different countries.

"Dr. Sai told of Ghana farmers who were quite pleased with the new soybeans they were taught to raise. There

was a celebration at harvest time. But they will never raise soybeans again in that area. The reason is that it took so long to cook the soybeans that all of the fuel in that area was used up before the winter was over.

“Soybeans in India: Stories were told of planting soybeans in India. But at harvest time there was no place to sell them because of the lack of processing facilities. The University of Illinois indicated they will cooperate with India to use soybeans as a teaching tool, in which they are stressing the interdependence of the experiment stations, extension, and teaching. This is the basis of our Land Grant Colleges, but it is something new in other parts of the world. They feel that even if soybeans are not successful in India the teaching techniques will be worthwhile. They plan to approach the problem on a team basis, taking into account not only production but also processing, distribution, and food uses and tastes.

“Dr. Joseph J. Rackis of the Northern Laboratory and Dr. Frederic R. Steggerda of the University of Illinois reported considerable progress in overcoming the flavor and flatulence (gas) problems in soybeans.

“Dr. Edwin W. Meyer of Central Soya predicted that some day, when the volume is high enough, a 70%-protein product can be sold as low as 130 per pound. Some companies reported success in the products that will go through freezing and then heating, such as added chunks in frozen corn that is then heated for food for the table.

“Dr. Odell reported that two University of Iowa men, working with prisoners, found an excellent response in adult human volunteers who subsisted on a strictly vegetable source of protein. After 6 months they were in excellent health.

“Other nutrition studies by the Wisconsin Alumni Association, as well as those in Guatemala, indicate that enough is known now about soy protein so that it can be utilized as the sole source of protein, with no adverse effects on any species of animal on which it is tested. Dr. Odell indicated that it need not cost more than one-half low-quality hamburger per unit of protein. However, again soy foods in this country are expected to find their way into new markets mostly as convenience foods.

“Dr. Clifford W. Hesselstine of the Northern Laboratory reported a former worker is now in Indonesia supplying low-cost protein foods at cost to students and faculty at his university.

“Dr. Lester J. Teply of UNICEF reported that while the soybean is native to the Orient and has been known for centuries, it has not been generally substituted for milk, contrary to popular belief. That is why this is a new area. The familiarity of the Orientals with soybeans may make it easier to introduce soy beverage to provide children with needed protein after weaning. (Some soy milk has been available in the Orient due to the efforts of such men as Harry W. Miller and K.S. Lo.)

“Dr. George L. Mehren, Assistant Secretary of Agriculture, said if we can add protein to the rice, corn, and casava [cassava] already in the diet and get it to the children we can make a dent in the serious problems of malnutrition. He added his official voice to the call for immediate action.

“It was made clear at the conference that the need is there. Scientists have developed the foods and the techniques. There is no doubt now as to the direction we must take. The question now is how do we move in specific areas and how soon are we prepared to move.”

Across the top of the first page is a portrait photo of 7 of the conference speakers. Address: Field Director, American Soybean Assoc.

477. *Soybean Digest*. 1966. Lowell W. Andreas is named director of ADM. Dec. p. 38.

• **Summary:** “Archer Daniels Midland Co.’s shareholders increased the ADM board of directors to 11 members with the election of Lowell W. Andreas, Mankato, Minnesota, at the annual meeting recently. Mr. Andreas is manager of Honeymead Products and treasurer and a director of First Interoceanic Corp., Minneapolis investment company.” A small portrait photo shows Lowell Andreas. Reelected to the board was Dwayne O. Andreas, chairman of First Interoceanic Corp.

478. *Soybean Digest*. 1966. ADM begins production of new protein foods. Dec. p. 14.

• **Summary:** One of the new foods being manufactured at the company’s plant in Decatur, Illinois, is a textured vegetable protein product which ADM president John H. Daniels termed “truly an exciting development for ADM.” “Developed by ADM research, it has the texture of meat, it can be flavored to taste like meat, and it “chews” like meat,” he said. “This textured vegetable protein (TVP) can be used in any foods where meat in granular, chunk or strip form is an ingredient. Patents on our manufacturing process for this product have been applied for and we have a strong patent position.” ...

“Mr. Daniels said the new Decatur food plant also is producing three high-protein food products for the foreign feeding programs conducted by the U.S. government. These include a soy beverage, a corn-soy-dry-milk food and Ceplapro, a cereal protein product. He said the company expects this business to grow.”

Note: This is the earliest document seen (July 2020) that mentions “TVP” and that states it is now being made.

479. *Soybean Digest*. 1966. ADM will build soybean plant at Lincoln, Nebraska. Dec. p. 33.

• **Summary:** “Archer Daniels Midland Co., Minneapolis-based agricultural and chemical firm, announced that it will construct a major soybean processing plant in Havelock, Nebraska, a suburb of Lincoln” (instead of near Omaha,

Nebraska, as announced in Feb.) according to John H. Daniels, ADM president.

“The ADM plant will be on a 50-acre site at 78th St. and Thayer, purchased from the Lincoln Grain Co. ADM has also purchased Lincoln Grain’s 8-million-bushel elevator complex there.” Construction of the modern solvent extraction plant will begin immediately, with completion scheduled for Nov. 1967. It will be Nebraska’s largest soybean plant, employing about 55 workers and processing approximately 33,000 bushels or 1,000 tons of soybeans per day. Production manager will be Alan Colby, who has been manager of ADM’s plant at Mankato, Minnesota, for the past 10 years.

480. *Soybean Digest*. 1966. Calumet harbor and river improvement. Dec. p. 19.

• **Summary:** See next page. Lake Calumet is the largest body of water within the city of Chicago. This map shows Lake Calumet, the Calumet River, Calumet Harbor, and Lake Michigan.

On the map are shown 17 numbered terminals or elevators, including: (9) ADM’s Calumet Elevator. (10) Cargill Chicago Elevator. (11) Continental Elevator A. (12) Continental Elevator B. (17) Continental Elevator C.

481. Neufeld, Don F. ed. 1966. Seventh-day Adventist encyclopedia. Washington, DC: Review and Herald Publishing Assoc. xviii + 1452 p. Commentary Reference Series, Vol. 10.

• **Summary:** This indispensable reference work contains excellent basic information and short histories. Entries related to food, diet and health include: Preface. Abbreviations. Alimentos Granix, Sociedad Anónima (“Granix Foods”; Buenos Aires Health Food Co., Argentina). American Temperance Society. Battle Creek College—See Andrews University. Battle Creek Health Center—See Battle Creek Sanitarium. Battle Creek Sanitarium (Michigan). Boulder-Colorado Sanitarium—See Boulder Memorial Hospital (est. 1896) and its health food factory (1897). Boulder Memorial Hospital. Cedar Lake Academy (founded 1898), Copenhagen Food Company (Denmark). De-Vau-Ge Gesundkostwerk GmbH (“DVG Health Foods Factory”; German Health Food Factory). Diet. Fábrica de Productos Superbom (Brazil Food Factory).

Food companies (Church-owned, making health foods of various kinds, especially vegetarian protein foods and whole-grain cereal products. SDA Food manufacture began as a department of the Battle Creek Sanitarium, which produced Granola and other cereals and wafers for the patients. Sales were a by-product of diet therapy, as patients ordered foods for their own use after leaving the institution. Thus originated the Battle Creek Sanitarium Health Food Co.).

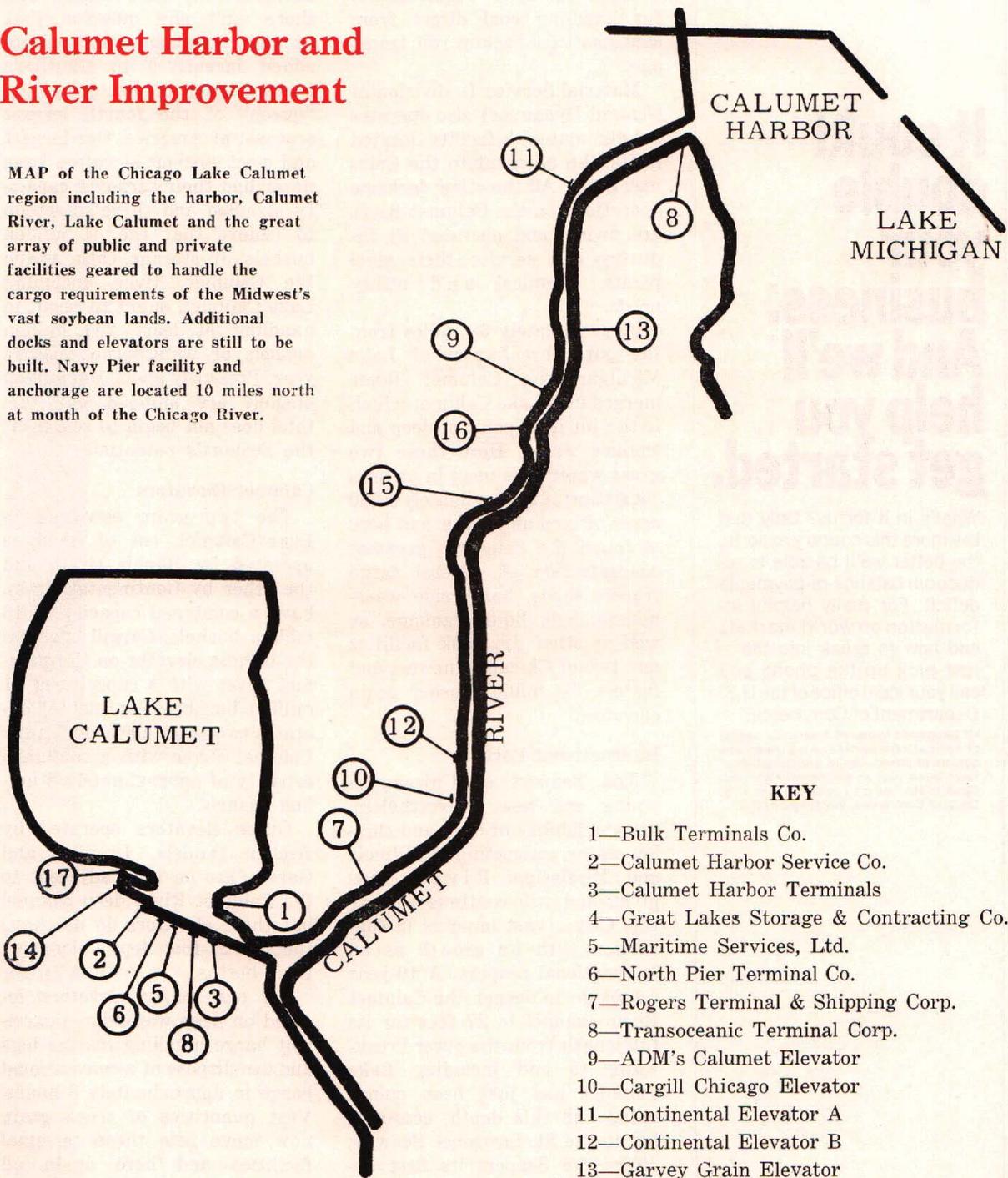
*Good Health* (magazine). Graham, Sylvester.

Granose Foods Ltd., (began as The London Health Food Company importing foods from Dr. J.H. Kellogg. In 1899 a manufacturing company was formed under the name The International Health Association Limited, changed in 1926 to Granose Foods Ltd.). Boulder Memorial Hospital. Health and Temperance Missionary School. Health education—See Health evangelism. Health evangelism. Health food manufacture—See Food companies. Health journals (the first was *The Health Reformer*). Health principles. Health reform—See Diet; Health evangelism; Health principles; Medical work. Health Reform Institute—See Battle Creek Sanitarium. India—Medical Work—Sanitarium Health Food Co. Instituto Adventista del Uruguay (Uruguay Academy, Productos Frutigran). International Health and Temperance Association—See American Temperance Society. International Health Association Limited—See Granose Foods Ltd. International Nutrition Research Foundation. International Temperance Association. Kellogg, John Harvey (1852-1943; M.D.). Kellogg, John Preston (1807-1881). Kellogg, Merritt Gardner (1832-1922). Kellogg, Will Keith (1860-1951; Cornflakes manufacturer). Loma Linda College of Evangelists—See Loma Linda University. Loma Linda Foods. Loma Linda University. Madison Institutions (incl. Madison College, Madison Foods, articles about Madison in periodicals). Medical work. National True Foods (Pty) Limited (Johannesburg, South Africa). Nebraska Sanitarium (1895). New England Memorial Hospital (1899). Nihon San-Iku Gakuin (Japan Missionary College, 1898, 1919, 1926, incl. Perry A. Weber). Noncombatancy (like conscientious objector, not bearing arms in wartime). PHAG (Produits Alimentaires Hygiéniques, Gland—Switzerland). Produits Alimentaires Hygiéniques, Gland—See PHAG. Prohibition (see also Temperance). Pur-Aliment (Food Factory; Clichy, France). St. Helena Sanitarium and Hospital (incl. health food factory, established in 1901). San-Iku Gakuin—See Nihon San-Iku Gakuin. Sanitarium principle (replaced by hospital principle). Sanitarium Health Food Company (Australia and New Zealand). Sanitariums and hospitals. Spicer, William Ambrose. Spicer Junior College. Spicer Memorial College. Stanborough College—See Stanborough School. Stanborough Press Limited (British Publishing House at Stanborough Park, Watford, Hertfordshire). Stanborough School. Stanborough Nursing and Maternity Home. Sunnysdale Academy (Centralia Missouri; Sunnysdale Foods started in 1946). Washington Adventist Hospital (1907). White, Ellen Gould (Harmon) (1827-1915). White, Ellen G., writings of. White, James Edson (1849-1928; 2nd son of James and Ellen White). White, James Springer (1821-1881). White, William Clarence (1854-1937, “Willie”).

Note: The *Advent Review and Sabbath Herald* of 23 Oct. 1860 states (p. 179, col. 2): “Resolved, that we take the name of Seventh-day Adventists.” Address: Washington, DC.

## Calumet Harbor and River Improvement

MAP of the Chicago Lake Calumet region including the harbor, Calumet River, Lake Calumet and the great array of public and private facilities geared to handle the cargo requirements of the Midwest's vast soybean lands. Additional docks and elevators are still to be built. Navy Pier facility and anchorage are located 10 miles north at mouth of the Chicago River.



### KEY

- 1—Bulk Terminals Co.
- 2—Calumet Harbor Service Co.
- 3—Calumet Harbor Terminals
- 4—Great Lakes Storage & Contracting Co.
- 5—Maritime Services, Ltd.
- 6—North Pier Terminal Co.
- 7—Rogers Terminal & Shipping Corp.
- 8—Transoceanic Terminal Corp.
- 9—ADM's Calumet Elevator
- 10—Cargill Chicago Elevator
- 11—Continental Elevator A
- 12—Continental Elevator B
- 13—Garvey Grain Elevator
- 14—Gateway Elevator
- 15—Dreyfus Corp. Irondale Elevator
- 16—Rialto Grain Elevator
- 17—Continental Elevator C

482. Neufeld, Don F.; et al. ed. 1966. Seventh-day Adventist encyclopedia: Granose Foods Limited. Washington, DC: Review and Herald Publishing Assoc. 1640 p. See p. 527-28. • **Summary:** “A health-food factory situated in Stanborough Park, Watford, Hertfordshire, England, manufacturing several kinds of nut foods and breakfast cereal biscuits, one of the latter being called Granose. In 1962 business volume [sales] totaled £250,000.

“The SDA [Seventh-day Adventist] health food work in Great Britain was begun by a group of laymen who, under the name The London Health Food Company, purchased health foods from Dr. J.H. Kellogg, of Battle Creek, Michigan, and distributed them to the public. After a few years SDA leaders in Great Britain sent J. Heide, a master baker, to Battle Creek to learn how to make the foods. In 1899 a manufacturing company was formed under the name The International Health Association Limited, changed in 1926 to Granose Foods Limited. The company purchased a flour mill in Salford, near Redhill, Surrey, to serve as the factory. Disused plant equipment obtained from Battle Creek, together with machinery purchased in Great Britain, formed the nucleus from which the present business has grown. W.T. Bartlett was the first manager and secretary and A. Rodd was the first factory superintendent.

“Before electricity was available, candles were often used, a practice that led to a fire that burned the factory to the ground in [Aug.] 1900. Health foods were again temporarily imported from America, but gifts and loans from SDA’s re-established the company, in Birmingham.

“In 1907 all SDA institutions in England, including the food factory, were centralized at Stanborough Park, Watford. The factory has grown until in 1963 it had a floor space of approximately 25,000 square feet, and still further extensions were planned.

“Former managers included H. Osborne, J. Rigby, and George Adair. Joint managers in 1963 were George Norris and B. Goulstone.”

Note 1. This is the earliest document seen (June 2009) that mentions the “London Health Food Company” or that explains its work importing health foods from Dr. Kellogg in Battle Creek, Michigan, and “distributing them to the public.” Presumably the foods were sold.

Note 2. Concerning the term “Granose”: Richard W. Schwarz in his book *John Harvey Kellogg, M.D. (1970)* discusses Granose Flakes on pages 119-20, and 209-10. The first flaked breakfast cereals were developed from wheat jointly by Dr. J.H. Kellogg and his brother Will, in about 1894. Dr. Kellogg named their first successful wheat flakes product Granose Flakes, and on 31 May 1894 he applied for a U.S. patent on “Flaked cereal and process for preparing same.” But in 1903 courts declared the doctor’s patent invalid. Will Kellogg developed the product into a great commercial success, in part by adding sugar to the malt and corn combination from which he made the flakes. “The

sugar greatly enhanced the cereal’s taste appeal, and, as a result, the Corn Flakes business was booming by late 1905.” The term “Granose” appears in 1904 in a “Chart of Food Elements” in the magazine *Good Health* (Jan. Insert after p. 48) published by John Harvey Kellogg in Battle Creek Michigan. It appears to be a grain-based breakfast cereal. Address: Washington, DC.

483. Kreuzer, Glenn. 1967. ADM plus s-o-y spell TVP, cash for Nebraska growers. *Lincoln Journal Star (Lincoln, Nebraska)*. Jan. 29. p. 53.

• **Summary:** “Can we feed an exploding world population that will double in 30 years...” ADM is building a new plant in Lincoln, Nebraska which will make a new Textured Vegetable Protein, or TVP.

TVP is in a granular or dry state which does not require refrigeration. When hydrated, “it takes on the characteristics and nutritional qualities of meat.”

“It can be used in any food where meat in granular, chunk or strip form is an ingredient.”

“Market tests have already shown it to be an excellent food extender. For pizza it has exceeded expectations of its staunchest supporters.

There may be potential for use in countries where refrigeration is limited or non-existent. It is often in these countries where people want meat but are unable to afford it.

At its plant in Decatur, Illinois, ADM is also making high protein foods for foreign feeding programs conducted by the U.S. government [P.L. 480 or Food for Peace Program]. These foods include: (1) A soy beverage, which ADM technicians believe “is ideal for school feeding programs and as a diet supplement in food short nations.” (2) CSM or Corn-soya-milk. “The government has just placed its second order for 10.5 million pounds of CSM.” (3) Ceplapro—made from cornmeal, wheat flour, processed soy grits, nonfat dry milk, soy oil, and vitamin/mineral premix.

Two photos show: “Meat in sukiyaki and sausage on pizza? Wrong twice. It’s TVP, a meat substitute from soybeans in each case. Here’s how some Nebraska soybeans will end up as a result of new Archer Daniels Plant in Lincoln and processing in Decatur, Illinois.”

Note: This is the earliest document seen (Aug. 2020) that mentions Archer Daniels Midland and TVP in [www.newspapers.com](http://www.newspapers.com). Address: Farm Editor.

484. *Food Processing & Marketing*. 1967. Meat-textured protein in commercial production. Feb. p. 46.

• **Summary:** Textured vegetable protein (TVP) is now being produced commercially by Archer Daniels Midland Co. It can be used as an ingredient in any foods in which meat, in granular, chunk, or strip form is presently being used.

485. *Food Technology*. 1967. Soybean protein products new entry in market. 21(2):72. Feb. Cover story.

• **Summary:** “A specially-built plant of the Archer Daniels Midland Company (ADM–Minneapolis, Minnesota) is now in operation, producing new products from vegetable proteins for use in foods. The plant has been erected within the soybean processing complex of ADM at Decatur, Illinois. Textured vegetable protein products are among the first of a number of new foods to be produced at the plant.”

Photos show TVP used in a cheese loaf, a sukiyaki-style dish, a pizza topped with TVP instead of meat. Three basic forms of TVP are beef-flavored strips, chunks, and granules.

486. *Food Product Development*. 1967. Textured vegetable proteins offered in 4 flavors, many forms. 1(1):38. Feb/March.

• **Summary:** TVP is now available from Archer Daniels Midland Co. in chicken, ham, beef, or bacon flavors. The various forms include granules, chunks, strips, or chips. The products contain, on average, 50% protein, 5% moisture, 3% fiber, and 1% fat. They are generally used in recipes and formulations in place of meat.

487. *Journal Star (Peoria, Illinois)*. 1967. ADM sells Mapleton plant to Kentucky refining firm. April 20. p. B-15.

• **Summary:** ADM has sold its entire chemical group, including its major chemical center at Mapleton, to Ashland Oil & Refining Co., Ashland, Kentucky. Construction of the Mapleton plant began in 1960 and in April 1962 it began producing industrial chemicals, mostly from vegetable and animal fats. John H. Daniels, president and CEO of ADM announced the sale, noting that sales from the chemical group accounted for less than 20% of ADM’s total sales of \$361.5 million in fiscal 1966. The main reason for the sale, he said, was to enable management to concentrate on the growth potential in the agricultural processing side of the company. ADM has been in the chemicals business since 1929.

488. Archer Daniels Midland Co. 1967. TVP–Textured vegetable protein: Technical Bulletin 1126 (Booklet). Minneapolis, Minnesota. 25 p. April. 28 cm. [1 ref]

• **Summary:** See next page. Contains technical information about TVP and many bulk recipes. Contents:

- General Information
- Analysis Chart
- Hydration Methods and General Preparation of TVP
- TVP Hydration Time Chart
- Using TVP In Meat Patties
- TVP Nutritional Data
- TVP Chiplet
- Salad Type Sandwich Filling
- TVP A’ La King
- TVP Snack Dip (Ham Flavor)
- TVP Salad (Chicken Flavor)
- Biscuit Roll (Beef Flavor)

- TVP Stroganoff
- Barbecue Sauce For Sloppy Joes
- Portion-Control Patties
- TVP Meat Loaf
- Vegetarian Patty
- Sour Cream Sauce On Rice
- Pizza Brick
- TVP Casserole–Sour Cream and Noodles
- Meatless Chili
- Cottage Cheese TVP Loaf
- Snack Dip

Page 1: TVP is an ADM Trademark. Address: 733 Marquette Ave., Minneapolis, Minnesota 55440.

489. Office of the Chief Economist, Resources and Transportation Studies Section, Ontario. 1967. Soybeans in Ontario: Production, utilization and prospects. Toronto, Ontario, Canada. 40 p. April 25. 36 cm. [10+ ref]

• **Summary:** Contents: 1. Soybeans and alternative sources of vegetable oil. 2. Soybeans and soybean products production, consumption and utilization. 3. Soybean varieties and techniques of production. 4. Economic aspects of soybean production. 5. Possibilities of increasing soybean acreage in Ontario. 6. Areas with potential for increased soybean production. 7. Possible effects on soybeans of increasing rapeseed utilization. 8. Conclusion.

Total soybean acreage in Ontario has increased from 154,973 in 1951 to 265,000 in 1965. The two regions of production are the Lake Erie Region (which produced 12.71% of the provincial total in 1965; the largest soybean producing county is Elgin) and the Lake St. Clair Region (which produced 86.38% of the provincial total; the largest producing counties were Kent [94,700 acres], Essex [85,500], and Lambton [48,700]).

“About 70-75% of total Canadian soybean supply is imported (almost entirely from the United States); approximately 80-90% of the supply is crushed domestically, the rest is exported mostly to the United Kingdom” (p. 7).

“The greater part of the crop is sold to the three crushing plants in Toronto (Victory Mills Ltd., Maple Leaf Mills Ltd., and Canadian Vegetable Oils Processing Ltd.). The balance is exported to the United Kingdom where it is accorded preferential tariff treatment... Ontario’s production is insufficient to meet the needs of Canadian processors, and large quantities [of soybeans] (65-70 per cent of their total requirements) are imported duty free from the United States” (p. 21-22).

“Conclusion: Ontario has a potential for increasing its soybean acreage, provided that (a) a gradual change in the pattern of crop production will be brought about (reduction of oats and mixed grain area); (b) research will provide higher yielding varieties especially for the area between the 2,500-2,700 heat unit lines; (c) reliable, cheap herbicides will be available; (d) large scale drainage and pasture

# TVP

TEXTURED VEGETABLE PROTEIN

TECHNICAL BULLETIN 1126



ARCHER DANIELS MIDLAND COMPANY 733 MARQUETTE AVENUE MINNEAPOLIS, MINNESOTA 55440

improvement programs will be carried out; (e) extension efforts will concentrate on disseminating knowledge on adequate methods of soybean growing.

“The striking success of the Corn-Plan launched by the Ontario Government and O.A.C. [Ontario Agricultural College, Univ. of Guelph] indicates that a ‘Soybean Plan’ might lead to similar results.” Address: Toronto, Ontario.

490. *Wall Street Journal*. 1967. Archer-Daniels-Midland says it sold chemical business for \$65 million. May 16. p. 3.

• **Summary:** Minneapolis [Minnesota]–ADM has sold its chemical business to Ashland Oil & Refining Co.

During the current fiscal year, ADM spending will include: acquisition of a barge fleet for transporting agricultural products; construction of a new soybean processing plant in Lincoln, Nebraska; “expansion of present Decatur, Illinois, plants and construction of a new plant in Decatur to make textured vegetable proteins for foods.”

491. Hayward, J.W. 1967. Heat processing of soybean meal for maximum protein quality. *Soybean Digest*. May. p. 43-45, 48. [14 ref]

• **Summary:** From his speech at the World Congress on Animal Nutrition in Madrid, Spain. A large photo shows Dr. Hayward addressing the congress. In 1960 Dr. Hayward retired as director of nutrition at Archer Daniels Midland Co., Minneapolis, Minnesota, after 25 years with that firm. He has since served in the same capacity with the Soybean Council of America, Inc., and now with Soypro International.

“My experience, with rather limited nutritional aspects of soybeans, started back at Purdue University in 1918 with swine. Research in earnest began for me at the University of Wisconsin in 1932, where I investigated rather thoroughly, for a few years, the effect of heat on the protein quality of soybean meal produced by all three methods of oil extraction. After completion of my graduate studies at the University of Wisconsin I joined industry, where many years have been devoted to further researches and market development work with soybeans.

“The Archer Daniels Midland Co. (ADM) brought to the United States in 1933 the first continuous solvent extraction plant to be used in our country on oilseeds (1). It was erected and started to operate on a limited scale in the spring of 1934. According to ADM’s contact man in Europe, many German-owned firms in and around Hamburg had successfully operated for many years continuous solvent extraction plants for removing oil from several different oilseeds including some soybeans. Neither these firms nor any of the others visited in England or on the continent purposely heated their oilseeds, including soybeans or the meal, for any possible benefits the heat might have on the nutritional value of its protein, let alone improve the meal physically such as reducing dust and improving color and the general appearance. Heat and flaking or rolling were used

to facilitate oil removal from the oil-bearing seeds. Heat was also used to desolventize the meal or flakes and, where needed, to reduce the moisture in oilseeds to a safe level for storing.

“However, heat was not used intentionally as a means of improving the feeding value of the meal as could have been the case with soybeans. This does not mean that the light-colored solvent extracted soybean meal made in Germany and some neighboring countries back in 1910 to 1935 was undercooked for good protein nutrition of such critical animals as young poultry, pigs, lambs and calves. This possibility does exist, but it wasn’t even discussed while ADM’s representative was bargaining for his firm’s first solvent extractor, a “Hildebrandt” unit, with the developing and fabricating firm, Brinckman and Mergell, of Hamburg-Harburg, Germany.

“In the United States we found that the new light-colored solvent extracted soybean meal was excellent in protein quality as long as we did not tamper with the live steam or indirect heat in the desolventizing columns, or as long as we ran the unit at the low-gear speed recommended by the manufacturer. Samples of the initial light-colored solvent extracted soybean meal were sent to Cornell University investigators (2) who gave it a “relative protein efficiency” value of 92 in their tests, as compared to 57 for the raw soybeans from which this meal was produced.”

“With the solvent process it has been a common practice since 1937 or thereabouts to wet cook the flakes after oil removal. This was done at will in separate cookers since this heating process would not discolor the oil as it was removed prior to cooking... It was back then (1937) that some of us at ADM coined the term ‘toasted’ for this soybean meal from the wet cooking process.

Figures show: (1) Processing of soybeans to get 44% protein solvent extracted meal. (2) Processing of soybeans to get 50% protein solvent extracted meal.

Tables: (1) Nutritional quality guide for soybean meal. (2) Influence of temperature and moisture content of soybeans on the utilization of extracted soybeans by the chick. Address: Nutrition Director, Soypro International, Inc.

492. Horan, Francis E. 1967. Defatted and full-fat soy flours by conventional processes. *USDA Agricultural Research Service*. ARS-71-35. p. 129-41. May. Proceedings of International Conference on Soybean Protein Foods. Held 17-19 Oct. 1966 at Peoria, Illinois. [8 ref]

• **Summary:** Contents: Introduction. The soybean processing industry. Definition and composition of soy flours and grits. Effect and importance of heat in the processing of soy flours.

Soy flour has been ground finely enough to pass through a 100-mesh screen. Soy grits refer to particles of larger size, described in terms of the following U.S. standard screens: Coarse No. 10-20. Medium No. 20-40. Fine No. 40 to 80. Also defines: Defatted soy flour. Low-fat soy flour. High-

fat soy flour. Full-fat soy flour. Lecithinated soy flour. Tables show: (1) Composition of soy flours and grits. (2) Commercial types of defatted soy flours: Amount of heat treatment, protein dispersibility index, and relative protein efficiency (dried skim milk equals 100%).

Note: This is the earliest document seen (Jan. 2016) that uses the term “protein dispersibility” or the term “protein dispersibility index” in connection with soybeans. Address: Assoc. Director, Agricultural Products Research, ADM, Minneapolis, Minnesota.

493. Huang, Po-Chao; Tung, T-C.; Lue, H-C.; Lee, C-Y.; Wei, H-Y. 1967. Feeding of infants with full-fat soybean-rice foods. *USDA Agricultural Research Service*. ARS-71-35. p. 183-93. May. Proceedings of International Conference on Soybean Protein Foods. Held 17-19 Oct. 1966 at Peoria, Illinois. [13 ref]

• **Summary:** Contents: Introduction. Selection of infants. Feeding and care of infants. Clinical findings. Blood data. Nitrogen balance studies. Discussion. Summary. Contains 8 tables. Address: National Taiwan Univ.

494. *Wall Street Journal*. 1967. Archer Daniels desires to buy food processors. June 27. p. 27.

• **Summary:** Archer Daniels Midland Co. hopes to be able to complete some acquisitions within the next fiscal year which begins July 1, said Lowell W. Andreas, executive vice president. Archer Daniels is not yet considering a major entry into consumer products, but the company wants to get as close to consumer marketing as possible.

495. **Product Name:** Nutrisoy 220 (Full-Fat Soy Flour).

**Manufacturer's Name:** Archer Daniels Midland Co.

**Manufacturer's Address:** Minneapolis, Minnesota.

**Date of Introduction:** 1967 June

**How Stored:** Shelf stable.

**New Product–Documentation:** Orr and Adair. 1967.

Tropical Products Institute Report G-31. “The production of protein foods and concentrates from oilseeds.” p. 56. Nutrisoy 220 contains 22-23% fat and 43% protein. The ADM plant has a capacity of 90 (short) tons per day.

496. Orr, Elizabeth; Adair, David. 1967. The production of protein foods and concentrates from oilseeds. *Tropical Products Institute Report* No. G31. 104 p. June. Also titled T.P.I. Report (London). [44 ref]

• **Summary:** Contents: Foreword. Acknowledgements. Introduction. 1. The use of oilseeds as a source of protein. 2. Oilseed resources. 3. The manufacture of protein flours by standard oil milling processes. 4. Some cost aspects of the manufacture of protein flour by standard oil milling processes. 5. Examples of the use of edible flours made by standard oil milling processes. 6. Full fat soya flours. 7. Oriental methods of processing soya. 8. Other processes

for making protein products. 9. The distribution of protein products. 10. Current experience of making protein flours and foods from oilseeds. 11. The initiation of protein food programmes with particular reference to the role of the administrator. Appendices. 1. Protein nutrition. 2. Oilseed statistics. 3. Toxic hazards. 4. P.A.G. Guides [PAG]. 5. Aflatoxin. 6. Questionnaire. 7. Some examples of the cost of packaging oilseed-based protein foods. 8. Prices of edible oilseed products and protein flours and foods made from oilseeds. Bibliography. Chapters 6 and 7 are especially relevant to soyfoods.

“Full fat soya flour (FFSF) is manufactured in the USA by Archer Daniels Midland Co. and Central Soya, and in the UK by 3 firms: British Arkady Co. Ltd., Soya Foods Ltd., and British Soya Products Ltd. There are no official statistics for production in either country. A trade source of information has estimated UK usage of soya flour at 30,000 tons per annum, but this figure includes defatted soya flour made from meal imported from the USA. Full fat soya flours can be divided into 2 main categories: (a) flours used primarily for bleaching purposes in bread, and (b) general purpose flours. When the flour is to be used mainly for bleaching it is made from uncooked beans, since the natural enzymes in the bean must remain active until the bleaching process has been completed. It is estimated that about half the full fat soya flour made in the UK is used in bread manufacture.”

A table lists all known commercial full-fat soy flours, their composition and prices. Describes the Promo Process and Wenger Process for making FFSF, with cost data. Gives case histories for Pronutro in South Africa and Nutresco in [Southern] Rhodesia.

Chapter 7. Oriental methods of processing soya beans: Kinako (“a flour made from ground toasted [soy] beans, used in making cakes”). Fermentation products: Soya sauce (shoyu), miso, natto, tempeh. Developing the use of fermented products. Aqueous extracts: Soya milk and tofu, kori-tofu. Soya milk as a substitute for cow’s milk. The package soy milk shop (including Tetra Pak and Prepac packaging; the Prepac system, developed by the S.E.A.B. Co., Villejuif, France, has a capacity of 1,500 packs/hour). Case histories for soya milk: Rural cooperatives in Taiwan, Saridele in Indonesia, and Vitasoy in Hong Kong. Soya milk made from soya flour: The 4 known manufacturers of soya milk are Promo Ltd. of the U.K. (“The product made by Promo is marketed under the brand name of ‘Velactin’ by the Wander company.”), and Loma Linda Foods (Soyalac and Granogen), Mead Johnson (Sobee or Soybee), and Borden’s Soy Processing Co., all of the USA. Promo and Loma Linda use the traditional Oriental method rather than using soy flour.

Note: This is the earliest document seen (Aug. 2015) concerning Tetra Pak and soy. Address: TPI, 56/62 Gray’s Inn Road, London WC1.

497. Horton, Yvonne. 1967. Soybean products: Candid consumer. *Christian Science Monitor*. July 6. p. 10.

• **Summary:** Increasingly sophisticated edible plant proteins are now available to American consumers, after getting their start in institutions.

Synthetic bacon bits, named Bac-Os, made by General Mills, Inc. from isolated soy protein under the trade name Bontrae, resemble crisp fried pieces of lean bacon without fat. They are being test marketed in Buffalo and Syracuse, New York; in Sacramento and Stockton, California; and in Denver, Colorado.

Before being test marketed at retail outlets, Bac-Os were used for salads on Eastern Airlines flights and for bacon, lettuce and tomato sandwiches in restaurant chains, university dining halls, etc.

Another high-protein product made from Soybeans by General Mills is Modern Protein Food (MPF), also called Multi-Purpose Food; it is recommended by the maker for stocking fallout shelters, for stretching food budgets, and for vegetarian or other special (religious) diets.

Many other food manufacturers are doing research on “vegetable protein products.” Archer Daniels Midland Co. of Minneapolis [Minnesota] makes TVP (Textured Vegetable Protein), which contains no waste, less than 1% fat, and can be cooked in many ways. Other companies involved in the field are Central Soya Co., Ralston Purina Co., Swift and Co., and Worthington Foods. Address: Home economics writer, Christian Science Monitor.

498. Archer Daniels Midland Co. 1967. Fiscal 1967 annual report. 733 Marquette Ave., Minneapolis, Minnesota 55440. 18 p.

• **Summary:** “In our 65th year, ADM is a company expanding and broadening its activities in the whole wide fields of agricultural processing and marketing.” Net sales and other operating income: \$371,625,700. Earnings before taxes: \$5,341,730. Net earnings: \$4,370,293. Current assets: \$91,128,025. Current liabilities: \$29,243,634. “This was a year of momentous change for ADM. It marked a turning point in the Company’s structure and purpose. As we start the new fiscal year, the processing and merchandising of agricultural products, the development and marketing of food and feed ingredients are our single business. Through the sale of the chemical business, we have freed \$65,000,000 for investment in new enterprises... ADM did not receive any income from the Chemical Group after April 1, 1967.” The Chemical Group was sold to Ashland Oil & Refining Co.

Page 5: “During the past year TVP moved from the development stage to commercial production. A plant to produce this new concept in nutritious high protein food was placed in operation at our Decatur, Illinois, soybean processing complex. Since then, sales of the protein product to food manufacturers have grown steadily. We expect sales

of TVP to increase substantially in the year ahead. To supply the increasing demand for TVP, we have expanded the Decatur plant and plan future additions to its capacity.”

ADM is constructing a new soybean processing plant at Lincoln, Nebraska. “When completed in November 1967, the Lincoln plant will have the capacity to process 33,000 bushels of soybeans daily and can be expanded to 50,000 bushels of soybeans daily with the addition of modular equipment.” Address: Minneapolis, Minnesota.

499. *Soybean Digest*. 1967. Honorary life members [American Soybean Assoc.]: Chas. V. Simpson and Whitney H. Eastman. Sept. p. 2d.

• **Summary:** “Whitney Haskins Eastman was one of the early pioneers in the soybean industry in the United States. He helped organize the National Soybean Processors Association under the name of the National Soybean Oil Manufacturers Association in 1930 and was its first president. [Note: Two early documents related to this Association [NSPA] both state that Otto Eisenschiml was elected its first president.] Mr. Eastman served as NSPA president for 5 years, then became the first chairman of the executive committee of NSPA, which post he held for several years.

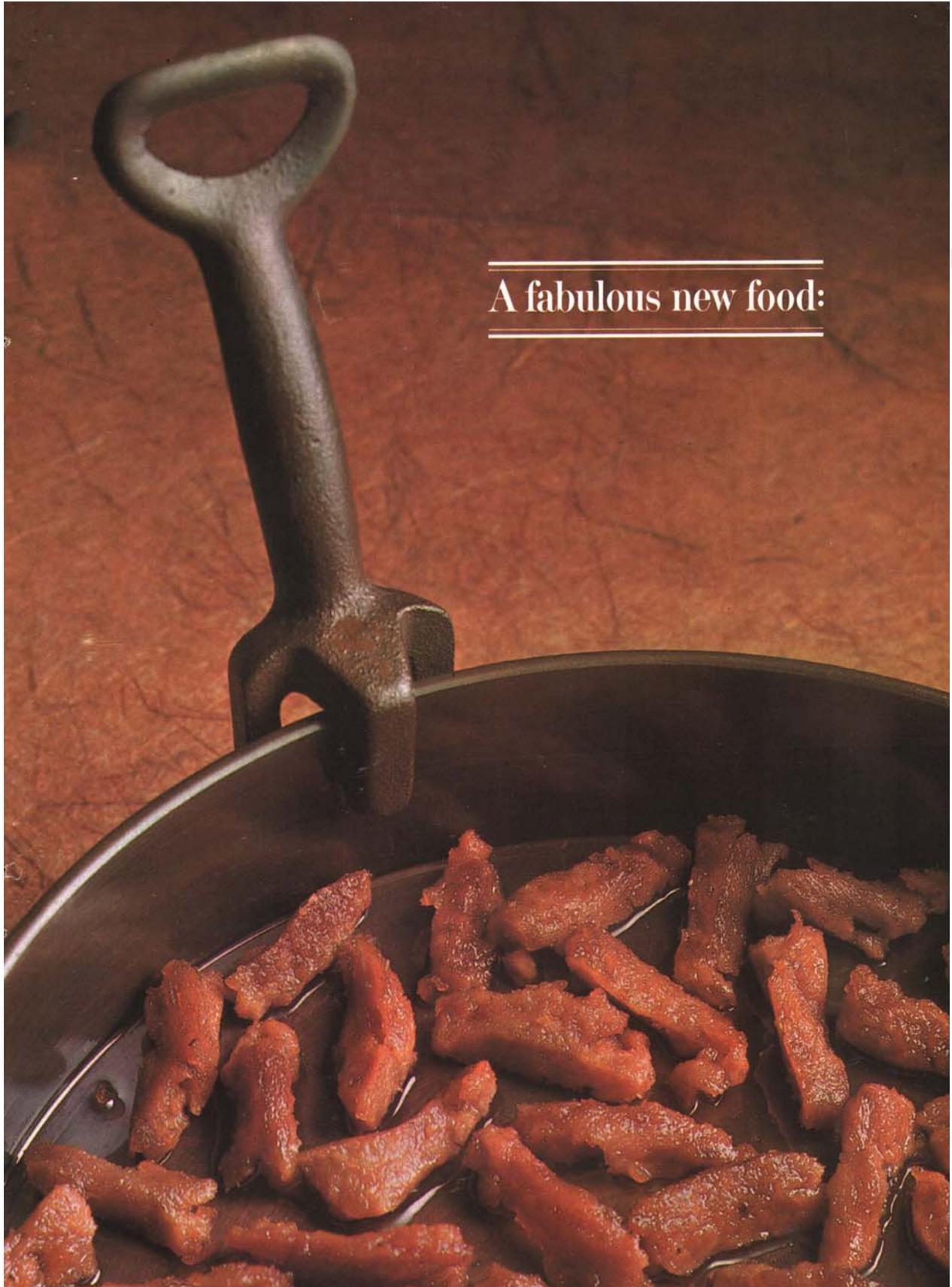
“Mr. Eastman started in the vegetable oilseed processing business after his graduation from Dartmouth College in 1911. He became associated with Archer Daniels Midland Co. in 1928. He was a vice president and director of that company until 1942.

“From 1942 until his retirement in 1955, Mr. Eastman was vice president of General Mills in charge of the chemical division and later the feed division. At present, he is a director of First Interoceanic Corp., of Minneapolis [Minnesota], formerly Honeymead Products Co., Inc., an Iowa corporation.” Photos show Simpson and Eastman.

500. Archer Daniels Midland Co. 1967. A fabulous new food. TVP: Add whatever you like and see what you can do with it (Ad). *Food Product Development* 1(5):[11-13]. Oct/Nov.

• **Summary:** See next page. On the first page of this 3-page color ad is a skillet, with an unusual handle, filled with strips of TVP. On the inside 2-page spread is a red bowl of chop suey with chopsticks on the right side. On the left page we read: “TVP” [in huge letters]: add whatever you like and see what you can do with it. This exotic, oriental dish was made with fresh vegetables and beef-flavor strips of TVP’s textured vegetable protein. You could also include meat. But it could hardly look or taste better—or be more economical.

“TVP is the exciting, nutritious, new all-vegetable textured protein source from ADM. It is available in granular, chunk, dice, strip, and chip forms. It comes unseasoned, or with flavoring of almost any kind—meaty, nutty, tangy, salty, even fruit flavors. Easy to handle and to store and completely controlled in texture, flavor, and color, TVP is exceptionally



A fabulous new food:

well suited for institutional feeding and restaurants. It's an excellent enrichment for casseroles, snacks, stews, gravies, ground meats, and many convenience foods. But find out more about this fabulous new food—about the profit making opportunities it affords. Return the coupon today.”

The coupon says: “Please send me technical data, recipes, and samples of TVP (ADM Trademark).” Address: 733 Marquette Ave., Minneapolis, Minnesota 55440.

501. *Soybean Digest*. 1967. ADM names L.W. [Lowell] Andreas executive vice president. Dec. p. 40.

• **Summary:** Lowell Andreas lives in Mankato, Minnesota. John H. Daniels, president and chief executive officer of ADM, says the announcement is effective immediately. “With the addition of Mr. Andreas to the management staff the office of the president will be established, composed of the president and executive vice president.” The company’s two operating groups, agricultural and chemical, will report to Mr. Andreas, who recently resigned as manager of the Honeymead Products division of Farmers Union Grain Terminal Association. A small portrait photo shows Lowell Andreas.

502. **Product Name:** Nutrisoy 220T and 15% Refatted Baker’s Nutrisoy (Refatted Soy Flours).

**Manufacturer’s Name:** Archer Daniels Midland Co.

**Manufacturer’s Address:** Minneapolis, Minnesota.

**Date of Introduction:** 1967?

**How Stored:** Shelf stable.

**Nutrition:** Moisture 6%, protein 44%, fat 16%, ash 5%, crude fiber 2.5%, other carbohydrates 26.5%, calories 360/100 gm.

**New Product–Documentation:** Manufacturer’s catalog. 1987. Free flowing powders.

503. **Product Name:** Soylec Soy Flours (Lecithinated) [C-15, C-6, or T-15].

**Manufacturer’s Name:** Archer Daniels Midland Co.

**Manufacturer’s Address:** Minneapolis, Minnesota.

**Date of Introduction:** 1967?

**New Product–Documentation:** Manufacturer’s catalog. 1987. C-15 and C-6 are premix products of lecithin and Baker’s Nutrisoy. T-15 is a premix product of lecithin and Toasted Nutrisoy Flour.

504. Archer Daniels Midland Co. 1967? Soy flour: Compliment to modern eating (Brochure). Minneapolis, Minnesota. 12 panels. Each panel: 22.8 x 10.3 cm. Undated.

• **Summary:** Contents: Introduction. A baking boon! Soy flour: Now and then. Progress pays off. A natural for institutions. Scoring on the tech-side. The new taste of modern soy flours. Types of modern soy flours: full-fat flour, low-fat flour, defatted flour (containing less than 1% fat, with a protein content of more than 50%). Soy grits.



Heat treatment and solubility. Soy flour is tops in food value. ADM research. ADM products: Introduction, Baker’s Nutrisoy (screened to 200 mesh—as fine as the finest wheat flour. Not heat treated). Nutrisoy Flour, Toasted Nutrisoy Flour, Special X Flour (“An expeller produced low-fat soya flour containing 6.5% fat...”). Nutrisoy Grits and Flakes (“These include a large variety of products which are classified according to texture and degree of heat treatment, and purchased according to specific use. Applications include soy sauce, base flakes for confectionary products, macaroni, whip topping, dry soup and stew mixes, and artificial spices”).

What type of soy flour should I use?—Ask ADM.

Tables show: (1) Approximate composition of ADM Baker’s Nutrisoy Flour.

“Why soy flour? Equally important, but less widely known is the fact that soybeans provide a complete, balanced protein far superior to that of other vegetables and comparable—and in some respects superior—to protein derived from meat, milk, and eggs. Soy protein, like that of animal origin, provides an efficient balance of the *essential* amino acids required by the body to build and repair cells and tissue. These body-building constituents of protein cannot be synthesized by the body rapidly enough to meet its requirements and therefore must be acquired through food.

“Protein of vegetable origin—with the marked exception of the soybean—is deficient in one or more of the essential amino acids. Because of this, much of it cannot be utilized by the body to build tissue.

“Picture protein as a barrel constructed of eight staves, each of which represents one of the essential amino acids. Saw off just one of the staves and the barrel’s usable capacity is limited. The same is true of protein. Utilization of the entire protein is limited to the degree that just one amino acid is deficient. By adding from 3% to 5% soy flour to many recipes, however, the protein is made complete, comparable to that of choice beef steak.”

“Soy flour: Now and then.

Edible soy flours, flakes, and grits marketed today bear little resemblance to those of several years ago.

“The first soy flour was actually a meal. It contained a high percentage of hulls and had a beany, rather unpleasant flavor. The next step was a highly toasted product, dark in color, which disguised the beany taste with a burnt flavor. But in many instances the promiscuous heating denatured the protein so that the product was hardly an improvement.

“Indiscriminate use of soy flour in all kinds of products—especially during World War II—was another unfortunate page in early history. The War-time scarcity of foods induced many to replace wheat flour, milk, or eggs entirely with soy products, regardless of practicability. The unhappy results in many instances placed a stigma on soy flour that still persists among some early users like an old-fashioned superstition.

“Progress pays off: Then, late in the 1940’s, ADM and other major producers set out independently and collectively to drive the ghosts from the soy flour industry . . . to transform scientifically the marvelous nutritive qualities of soy flour into tastier, finer textured doughnuts, cakes, cookies, crackers, breads, soups, cereals, and recently, baby foods. The inexhaustible list of foods that already contain soy flour, and the many uses currently in the testing stage, are proof of their success.

“This rapidly expanding acceptance of soy flour as an efficient, low-cost source of protein may be attributed to education on proper usage, research, and physical improvements in soy flour products. Ahead is a vast potential for usage of soy flour.

“Defatted soy flour is practically fat-free, and with the trend today toward low-fat foods and high protein, it is rapidly gaining in popularity. Containing less than 1% fat, it has a highly digestible protein content of more than 50%.

“Soy grits are the same products as defatted flour but more coarsely ground... in granules ranging in size from that of fine corn meal to corn grits. Soy grits and defatted flour are largely interchangeable in recipes, depending on the desired texture.” Address: 700 Investors Building, Minneapolis 2, Minnesota.

505. Paulsen, Twila M. Assignor to Archer-Daniels-Midland Company (Minneapolis, Minnesota; a corporation of Delaware). 1968. Process for treating soybean particulates. *U.S. Patent* 3,361,574. Jan. 2. 6 p. Application filed 12 Aug. 1963. 4 drawings. [6 ref]

• **Summary:** “This application is a continuation-in-part of application Ser. No. 075,923 filed Dec. 15, 1960 and now U.S. Patent 3,100,709.

“This invention relates to an economical and improved critical processing system for eliminating soybean odor and soybean taste from uncooked or non-toasted particulates of soybeans in their preparation for use in light colored foods for human consumption and the improved products obtained thereby. More particularly, the invention resides in

a discovery of a way to eliminate soybean odor and soybean taste from particulates of soybeans prepared by normal processing and ground for use in food products, particularly for human consumption, by treatment of soybean flakes with protonic acids, salts of said acids and mixtures of said acids and said salts under critical treatment conditions of time, temperature and moisture prior to application in ultimate uses, and obtaining therefrom improved color, without soybean odor and soybean flavor.

“This application provides for a modification over my co-pending application Ser. No. 075,923, now U.S. Patent No. 3,100,709, and distinguishes over my herewith filed co-pending application Ser. No. 301,559 in that the subsequent treatment with a water-soluble peroxide may be eliminated with a resultant retention of desirable functional characteristics and with improved wetting characteristic of the resultant ground products.”

Note: Soy is mentioned 93 times in this patent in the forms “soybean odor and soybean taste,” “soybean particulates,” “soybean flakes,” “extracted soybean flakes,” “full-fat soybean flakes,” “soybean odor and flavor,” “soybean meal,” “soybean bread products,” “soy flour,” “soyflour,” “defatted soyflour,” “soy muffins,” “soybean base material” and “soybean flake material.” Address: Minneapolis, Minnesota.

506. **Product Name:** Soybean Oil, and Soybean Oil Meal.

**Manufacturer’s Name:** Archer-Daniels-Midland Co.

**Manufacturer’s Address:** Lincoln, Nebraska.

**Date of Introduction:** 1968 January.

**Ingredients:** Soybeans.

**Wt/Vol., Packaging, Price:** -

**How Stored:** Shelf stable.

**New Product–Documentation:** Soybean Digest. 1966. Dec. p. 33. “ADM will build soybean plant at Lincoln, Nebraska.”

Archer Daniels Midland Co. 1967. Fiscal 1967 annual report. ADM is constructing a new soybean processing plant at Lincoln, Nebraska. “When completed in November 1967, the Lincoln plant will have the capacity to process 33,000 bushels of soybeans daily and can be expanded to 50,000 bushels of soybeans daily with the addition of modular equipment.”

Archer Daniels Midland Co. 1968. Fiscal 1968 annual report. A photo shows an aerial view of ADM’s new soybean processing plant at Lincoln, Nebraska, which began production in early 1968.

507. *Food Product Development*. 1968. Legal developments: Identity proposals for vegetable protein herald future control of fabricated entrees. 1(6):10. Dec/Jan.

• **Summary:** Two innocent looking documents appeared in the *Federal Register* of 13 Oct. 1967 concerning the establishment of an identity for fabricated foods developed in the future. “General Mills has petitioned the FDA to establish

an identity for a new class of foods” based on spun soy protein fibers to be called *Bontrae*. This “fibrous, textured food, prepared from soy protein isolate.” Part of the proposed identity “defines the process of preparing this filamented food product by a form of extrusion (spinning). General Mills is offering to relinquish its trade mark registration for the name if its proposal is accepted.

In the second proposal, Archer-Daniels-Midland Co. calls for an identity standard for the ingredient “textured vegetable protein” made from one or more proteinaceous materials. Labeling standards are similar in each proposal.

According to the introduction, the FDA would like to establish a single standard for what appears to be two unique classes of food materials. The FDA has seized Bac\*Os, believing the product must be labelled “imitation bacon.” Yet such a name could deceive the consumer, who might think this product need not be cooked or fried like natural bacon.

Another key aspect of the proposal hinges on whether the identity of a product depends on its chemical and physical properties alone, or whether biological considerations should apply. Comments are requested by FDA.

508. *Feedstuffs*. 1968. ADM moves two division offices. May 25.

• **Summary:** President Lowell W. Andreas announced that the Archer Daniels Midland Co. will move the headquarters of two of its divisions—soybean products and food products—from the company’s Minneapolis headquarters to Decatur, Illinois. In Decatur, ADM has two soybean processing plants, soybean oil refining and hardening [by hydrogenation] facilities, and a plant that makes TVP—a new food ingredient now being sold world-wide. ADM employs about 400 people in Decatur.

509. *Soybean Digest*. 1968. Atkinson pioneered textured protein. May. p. 38.

• **Summary:** William T. Atkinson invented the method for manufacturing textured vegetable protein (TVP), a new and versatile soybean-derived food. “Atkinson started his soy research in the 1930s when he developed an automobile upholstery fiber from soybean meal while working for Henry Ford. He continued with the fiber operation after it was sold to The Drackett Co. and moved to Archer Daniels Midland Co. when Drackett sold the agricultural portion of its business to Archer Daniels.” Atkinson is now active in other areas of ADM’s food research program. A photo shows William T. Atkinson.

510. Wokes, F. 1968. Proteins. *Plant Foods for Human Nutrition* 1(1):23-42. May. [19 ref]

• **Summary:** Almost half of the plant proteins consumed by humans come from cereal grains. Address: The Vegetarian Nutritional Research Centre, Watford, Herts. [Hertfordshire],

England.

511. Wokes, Frank. 1968. Our aims [in starting publication of the journal *Plant Foods for Human Nutrition*]. *Plant Foods for Human Nutrition* 1(1):3-6. May. [5 ref]

• **Summary:** “During the Second World War our national food policy was largely based on the pre-war findings of Orr and Lubbock that many British people in the lowest income brackets were living on diets deficient in protein, minerals and vitamins. In order to obtain a satisfactory national war-time diet the production and consumption of plant foods was greatly increased, and that of animal foods diminished; rationing being introduced to ensure equal distribution, regardless of income, of essential nutrients throughout the nation.

“It was my privilege, when writing a popular book on war-time food rationing in the U.K., to have the valuable advice of Sir John Boyd Orr in my attempts to explain the urgency of cutting down the consumption of animal food that needed more shipping space, if imported, and more land, if home-produced. Dr. R.A. McCance and his colleagues in Cambridge University carried out an interesting feeding experiment on themselves which showed that mental and physical activity could be satisfactorily maintained whilst they were living on diets much lower in animal protein than my book had suggested, thus justifying Sir John’s advice.

“A quarter of a century later, when my colleagues and I are helping our friends in Pergamon Press to launch this new Journal, which we hope will assist in solving the much greater problem of feeding the world, it is a great inspiration to us to have received a goodwill message from Lord Boyd Orr which emphasizes the importance of producing more plant foods.

“These foods are the basis of all life. They require much less land and effort for their production than the animal foods that play only a minor part in the diet of most of the world’s population. This is clearly shown by the data from FAO and other authorities that are summarized in the three following papers. They show that for energy, protein, essential minerals and vitamins the world depends mainly on plant food, and must do so to an increasing degree as the mounting number of human mouths to feed causes less and less land to be available for feeding both man and animals, and will inevitably result in the exhaustion of the available land resources. The elimination of inefficient methods of food production will thus become an economic necessity.

“In East Asia, containing over half the world’s population, plant foods have for many centuries been the staple diet, in which the protein is derived mainly from cereals and pulses. Since the Second World War, Dr. H.A.B. Parpia, director of the Central Food Technological Research Institute (CeFTRI) in Mysore, and his colleagues there and in other Indian research centres, have been developing methods for the large scale production and testing (mainly

by clinical trials) of processed plant protein foods. We are in close touch with this important work, and propose to publish regular reports on the findings, together with those on other processed plant protein foods being made in different parts of the world. Dr. Parpia's collaboration in keeping us in touch with Asian developments and his help on the Editorial Board will be greatly appreciated.

"We also aim to cover the extensive investigations on plant foods being carried out in America. Dr. Harry Miller, a medical missionary who first went to China over 40 years ago utilized the opportunity to develop vegetable milks based on soya which have given excellent results in clinical trials there and in the U.S.A., where they are now being manufactured on a large scale. We have been in touch with Dr. Miller, who is a long-standing Honorary Member of our Research Centre, and we will be glad to publish summaries of his findings.

"In Central America the protein supplementary food INCAPARINA, based on a mixture of plant proteins, has proved successful in clinical trials in which Prof. Nevin Scrimshaw played a leading part. Prof. Scrimshaw has kindly arranged for his colleague Mr Richard Shaw (Economic-Industrial Adviser, Institute of Nutrition of Central America and Panama) to provide us with information about INCAPARINA.

"Prof. A.M. Altschul of the U.S. Dept. of Agriculture, a leading authority on the role of plant foods in solving the world food problem, has since the Second World War organized much research, especially on cottonseed protein, a major ingredient in INCAPARINA. His recent book *Proteins—their Chemistry and Politics* expresses forthright views backed by impressive scientific evidence, much of which was published in his numerous articles and in the earlier book he edited on *Processed Plant Protein Foodstuffs*. We look forward to his help on the Editorial Board.

"In this country large-scale investigations on vegetable milks did not start until the end of the second world war, although before that some small clinical trials of the American vegetable milk ALMONDLAC, based on almonds, were made by Drs. Pink and White at the Vegetarian Nursing Home, Blackheath. Dr. Pink later tested clinically several batches of vegetable milks, based on soya and malted cereals, which had been made at the Ovaltine Research Laboratories under my supervision. One of these batches went to Germany for use in large-scale clinical trials by Dr. R.F.A. Dean, who in 1953 published his findings in the monograph *Plant Proteins in Child Feeding*, which contained a comprehensive survey of all the work done in this field up to 1950.

"The last few years of Prof. Dean's life were devoted to clinical and biochemical studies in Kampala, Uganda on African children suffering from the protein deficiency disease kwashiorkor. The book on kwashiorkor published by Trowell, Davies and Dean in 1954 described their findings

together with those of many other leading workers. Much more has since been written about this disease which has caused many thousands of deaths. We hope with the help of experts to give this highly important subject due attention.

"The Medical Research Council, in their preface to Dean's 1953 report, emphasize the great practical value of vegetable milks for child feeding in many parts of the world where cows' milk is scarce and supplies of other animal proteins are limited. This means the Group I poorer countries which, as FAO figures show, contain about five-sevenths of the world's population. In the Group II richer countries (e.g. West Europe, North America and Australia) vegetable milks have been successfully used during the last two or three decades for the treatment of infants and children born with allergies to cows' milk protein. More recently they have proved effective in treating babies born with congenital galactosaemia. This disease inflicts an intolerance of galactose (even to that present in the mothers milk) due to an enzyme deficiency in the galactose metabolic pathway. Such babies die within a few weeks of birth or survive in a pitiable condition, in which blindness and mental disorders are prominent. Although the total number of babies concerned is very small, this use of vegetable milks merits attention because of the interesting biochemical problems involved.

"Apart from animal milks, meat forms the main source of animal protein in diets in the Group I countries. Whilst many of the domestically prepared dishes provide considerable amounts of plant protein, especially if they contain enough of the native pulses, diets too low in protein are often encountered and need improving by addition of protein-rich supplements. These may be made from different plant foods, including nuts, defatted oil seeds or other pulses, about which more information is urgently needed. Protein may also be extracted from leaves, using the methods devised by Mr. N.W. Pine and his colleagues at Rothamsted. After removal of unwanted constituents affecting acceptability, and perhaps also being made more digestible by treatment with papain, the leaf protein can be successfully used to improve diets of infants, children or adults. Leaf protein yields/acre may be considerably higher than yields of seed proteins under the same conditions. Details of these findings must take a prominent place in our reports..." Address: The Vegetarian Nutritional Research Centre, Watford, Herts [Hertfordshire], England; Editor of the new journal.

512. *British Vegetarian*. 1968. The Macrobiotic Restaurant. May/June. p. 239.

• **Summary:** This new restaurant has "just opened at 136a Westbourne Terrace, W.2, a few minutes walk from Paddington Station, where Westbourne Terrace crosses Bishop's Bridge Road (the entrance is on Bishop's Bridge Road). "Mr. Gregory Sams, who runs it, is a vegetarian and makes a speciality of vegetarian and vegan meals. The

recipes are based on organically grown foods, with rice, soya, and sesame the features in a varied menu with an Asian influence; they offer a luxuriously gingery Japanese drink called ume-syo-kuzu [with umeboshi, shoyu, and kuzu]. The menu is a la carte. Phone: 01-723-7367. See also an almost identical article in the July/Aug. issue of this magazine on page 338. "The Macrobiotic Restaurant" is referred to again by this name in the Nov/Dec. 1968 issue of this periodical (p. 529); it is no longer serving lunches. And again in the May/June 1969 issue (p. 290). The name and address are unchanged. 1969

Note: The name of this restaurant was apparently changed to "Seed" shortly after this article was written.

Not in the article is a "Seed" restaurant card and menu from late 1969 or early 1970 sent to Soyfoods Center by Gregory Sams, founder.

513. *Soybean Digest*. 1968. Two ADM divisions to move to Decatur, Illinois. June. p. 36.

• **Summary:** "Archer Daniels Midland Co. has announced that the headquarters of two of its divisions—soybean and food products—will be moved from Minneapolis, Minnesota, to Decatur, Illinois.

"Lowell W. Andreas, ADM president, said the relocation of the divisions is necessary because of the increasing importance of the Decatur soybean processing complex in the operations of the two divisions.

"ADM has two soybean processing plants in Decatur as well as soybean oil refining and hardening facilities and a plant to produce TVP textured vegetable protein, a new food ingredient now being marketed worldwide.

Vice President Raymond E. Fiedler, of the soybean division, and Harry K. Bean, vice-president of the food products division, will move their offices to Decatur as soon as possible.

"Construction of additional soybean oil refining capacity and of an oil hardening [hydrogenation] plant has just been completed at Decatur and both plants now are producing oils for the food industry. Modern [solvent] extraction equipment also is being installed there to replace outmoded machinery, and the textured vegetable protein plant is being enlarged."

ADM "has formed a new food products division to market the company's soy food products and food-grade vegetable oils...

"The division is headed by Harry K. Bean, vice president, and includes the former vegetable oils division and the soy specialties department." It will "coordinate marketing activities for a broader thrust by ADM into the food business."

514. Archer Daniels Midland Co. 1968. Fiscal 1968 annual report. 733 Marquette Ave., Minneapolis, Minnesota 55440. 18 p.

• **Summary:** Net sales and other operating income:

\$280,771,608. Earnings before taxes: \$5,145,669. Net earnings: \$4,413,558. Current assets: \$96,325,590. Current liabilities: \$27,061,523.

"In order to sharpen the coordination among production, sales and research, the administrative offices of the Food Products and Soybean Divisions and the entire Research Department are being moved to Decatur [Illinois]. Division personnel will be relocated there before September 1 and research personnel will follow in the summer of 1969. By then a new office building and research laboratory will have been completed at the Decatur East plant."

A table (p. 14-15) shows a "Ten-year summary of financial and operating data."

Photos show: (1) Lowell W. Andreas and John H. Daniels. (2) An aerial view of ADM's new soybean processing plant at Lincoln, Nebraska, which began production in early 1968. (3) TVP on display at a food exposition in Cologne, Germany. (4) Boxes of labeled TVP on pallets being hoisted by a forklift. (5) Various TVP ads. (6) Each of the 10 members of the board of directors, including Lowell Andreas (president) and Dwayne Andreas (chairman of the finance committee). (7) Each of the 8 members of the president's staff. Address: Minneapolis, Minnesota.

515. *NewsTime (Scholastic)*. 1968. Next TVPburgers? 33(6):2. Oct. 18.

• **Summary:** Switzerland's largest supermarket chain is selling TVP, an American-made substitute for meat, made from soybeans. TVP stands for "Textured Vegetable Protein." Its makers hope the Swiss *won't* think it stands for "tastes very poorly."

516. Archer Daniels Midland Co. 1968. A fabulous new food. TVP: Add eggs or a tangy dip and see what you can do with it (Ad). *Food Product Development* 2(5):73-75. Oct/Nov.

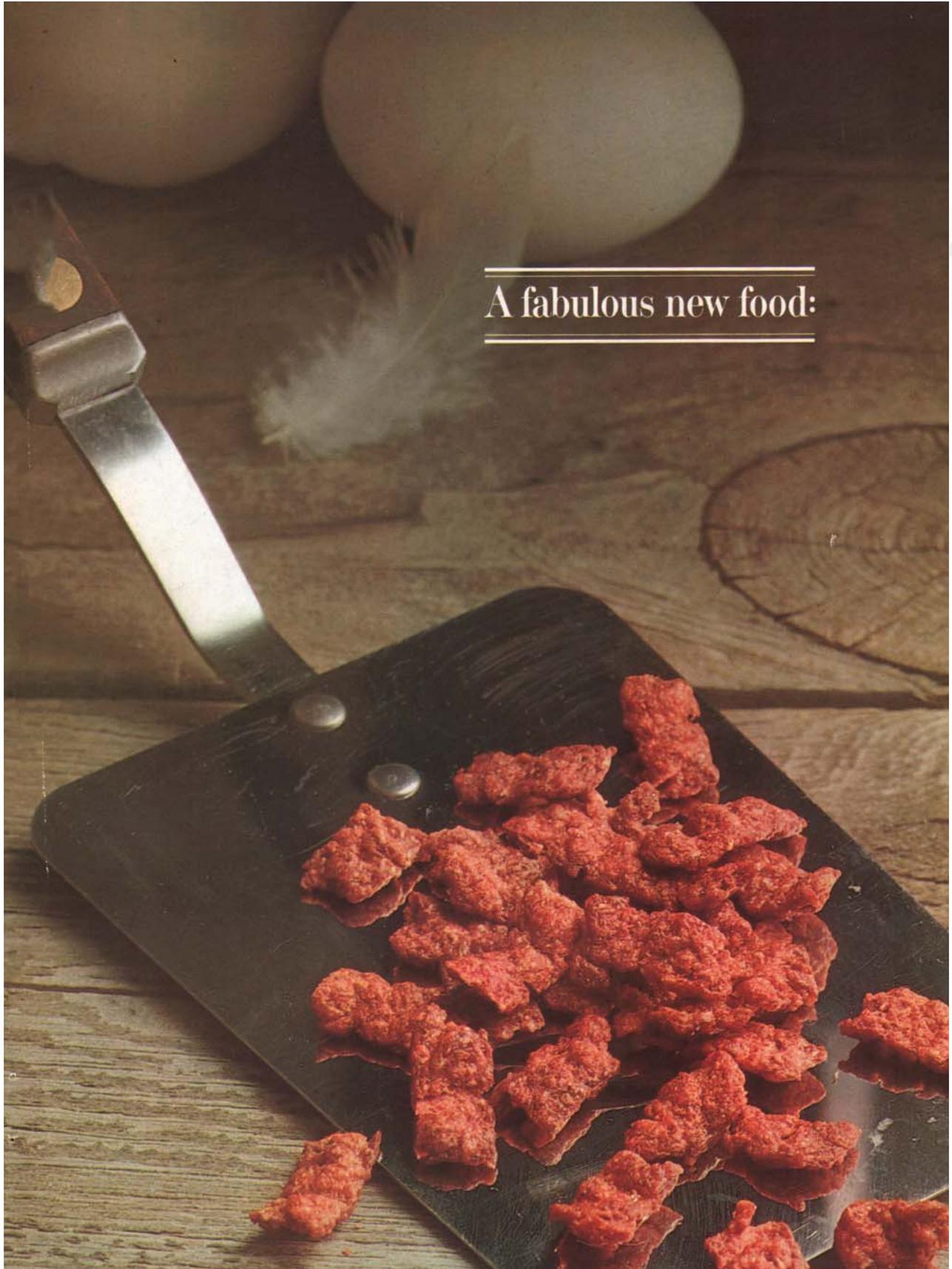
• **Summary:** See next page. On the first page of this 3-page color ad is a stainless-steel spatula with reddish strips of TVP on it—above a wooden table. Below two large eggs and a feather at the top of the page is written: "A fabulous new food."

On the inside 2-page spread is a skillet filled with cheese-topped TVP and eggs, also above a wooden table.

On the left page we read: "TVP [in huge letters]: add eggs or a tangy dip and see what you can do with it.

Eggs and what? Just crisp chips of bacon-flavor TVP\* textured vegetable protein. You could also include some bacon. But these scrambled eggs could hardly Look or taste better ... or be more economical.

"TVP is the exciting, nutritious, new all-vegetable textured protein source from ADM. It is available in granular, chunk, dice, strip, and chip forms. It comes unseasoned, or with flavoring of almost any kind—meaty, nutty, tangy, salty,



even fruit flavors. Easy to handle and to store and completely controlled in texture, flavor, and color, TVP is exceptionally well suited for institutional feeding and restaurants. It's an excellent enrichment for casseroles, snacks, stews, gravies, ground meats, and many convenience foods. But find out more about this fabulous new food—about the profit making opportunities it affords. Return the coupon today.”

The coupon says: “Please send me technical data, recipes, and samples of TVP (ADM Trademark).” Address: 733 Marquette Ave., Minneapolis, Minnesota 55440.

517. Tawa, Andre. 1968. Marketing soy proteins in the Lebanon. *Soybean Digest*. Dec. p. 13-14.

• **Summary:** “More than 50,000 people visited the soy protein stand at the Food Fair at Beyrouth and sampled ADM’s textured vegetable protein in Lebanese foods.”

“The Lebanon, a tiny Arab republic tucked away on the eastern corner of the Mediterranean Sea, is well known in international finance as the oil banker of the Gulf.

“The 2 million people of Lebanon, in ritzy-Riviera-like Beyrouth, or on the snow covered slopes of the ski resorts in the Cedars, do make an ideal market for any new food product.”

“Estimated consumption of all meats is around 40,000 mt/year, 90% of which is imported.” Note: “mt” = metric tons.

“Poultry growing is expanding rapidly and has become one of the major agricultural industries.”

“Last year’s imports of soybean meal rose to about 10,000 m.t., mostly bulk, from the U.S.”

“A more challenging market, which is practically untouched, is the one for soy proteins in human consumption.”

ADM is introducing its TVP to Beyrouth, Lebanon under the brand name Aminos; their goal is 1 lb/year per capita consumption. “Other soy proteins just being introduced to this market are soy flour for bakery products, soy milks, and other soy extenders for the meat packing industries.”

518. **Product Name:** Bacon Bits.

**Manufacturer’s Name:** Archer Daniels Midland Co.

**Manufacturer’s Address:** Minneapolis, Minnesota.

**Date of Introduction:** 1968.

**New Product–Documentation:** Horan. 1974. Meat analogs. p. 380. Manufacturer’s catalog. Talk with ADM sales dept. 1988. Sept. 15. This product was launched in about 1968, about a year after the company started to make TVP. It is made by texturizing soy flour, and may not be a registered trademark.

519. **Product Name:** Jolly Joan Wheat and Soy Pancake Mix, Whole-Wheat and Soy Pancake Mix.

**Manufacturer’s Name:** Ener-G Cereal Co.

**Manufacturer’s Address:** 6901 Fox Ave. South, Seattle, WA 98108.

**Date of Introduction:** 1968.

**Ingredients:** Wheat or whole wheat, whole soy flour, monocalcium phosphate, sodium bicarbonate.

**Wt/Vol., Packaging, Price:** 16 oz bag in a box.

**How Stored:** Shelf stable.

**New Product–Documentation:** Talk with Sam M. Wylde, Chairman, Ener-G Foods, Inc. 1990. Oct. These two products were introduced at about the same time in 1968, when the company moved to Fox Ave. Shortly after they were launched the company name was changed to Ener-G Foods Inc. and the brand was changed to Ener-G. Each product contained whole soy flour, purchased from ADM (Archer Daniels Midland Co.).

520. Eastman, Whitney H. 1968. The history of the linseed oil industry in the United States. Minneapolis, Minnesota: T.S. Dennison & Co. 277 p. Illust. No index. 24 cm.

Sponsored by First Interoceanic Corporation. Foreword by Thomas L. Daniels. Reviewed in *Soybean Digest*, June 1968, p. 31. [460\* ref]

• **Summary:** A good, very readable work—with a large bibliography but no documentation of individual sources. All references pertain to flax. Chapter 2, titled “Growth and decline of flaxseed production in the United States along with the rise and fall of the linseed oil processing industry” offers a chronology of early developments concerning linseed oil:

Early colonists brought flaxseed to America, primarily for the production of fiber to be spun and woven into linen cloth. As population increased, there was a growing need for linseed oil at home to use in making paints for buildings and machinery, and for linseed cake as a livestock feed.

1793—The first linseed oil was produced in the USA (p. 18)—the same year the cotton gin was invented. Note: This may also have been the first vegetable oil produced in the USA. Small family-owned processing plants, usually bearing the family name, began to spring up along the Atlantic Seaboard. This new industry followed the westward movement of American civil and the flax crop.

1795—The horizontal hydraulic press is invented; efficient but expensive, it soon comes to be used for making linseed oil (in the early 1800s).

1810—There are now 283 flaxseed processing plants in the USA, with a combined annual capacity of less than 300,000 bushels. About 60% of these plants are located in Pennsylvania. Many of them used hand-turned screw presses (resembling apple cider presses), which were much less efficient than the Dutch (stamper) press or the new horizontal hydraulic press. The movement of flax westward often left East-Coast processors in short supply.

1850—The vertical hydraulic press, invented and patented by Edwin Hills, appears on the market. It is widely

used in larger, modern plants until the 1930s.

1860–East Coast linseed processors now feel the competition of inland processors; 26 plants are concentrated in the Miami River Valley near Dayton, Ohio. For many years Ohio was the leading flaxseed producing area in the USA.

1870–Thirty Eastern Seaboard processing plants are still in business, many using imported flaxseed with a higher oil content. 1887–The National Linseed Oil Company is established to consolidate small processors into a so-called Trust to improve processing margins. It ends up controlling about two-thirds of processing capacity, but 21 of its plants were so old and inefficient that they soon had to be dismantled and written off. At this time 70 linseed oil plants are in operation in the USA, with 20 of them in Ohio. During the 1880s many such trusts—but smaller—were formed.

1900–Only 13 Eastern Seaboard processing plants remain in business, six each in New York State and Philadelphia, and one in New Jersey.

1909–Spencer Kellogg and Sons, Inc. builds a large, modern linseed oil processing plant on the Hudson River in Edgewater, New Jersey; it had its own deep-water pier and was equipped with hydraulic presses.

1911–Midland Linseed Products Co., a fast-growing oil processor based in Minneapolis, Minnesota, also builds a large, modern linseed oil plant on the Hudson River in Edgewater, New Jersey; it has 64 hydraulic presses and a deep-water pier.

1912–317 million lb. of linseed oil are produced in the United States.

1922–Archer-Daniels Linseed Co., based in Minneapolis, Minnesota, is the third major company to build a large, modern linseed oil processing plant on the Hudson River in Edgewater, New Jersey; it has 48 hydraulic presses.

1944–Production of linseed oil in the USA reaches an all-time peak of 732 million lb. It is used mostly in paints and varnishes.

Contains an excellent, detailed history of Spencer Kellogg and Sons, Inc. The company, which has headquarters in Buffalo, New York, dates back through 5 generations of the Kellogg family. The Kellogg name has been prominent in the linseed oil industry longer than any other family, dating back to 1824, only 31 years after the first linseed oil was produced in America.

Spencer Kellogg was the “first linseed oil processor in America to do any serious fundamental research on linseed oil in this country. They built a modern research laboratory at Buffalo, New York, in 1909, and under the able leadership of Dr. Alex Schwarcman, carried on an aggressive program in fundamental research on linseed oil. Dr. Schwarcman received thirty-four United States and Canadian patents over a period extending from 1914 to the present time.” The company was sold in 1961 to Textron, Inc. It has since been operated as the Spencer Kellogg Div. of Textron, Inc., a

publicly owned corporation.

Also contains a history of Archer-Daniels-Midland Co. (p. 40-), one of the largest linseed oil processors in the industry. Formed under that name in 1923, it has roots going back 130 years. ADM was said to be a bit slow in recognizing the value of research. As late as 1932 ADM’s entire technical staff consisted of only a few people, but when the new laboratory was completed the following year, the department was expanded. The list of new products developed through research began to grow rapidly starting in about 1940, so that an increasingly large proportion of ADM’s output of linseed oil was sold in refined or chemically processed form.

Chapter 4, titled “The Evolution of Processing Equipment” (p. 107+) gives a good history of the subject. The horizontal hydraulic press, invented in 1795, came into use in the early 1800s. The vertical hydraulic press first appeared on the market in 1850 and was widely used until the 1930s; French Oil Mill Machinery Co. of Piqua, Ohio, dominated the market. The French Oil Mill Machinery Co. made an excellent model. The Spencer Kellogg plant at Edgewater, New Jersey, built in 1909, eventually had 190 hydraulic presses—the largest in the USA. Mechanical screw presses replaced the vertical hydraulic press in the 1930s. The main manufacturer of these presses were V.D. Anderson (Expeller) and French.

“The continuous solvent extraction of oilseeds was first developed in Europe and had been used successfully there for a number of years before the process was used in the United States. The first continuous solvent extraction plant in this country was placed in operation in Chicago [Illinois] in 1934 by Archer-Daniels-Midland Company to operate on soybeans. This plant, like several others of the earlier plants in this country, was designed and built in Europe.” Early U.S. manufacturers of continuous solvent extraction equipment were Allis-Chalmers of Milwaukee (Wisconsin), V.D. Anderson of Cleveland (Ohio), French of Piqua, and Blaw-Knox of Pittsburgh (Pennsylvania). Flaxseed, which has a much higher oil content than soybeans, required prepressing by use of the mechanical screw press.

When [in 1960] Honeymead sold their Mankato soybean processing plant to Farmers Union Grain Terminal Association (FUGTA a farmers co-op), the flaxseed prepressing unit was included. Sometime later [in 1961], First Interoceanic Corporation purchased the solvent extraction plant of the Minnesota Linseed Oil Co., and after operating it for a while, resold it to FUGTA.

A review of this book in *Soybean Digest* (June 1968, p. 31) shows a small photo of Whitney Eastman, who started in the vegetable oil processing industry in 1911, and in addition to linseed oil has been associated with the soybean crop and industry since its early beginnings in the USA. “Mr. Eastman has served as vice president of both Archer Daniels Midland and General Mills, Inc. In recent years he has been a director

of First Oceanic Corp., which is the largest stockholder of ADM.”

521. Eastman, Whitney H. 1968. The Andreas brothers’ linseed oil operations (Document part). In: Whitney H. Eastman. 1968. *The History of the Linseed Oil Industry in the United States*. Minneapolis, Minnesota: T.S. Dennison & Co. 277 p. See p. 53-54. [460\* ref]

• **Summary:** During the 1930s in Iowa, R.P. [Reuben Peter] Andreas built several small soybean processing plants and feed plants. At an early age, the Andreas boys [his sons] began to learn the intricacies of the buying and processing of oilseeds.

Four of his sons—Albert, Dwayne, Lowell, and Glenn—devoted themselves to linseed oil processing and refining. Albert was the first of the four brothers to take an interest in this industry.

In 1937 Joseph Sinaiko established The Northwest Linseed Company. He built a linseed oil processing plant in Fridley (a north suburb of Minneapolis) and installed four French mechanical screw presses. At a later date he installed three French screw presses.

Note: Ray Lindquist, Jr. (personal communication 10 July 2003) says that the Northwest Linseed Co. was in Minneapolis, not in Fridley. He does not know who founded it, but Albert Andreas later owned it. Talk with Sally Dogon, Joseph Sinaiko’s daughter. 2003. Oct. 25. Sally’s husband recalls clearly that Joe Sinaiko established The Northwest Linseed Company near Minneapolis.

In 1940 Albert Andreas purchased financial control of the company and in 1948 sold the plant to Cargill, Inc. None of the other Andreas brothers were involved in this venture with Albert. Glenn Andreas went into banking.

Meanwhile, Dwayne and Lowell Andreas had become involved with soybean processing in Iowa and Minnesota. In 1945 Dwayne became associated with Cargill, Inc. at its headquarters in Minneapolis. That same year he was elected assistant vice president, and in 1946 a vice president. He was hired by Cargill to develop its vegetable oil processing and refining division to include flaxseed processing. In 1952 he “retired” from Cargill to be able to devote more attention to Honeymead Products Company, a rapidly expanding business owned by Dwayne and his brother, Lowell. For a while, Honeymead [in Mankato, Minnesota] was operating one of the largest soybean processing plants in the USA—or the world. In 1958 Honeymead added a prepressing auxiliary unit ahead of its continuous solvent extraction unit in order to be able to process flaxseed as well as soybeans.

In 1960 the Andreas brothers sold the Honeymead plant to Farmers Union Grain Terminal Association (GTA)—a farmers’ cooperative. For a while, Whitney Eastman served as a director of Honeymead along with Dwayne and Lowell.

“At the time of the sale of the Honeymead plant to GTA, the Andreas group organized Interoceanic Industries, Inc.—

later changed to First Interoceanic Corporation—to act as a family investment corporation for their far-flung activities. Interoceanic then entered into a management contract with GTA to manage the operations of Honeymead. This management contract continued until 1967.

“In 1961, Interoceanic purchased Minnesota Linseed Oil Company—jointly owned by National Lead Co. and Minnesota Linseed Oil Paint Company. Interoceanic operated this large, modern, continuous solvent extraction plant and refinery located in Fridley—a suburb of Minneapolis—until 1964, when Interoceanic sold the Minnesota Linseed Oil Company to GTA. Interoceanic entered into a management contract with GTA to manage their linseed oil operations. This arrangement continued from 1964 to 1967.

“The two Andreas brothers, Dwayne and Lowell, and the author [Eastman] are still serving as directors of First Interoceanic Corporation.

“In 1966 Interoceanic purchased a large block of stock of Archer-Daniels-Midland Company, becoming the largest stockholder.” That same year Dwayne was elected to the Board of Directors and the company’s Executive Committee. Lowell was elected to the Board of Directors and a member of the executive and finance committees. In 1967 he was elected executive vice president. On 2 Feb. 1968 he was elected president.

522. Goldberg, Ray A. 1968. *Agribusiness coordination: A systems approach to the wheat, soybean, and Florida orange economies*. Boston, Massachusetts: Harvard University Graduate School of Business Administration. xix + 256 p. See p. 101-47. Index. 29 cm. [402 ref]

• **Summary:** Section III, titled “Soybeans,” contains three chapters. 6. The Dynamics of the Soybean System. Changes in Domestic Consumption: The Utilization of Soybean Meal, The Utilization of Soybean Oil. Changes in Export Consumption: Soybeans, Soybean Meal, Soybean Oil, Changes in Production. Changes in Processing and Marketing. Summary.

7. The Structure of the Soybean System. Channels. Firms and Entities. Coordinating Patterns: Common Ownership in the Soybean Industry (farm cooperatives, export firm ownership patterns, soybean processing firm integration, edible oil product manufacturers’ ownership patterns, nonintegrated firms in the soybean industry). Coordinating Institutions and Arrangements (the futures markets, trade associations, bargaining associations, pool arrangements). Vegetable Oil Export Company: governmental activities, contractual relationships. Summary.

8. Behavioral and Performance Patterns in the Soybean Economy. Behavioral Patterns: Storage, Consumption, Output. Performance Patterns: Profitability (Allied Mills, Inc., Archer-Daniels-Midland Co., Central Soya Co., Inc., General Mills, Hunt Foods and Industries, Inc., The Procter

& Gamble Co., Ralston Purina Co., Swift & Co., Textron's Spencer Kellogg Div.), Price Stability, Competition (ease of entry and exit, concentration). Adaptability. Summary. Address: Assoc. Prof. of Business Administration, Harvard Univ., Boston, Massachusetts.

523. *Food Processing (Chicago)*. 1969. Soy protein debuts as main course. Winter. p. F4-F7. Foods of Tomorrow section.

• **Summary:** About textured soy protein products that can take the place of meat, especially Bontrae (from General Mills, Inc., Minneapolis, Minnesota), TVP from ADM (Minneapolis, Minnesota), and Stripples from Worthington Foods (Worthington, Ohio). The costs vary widely. "Unflavored spun soy fibers in an acid-salt media [medium] cost about 50 cents a pound." Prices of the finished products to consumers are about 2/3 to 3/4 of that of the meat they can replace. "Expanded-soy textured protein [extruded textured soy flour] is less expensive. Cost in chunk or dry granular form ranges from 12 to 40 cents a pound. Since it rehydrates with 2 parts water, the cost on an as-served basis ranges from 4 to 13 cents a pound."

Bontrae comes in the form of frozen, free-flowing, pre-cooked crumbles or dice packed in 5-lb cartons. "General Mills is making a sizable increase in the capacity of its pilot plant for the production of Bontrae..." Bontrae is presently being marketed mainly to Minnesota State institutions, hotel, restaurant, and institutional accounts in Albany, New York, and college food service accounts in the Baltimore (Maryland), and Washington, DC, area.

ADM "calls its expanded-soy textured vegetable protein TVP" (registered trademark). The company "had the first production-size facility for textured soy protein and is now in the midst of a major expansion." In the U.S., TVP has been sold mainly to food processors for use in canned, dehydrated, and frozen foods. But in Europe it is sold mostly to consumers, in 200 gm (7 oz) retail packages.

Swift & Co. (Chicago) entered the market 2 years ago with Texgran, expanded soy protein. In less than a year, sales exceeded capacity. A new plant, being constructed in Champaign, Illinois, should be finished soon.

H.B. Taylor Co. (Chicago) sells Textrasoy, an expanded-soy textured protein, which is the lowest cost textured protein available. Until about a year ago it was sold to the pet food industry.

"Six years ago [1963], Worthington Foods introduced a line of simulated meats based on spun-soy textured protein supplied by Ralston Purina." In 1966, Worthington built its own plant for making the "spun-soy fibers." A new line has just been developed for the institutional market. Worthington's latest product is Stripples, which can replace bacon. It undergoes no shrinkage in preparation for serving, compared with a loss of about 25% of its weight when bacon is broiled or fried. Although it costs twice as much

as bacon, "the as-served cost is only half that of bacon." Ralston Purina still makes spun-soy textured protein in the form of unflavored fibers in an acid-salt media, or in flavored dehydrated form.

Color photos show: (1) A table set with 4 ready-to-eat dishes, each containing "Bontrae spun-soy textured protein," which "is being successfully market tested in restaurants and institutions." On one side is a menu with the bold title "C'est Bontrae." (2) A smiling lady placing silver platters of food on a sideboard. The caption: "TVP expanded-soy textured protein is penetrating the home market in Europe." (3) Three traditional bacon dishes on a table, each containing Stripples. The "latest soy protein convenience food," its hickory-smoked strips can be used in place of bacon. Both the light and dark stripes are protein.

524. *Miami Herald (Florida)*. 1969. Death notices: Steele, Lenore J. May 10. p. 28 [newspaper p. 7-B].

• **Summary:** "Steele, Lenore J., [age] 55. of 285 NE 88 St., passed away Friday [May 9]. A resident here since 1952, formerly of Cedar Rapids, Iowa. Survived by husband Marvin R.; 2 daughters Mrs. Sharon Frady and Sue Ross both of Miami; 4 brothers Albert of Miami, Glenn, Dwayne and Lowell Andreas out of town and 6 grandchildren. Services will be 3 p.m. Sunday in the Philbrick & Son Miami Shores Funeral Home, 11425 NE 2 Ave. Friends may call Sat. from 2 to 4 and 7 to 9 p.m. at the funeral home. Family requests contributions to the Variety Children's Hospital in lieu of flowers."

Note: This exact same death notice appeared in the *Miami News Classified Section*, 10 May 1969, p. 14 [newspaper p. 4-B].

525. Nagle, James J. 1969. Iowa plant to produce soy protein. *New York Times*. May 18. p. F15.

• **Summary:** General Mills announced that it has begun construction of a multimillion dollar plant in Cedar Rapids, Iowa, for the production of soy protein foods marketed under the brand name Bontrae. The plant is necessary because demand for the company's Bontrae products has outstripped the present capacity of the pilot plant that makes them.

General Mills has invested millions of research dollars and "more than 300 man years of effort" in Bontrae foods, which are made from defatted soybean meal that is transformed into spun soy protein fiber. Bac-O [Bac\*Os], the first product, went into test markets several years ago and is now distributed nationally through retail food stores.

Soy protein products made by Swift & Co., ADM, and Worthington Foods are also discussed.

526. Gentry, Robert E.; Connolly, Eleanor M. 1969. Fabricated foods. *Stanford Research Institute, Report No. 374*. 16 p. May. (Menlo Park, California, and Zurich, Switzerland).

• **Summary:** This is subtitled “A research report by the Long Range Planning Service.” Contents: Executive summary. Scope and definitions. Present status and outlook: Changes in product mix, changing technology. Impact on food processing industry: Markets, marketing strategies, processing, research and development. Impact on food service industry. Impact on food wholesalers and retailers. Impact on flavor technology. Impact on packaging materials. Impact on agriculture: Meat and poultry, dairy products, oilseeds, grains. Impact on petroleum, natural gas, and coal. Boxes: New protein sources. Approval by the Food and Drug Administration (FDA). Representative groups of companies developing new sources and forms of food. Examples of fabricated foods—1980.

This report predicts that sales of fabricated foods in the USA will increase from about \$1,500 million in 1969 to approximately \$7,000 in 1980, but will still account for only 5% of total sales of the food processing industry. The primary impact during the 1970s will be on convenience, snack, and other specialty foods.

“Sales of meat, seafood, and poultry analogs amounted to only about \$2.5 million in 1966. Worthington Foods and Loma Linda Foods were the major suppliers to a primarily religious and vegetarian market. In the past few years, several major food companies have entered the market and sales have risen to an estimated level of \$10 million. As flavor and texture improve, 1980 sales will soar to \$1,500 million to \$2,000 million.” The foodservice industry will be a prime outlet for the new products.

The most important food analog in America today is margarine. Among dairy foods, margarine accounts of about 66% by volume of the butter market, nondairy whipped toppings have about 60% of the whipped cream market, and coffee whiteners have about 35% of the cream market. In terms of sales: In 1968 sales of margarine are \$475 million out of \$1,150 million (41%) for the total butter and margarine market. By 1980 this is predicted to increase to \$750 million out of a total \$1,250 million (analogs will have 60% of the total market). Sales of coffee whitener are \$30-35 million out of \$85-100 million (35%) for the total coffee cream and coffee whitener market. By 1980 this is predicted to increase to \$100 million out of a total \$130-150 million (71%). Sales of nondairy whipped topping are \$25 million out of \$40-50 million (55.5%) for the total whipped cream and nondairy whipped topping market. By 1980 this is predicted to increase to \$50-60 million out of a total \$80-100 million (61%). Sales of filled and imitation milks are \$3-4 million out of \$3100-3200 million (0.11%) for the total milk and imitation milk market. By 1980 this is predicted to increase to \$600 million out of a total \$3800-4000 million (15%, the biggest percentage increase). Sales of mellorine and other “frozen desserts” are \$45 million out of \$1200-1300 million (3.6%) for the total frozen dessert market. By 1980 this is predicted to increase to \$80-90 million out of a

total \$1500-1700 million (5.3%).

A table (p. 5) titled “Soy Protein Products” discusses soy flour and grits, soy protein concentrate, and soy protein isolate, describing briefly the protein content, processing, price per pound, 1967 U.S. consumption, and applications. In 1967 soy flour and grits sold for \$0.075/pound and 105-110 million pounds were consumed. Soy protein concentrate sold for \$0.18/pound and 17-30 million pounds were consumed. Soy protein isolate sold for \$0.37/pound and 22-35 million pounds were consumed.

Page 10 lists representative companies developing new sources and forms of food. For each, the company name, city, state, and product name or names are given. Companies selling soy protein products include Archer-Daniels-Midland (Minneapolis, Minnesota), Bryan Bros. Packing Co. (Subsidiary of Consolidated Foods Corp, Chicago, Illinois), Central Soya Co., General Mills Inc. (Minneapolis), Griffith Laboratories, Inc. (Chicago), Loma Linda Foods (Riverside, California), Ralston Purina Co., Swift & Co. (Chicago), H.B. Taylor Co. (Chicago), USDA (“Developing edible forms of soybean protein”), and Worthington Foods, Inc. (Worthington, Ohio).

Note: This is the earliest document seen (Aug. 2002) containing statistics on the meat alternatives industry or market—by geographical region. Address: 1. Senior economist; 2. Industrial economist, Stanford Research Inst., Menlo Park, California 94025. Phone: 415-326-6200.

527. Hedges, Irwin R. 1969. Soybeans in the war on hunger. *Soybean Digest*. May. p. 13-17.

• **Summary:** Discusses protein-rich cereal-soy blends such as CSM (“the high-protein blend”) and WSB (Wheat-Soy Blend) used in the Food for Freedom program. The article begins: “War on hunger: The U.S. government launched a War on Hunger 3 years ago [1966, under President Lyndon Johnson], based on the conviction that next to the pursuit of peace the world faces no issue more important than solving the food / population problem... world population was growing at a rate that would double the number of earth’s inhabitants by the year 2000, while food production was lagging considerable behind the population growth rate.”

“AID is providing incentive to private industry to develop, test and eventually produce for commercial distribution low-cost, high-protein foods and beverages. Under these incentive contracts, food processors receive grants to survey the market, determine costs and availability of indigenous commodities, and develop and test market for prototype foods and drinks.” Under this plan, contracts have been signed with Monsanto for a soybean drink in Brazil, with Swift & Co. for soybean-based foods in Brazil, with Archer Daniels Midland for textured vegetable protein and other foods in Thailand, and with General Mills for a high-protein product in Pakistan. Monsanto’s research in Brazil has already shown good results.

Concerning food and population: “Many developing countries show population growth rates of 2.5% to 3.5% per year, rates that double their population in 20 to 30 years. Two-thirds of the world’s population live in the developing countries.

“Must curb population: These same countries also have great potential for increasing food production by the application of modern science and technology. But unless measures are taken to curb population growth, any likely or possible increase in food production will only postpone the crisis.”

Photos show: Dr. A.M. Altschul and Dr. Max Milner. Address: Acting administrator, War on Hunger, Agency for International Development.

528. Odell, A.D. 1969. Marketing considerations for textured protein products. *USDA Agricultural Research Service ARS 72-71*. p. 131-32. May. Proceedings of Conference on Protein-Rich Food Products from Oilseeds. Held 15-16 May 1968 at New Orleans, Louisiana.

• **Summary:** “We have already heard much about the present and future ways and means by which soy flour, concentrates, and isolates are gaining, and should continue to gain, greater acceptance in the human dietary. To the extent that these advances in utilization can produce a profit at the far end, they are permanent advances and, as such, will have long term commercial viability. Where no such profit motivation is demonstrable, there can be no industrial incentive, no spurs to in-depth research by the technically competent and, in the foreign markets, no shoring-up of the economic infrastructure of those developing nations who can and should be involved with these commodities and their end-product extensions. Until it is eaten, any food is merely a collection of organized chemicals of greater or lesser complexity. Since foods are not eaten because they are liked, but are liked because of the learning process of eating them, marketing’s job is to get the consumer to take the first swallow. With an unconventional food, this requires sophisticated and strenuous marketing effort, no matter how brilliant the background research to create the food, or how obvious the need may be for the product itself.

“Marketing, then, of a rather special type holds the key to the future of consumer products from these raw materials. Why marketing of a special type? Simply because, with the exception of certain parts of the Orient, and even there, in only a limited sense, the new and “never before” foods which can be created from these flours, concentrates, and isolates are totally strange to the consumer. Novelty in foods poses an acceptance problem even among the highly sophisticated in the affluent nations. Greater convenience, better packaging, freezing, freeze drying, and other technical advances applied to traditional foods create no insurmountable obstacles on the domestic scene. A totally new food, however, creates its own problems.

“General Mills, Inc., Ralston-Purina, Worthington Foods, Swift, Archer-Daniels-Midland, and others are, as all of you know, engaged in the creation and introduction of both processor- and consumer-oriented foods from various forms of soy protein. The structural integrity that is engineered into these foods by chewy gels, extrusion puffing, or spinning has, as its purpose, the creation of products that fit into a prized sector of the menu—texture, chewiness, proper mouth disappearance, and general gustatorial gratification. As such, all of the products on which all of us are working have nutritional excellence, can be shelf stable, can possess a considerable degree of mimicry of the familiar, can be used to extend traditional foods, and can certainly be designed to meet parochial preference patterns. Given all these attributes and economy along with them, one would be tempted to conclude that these products are a cinch to succeed in the market place. Such a conclusion would be absurd.” Address: Central Research Laboratories, General Mills, Inc., Minneapolis, Minnesota.

529. Altschul, A.M. 1969. Combating malnutrition: New strategies through food science. *Plant Foods for Human Nutrition* 1(3):149-61. June. [7 ref]

• **Summary:** This article begins: “We might describe what has happened in the past 25 years as a derangement of our ecosystem caused by rapid increase in population density without concurrent increased in wealth and the capacity to produce food.”

Note: In 1974 world hunger and malnutrition, along with human population growth worldwide, were considered the two great problems on the planet. Another major problem was the “protein gap.”

Contents: Introduction. New protein foods. Vegetable protein mixtures (soy protein concentrate, CSM). Improved cereal products. Domestic food production (malnutrition among the poor in the USA).

Protein beverages: Vitasoy, successfully marketed in Hong Kong, is a soybean beverage that contains nearly 2.5% protein; it competes successfully with the most popular soft drinks on the market. Monsanto Co. has signed an agreement with K.S. Lo of Vitasoy, for marketing Puma, a soy beverage, in other parts of the world. Coca-Cola recently announced that Saci, which contains 3% soy protein, is now being test-marketed in Brazil. Textured foods (General Mills makes Bac\*Os from spun soy fibers. Ralston Purina manufactures these soy fibers. Worthington Foods makes and sells a line of textured meatlike products based on spun soy protein fibers. Swift’s Texgran and Archer Daniels Midland’s TVP are made by extruding defatted soy flour. H.B. Taylor Co. makes Textrasoy by thermoplastic compacting of the defatted soy flour).

Soybeans (the five categories of processed products are: full-fat soy flour, defatted soy flour, a 60-70% protein concentrate, soy milk, isolated soy protein—the modern

version of Oriental soy curd {tofu}). Cottonseed. Peanuts. Other sources (copra from coconuts, sesame, fish protein concentrate). Private sector's role (AID program, Quaker Oats, Hinds Co., Vitasoy, Coca-Cola Co.). Photo and brief biography of Dr. Aaron M. Altschul.

Page 76: Photos show bottles of Puma (Guyana), Saci (Brazil), and Vitasoy (Hong Kong). For each is given: The percentage and source of protein. The percentage of calories from protein. The cost per bottle in U.S. cents (range 3.5 to 5 cents).

Fig. 3 (p. 152) is a graph that shows, for various countries of the world, the percentage of total grain supplies fed to animals (Denmark and USA are highest at 72-78%) versus animal protein consumption (pounds per person per year) (Denmark and USA are highest at about 45 lb). Address: Special Asst. for Nutrition Improvement to the U.S. Secretary of Agriculture, USDA, Washington, DC.

**530. Product Name:** Protoveg (Meatlike Products Based on TVP) [Flavors are Ham, Beef, Bacon, and Unflavored. Textures are mince, and chunky. Also Smokey Snaps (which resembled bacon bits)].

**Manufacturer's Name:** Direct Foods Ltd.

**Manufacturer's Address:** Greatham, Liss, Hampshire, England.

**Date of Introduction:** 1969 August.

**Ingredients:** TVP (made by ADM) plus flavoring.

**Wt/Vol., Packaging, Price:** 5 oz or 10 oz double cellophane bag.

**How Stored:** Shelf stable.

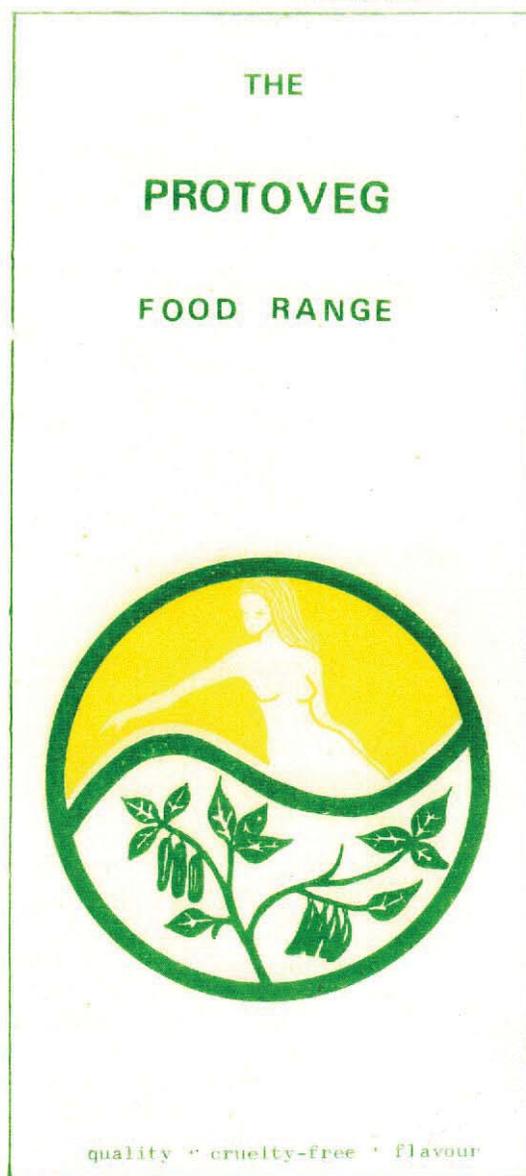
**New Product–Documentation:** See next 3 pages. Mail-order catalog and price list from Direct Foods Ltd. 1969. "The Protoveg Food Range." The company address is Copse House, Greatham, Liss, Hants. 6 panels. Dark green and yellow on light green. Flavors are ham, beef, bacon, or unflavoured. Pack sizes are standard or large. Textures are mince or chunky. There are 14 products total.

Export price list from Direct Foods Ltd. 1974. Oct. 1. Protoveg comes in beef, ham, pork, or natural flavors. Sizes are 5 oz, 10 oz, 10 lb, or 50 lb. 10 products total.

Ad in *The Vegetarian Health Food Handbook* (UK). 1974. p. 88. "Born free? Probably not." An illustration of a bull is shown. "Now you can eat beef without butchery. Protoveg brings you a complete range of meat flavour foods. Protoveg is a natural food made from soya beans." Direct Foods Ltd. is located at Bedford Rd., Petersfield, Hampshire. Phone: (0730) 4911 / 2.

Eva Batt. 1976. *What's Cooking*, rev. ed. p. xvi, xviii. This is a soya-based meat-like product. The unflavoured variety contains added vitamin B-12.

Trade catalog and price list from Direct Foods Ltd. 1977. April 25. Protoveg comes in beef, ham, pork, or natural flavors, plus Smokey Snaps. Sizes are 5 oz, 15 oz, and 10 lb (catering size). 14 products total.



DIRECT FOODS LTD.

Copse House, Greatham, Liss, Hants.

Interview with Peter Roberts, founder of Direct Foods Ltd. 1990. Dec. 12. This was Direct Foods' first product, based on ADM's TVP purchased from British Soya Mills (British Arkady). BSM offered to supply Peter but would not offer any exclusive arrangement. BSM agreed not to compete with Peter, saying they were interested only in selling to food manufacturers, not to the retail market. Peter accepted and in 1969 placed a trial order of about 10 lb of beef chunks or mince. The Roberts called their product Protoveg (pronounced PRO-toe-vej, a registered trademark), and sold



# Direct Foods Ltd.

BEDFORD ROAD, PETERSFIELD

HANTS GU32 3LJ

Petersfield 4911/2  
STD 0730

## Trade Order Form (G.B.)—as from 25 April 1977

Cases Required		protoveg	Size	Number per Case	Rec'd Retail Price £ p	Trade Price per Case £ p	
CHUNKY	MINCE						
HANDY SIZE	...c/s	...c/s	Beef Flavour	5 oz	12	.37	3.33
	...c/s	...c/s	Ham Flavour	5 oz	12	.37	3.33
	...c/s	...c/s	Pork Flavour	5 oz	12	.37	3.33
	...c/s	...c/s	Natural Flavour	5 oz	12	.35	3.15
		...c/s	Smokey Snaps	5 oz	12	.57	5.13
ECONOMY SIZE	...c/s	...c/s	Beef Flavour	15 oz	6	.91	4.09
	...c/s		Ham Flavour	15 oz	6	.91	4.09
	...c/s		Pork Flavour	15 oz	6	.91	4.09
	...c/s	...c/s	Natural Flavour	15 oz	6	.86	3.87
CATERING PACKS	...c/s	...c/s	Beef Flavour	10 lb	1	7.90	5.92
	...c/s	...c/s	Ham Flavour	10 lb	1	7.90	5.92
	...c/s	...c/s	Pork Flavour	10 lb	1	7.90	5.92
	...c/s	...c/s	Natural Flavour	10 lb	1	7.44	5.58
		...c/s	Smokey Snaps	10 lb	1	14.80	11.10

The 5 oz size yields approx. 1 lb meat alternative when hydrated.

The economy size packs contain 3 separate 5 oz sachets, each yielding approx. 1 lb when hydrated.

The catering packs (10 lb) are designed to meet the needs of those who wish to bulk-buy. They represent considerable savings and can replace meat for as little as 25p a pound.

The above prices represent a Recommended Retail Margin of 33⅓% (Discount of 25%).

it in 9 different flavors and textures (see above): They packed it in 4.5 oz. double cellophane bags with a label between the two bags, developed a recipe leaflet and order form, and distributed it via their Compassion in World Farming and via Beauty Without Cruelty (Lady Dowding's anti-fur-trapping group). The 4.5 ounces yielded 1 pound of hydrated product;

the mince hydrated in 2 minutes and the chunks in 15-20 minutes. By the mid-1970s a typical label read: Protoveg: Textured Soya Protein. Beef-Style Chunks.\* \*Contains no meat. Vegetarian.

531. Archer Daniels Midland Co. 1969. Annual report for

DELIVER TO: \_\_\_\_\_ ORDER DATE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

TRADE TERMS

Cases Required	PRODUCT	Size	Number per Case	Rec'md Retail Price £ p	Trade Price per Case £ p
<b>Ranch House Meals</b>					
...c/s	Vegetable Mince	112 g	24	.43	7.74
...c/s	Vegetable Bolognese	112 g	24	.43	7.74
...c/s	Vegetable Curry	112 g	24	.43	7.74
...c/s	Vegetable Stew	112 g	24	.43	7.74
...c/s	Vegetable Goulash	112 g	24	.43	7.74
...c/s	Mixed Selection of Ranch House Meals	112 g	24	.43	7.74
...c/s	Vegetable Mince	10 lb	1	14.04	10.53
...c/s	Vegetable Bolognese	10 lb	1	14.04	10.53
...c/s	Vegetable Curry	10 lb	1	14.04	10.53
...c/s	Vegetable Stew	10 lb	1	14.04	10.53
...c/s	Vegetable Goulash	10 lb	1	14.04	10.53
...c/s	SIZZLEBERG	1 lb yields 2 lbs	12	.76	6.84
...c/s	SOSMIX savoury mix	13 ozs yields 2 lbs	12	.74	6.66
...c/s	<b>NEW</b> Savoury Macaroni with TVP	5 oz	12	.48	4.32
...c/s	Recipe Book "THE EARTH SHALL FEED US"		6	1.00	4.00

The above prices represent a Recommended Mark-up of 33⅓% (Discount of 25%)

the year ended June 30, 1969. 4666 Faries Parkway, Decatur, Illinois 62525. 18 p.

• **Summary:** Net sales and other operating income: \$320,787,250. Earnings before taxes before extraordinary items: \$4,585,838. Net earnings: \$3,393,566. Current assets: \$89,709,128. Current liabilities: \$22,030,742. "A decision

of major significance made during the past year was to move our corporate offices from Minneapolis, Minnesota to Decatur, Illinois. ADM has headquartered in Minneapolis since 1902. The move was prompted by our desire to maximize profits." Address: Decatur, Illinois.

Protoveg and Ranch House products

Tel. Petersfield 4911/2  
STD 0730CONVENIENCE PROTEIN  
DIRECT FROM THE PLANT

## Direct Foods Ltd.

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**Bedford Road      Petersfield      Hants**


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EXPORT PRICE LIST - 1 October 1974

- Wherever possible products are shipped in standard export cases measuring 584mm by 508mm by 813 mm. & composed of Boufort Board.
- Prices quoted are F.O.B. London or Southampton.
- C.I.F. prices can be quoted for specific orders.
- Unless instructed to the contrary, insurance is taken out for the buyer's account.
- Prices quoted are subject to alteration without notice, although every effort is made to notify customers of price alterations in advance.
- Enquiries regarding supply and terms should be addressed to our Agents as under:

Carr, Godden &amp; Co. Ltd., 206 - 210 Bishopsgate, London E.C.2.

- All Protoveg & Ranch House Foods are Guaranteed free of meat and meat-fat.

PRODUCT	PACK	NUMBER PER CASE	CASE MEASUREMENTS (Approx.)			GROSS WEIGHT Lb-oz	PRICE PER CASE £-p
			mm	x mm	x mm		
<b>protoveg</b>							
Beef Flavour	5 oz	12	273	x 188	x 160	4.13	3.10
Ham Flavour	5 oz	12	273	x 188	x 160	4.13	3.10
Pork Flavour	5 oz	12	273	x 188	x 160	4.13	3.10
Natural Flavour	5 oz	12	273	x 188	x 160	4.13	2.90
Beef Flavour	1 lb	6	268	x 237	x 197	6.13	3.93
Ham Flavour	1 lb	6	268	x 237	x 197	6.13	3.93
Pork Flavour	1 lb	6	268	x 237	x 197	6.13	3.93
Natural Flavour	1 lb	6	268	x 237	x 197	6.13	3.83
Catering Packs in any flavours as above	10 lbs	2	408	x 288	x 250	22. lbs.	12.82
Catering Packs in any flavour as above	50 lbs	1	Multiwall Sacks 950 x 500 x 160			52 lbs.	27.44
<b>Ranch House Meals</b>							
Vegetable Mince	112g.	24	390	x 160	x 190	7 lbs.	6.63
Vegetable Bolognese	112g.	24	390	x 160	x 190	7 lbs.	6.63
Vegetable Goulash	112g.	24	390	x 160	x 190	7 lbs.	6.63
Vegetable Stew	112g.	24	390	x 160	x 190	7 lbs.	6.63
Vegetable Curry	112g.	24	390	x 160	x 190	7 lbs.	6.63
Catering Pack Any flavour	50 lb.	1				52 lbs.	45.00
Sosmix - meatless sausage mixture	13 oz	12	290	x 280	x 130	11.08	6.21

Registered Office: COPSE HOUSE :: GREATHAM :: LISS :: HANTS.

Reg. No. 949421 England

532. *Soybean Digest*. 1969. Soy foods given big play at ASA's 49th convention [in South Carolina]. Sept. p. 15.

• **Summary:** More than 1,000 people attended the American Soybean Assoc. convention. "The panel on 'Latest Developments in Soy Foods,' with representatives of leading soy foods processors and of the Northern Regional Research Laboratory at Peoria [Illinois] was well attended; and the soy foods luncheons sponsored by Archer Daniels Midland Co. and Central Soya were crowded to overflowing..."

"Archer Daniels Midland featured TVP (its textured vegetable protein) throughout the whole meal from the salad through the main course, along with soy flour and soybean oil shortening."

533. Prestbo, John A. 1969. Meatless 'meats': Several firms develop soybean-based copies of beef, pork, chicken. Some now on market mixed with real thing; low cost, high-protein food is aim. Questions about taste, labels. food aim. *Wall Street Journal*. Oct. 2. p. 1, col. 1 and p. 21, col. 4.

• **Summary:** Discusses soy-based "pork, beef, and nuts" made by 6 U.S. companies including ADM, General Mills, Swift & Co., Worthington Foods, and Ralston Purina Co. Americans are eating more of these meat analogs than they may realize. "Soup mixes, canned stews and chili, frozen ravioli and prepared, frozen hamburger patties are among a growing number of grocery store staples that now contain relatively small amounts of flavored, textured soybean 'meats' along with real meat. In many instances, the only mention of the analogs on the labels of these convenience foods is in the fine-print list of ingredients. Analogs also are being tested in restaurants, factory cafeterias and institutions."

"Since last year, the New York State Department of Mental Hygiene has been adding General Mills Inc.'s meatless crumbled 'beef' and diced 'ham' and 'chicken' to meals for its 90,275 patients in 49 institutions."

Sales of soy-based analogs this year are estimated at \$10 million and growing fast, up from about \$3 million 5 years ago. "One study conducted by a West Coast research firm forecasts sales of \$1.5-\$2 thousand million for the products by 1980, which would equal 5-6% of the meat and poultry market now projected for that year."

"One of the first products to use analogs, Skippy Peanut Butter with Smoky Crisps (simulated 'bacon' bits), was dropped last year after little more than a year in test markets."

"Last year a cattlemen's convention innocently devoured a banquet entree of 'meat loaf,' only to be jolted later by a speaker who told them they had eaten soybeans, not beef."

"Right now, most meat analogs retail for as much or more than the real meat they imitate. But eventually analogs' biggest attraction is expected to be low cost—roughly half that of trimmed, boned and cooked real meat."

Extruded soy "meats" wholesale for an average of

\$0.35/lb., while those made from spun soy protein fibers range from \$0.45 to \$0.80/lb. General Mills is building its first meat analog plant at Cedar Rapids, Iowa. Worthington Foods makes a bacon analog named Stripples, which sells for \$0.79 per half pound package. "Worthington is also developing meatless breakfast sausages with similar characteristics which it plans to call Sizzles."

"Other food makers are trying different approaches to using analogs. Nalley's Fine Foods division of W.R. Grace & Co. is test-marketing Meat Mate, a package containing dehydrated, textured soy particles. When mixed with a pound or more of ground meat and some water, the particles expand, extending the meat weight by up to 50%. Different types of Meat Mate contain various spices." Other products include Wham, Bac-Os, and Bac'n.

534. Altschul, A.M. 1969. Food: Proteins for humans. *Chemical and Engineering News* 47(49):68-81. Nov. 24. [11 ref]

• **Summary:** This article begins: "We might describe what has happened in the past 25 years as a derangement of our ecosystem caused by rapid increase in population density without concurrent increased in wealth and the capacity to produce food."

Note: In 1974 world hunger and malnutrition, along with human population growth worldwide, were considered the two great problems on the planet. Another major problem was the "protein gap."

Contents: Introduction. New protein foods. Vegetable protein mixtures (soy protein concentrate, CSM). Improved cereal products. Domestic food production (malnutrition among the poor in the USA).

Protein beverages: Vitasoy, successfully marketed in Hong Kong, is a soybean beverage that contains nearly 2.5% protein; it competes successfully with the most popular soft drinks on the market. Monsanto Co. has signed an agreement with K.S. Lo of Vitasoy, for marketing Puma, a soy beverage, in other parts of the world. Coca-Cola recently announced that Sachi, which contains 3% soy protein, is now being test-marketed in Brazil. Textured foods (General Mills Makes Bac\*Os from spun soy fibers. Ralston Purina manufactures these soy fibers. Worthington Foods makes and sells a line of textured meatlike products based on spun soy protein fibers. Swift's Texgran and Archer Daniels Midland's TVP are made by extruding defatted soy flour. H.B. Taylor Co. makes Textrasoy by thermoplastic compacting of the defatted soy flour).

Soybeans (the five categories of processed products are: full-fat soy flour, defatted soy flour, a 60-70% protein concentrate, soy milk, isolated soy protein—the modern version of Oriental soy curd {*tofu*}). Cottonseed. Peanuts. Other sources (copra from coconuts, sesame, fish protein concentrate). Private sector's role (AID program, Quaker Oats, Hinds Co., Vitasoy, Coca-Cola Co.). Photo and brief

biography of Dr. Aaron M. Altschul.

Page 76: Photos show bottles of Puma (Guyana), Saci (Brazil), and Vitasoy (Hong Kong). For each is given: The percentage and source of protein. The percentage of calories from protein. The cost per bottle in U.S. cents (range 3.5 to 5 cents).

Discusses private companies making protein foods as part of a USAID 3-year grant program to encourage U.S. companies to develop commercially viable protein foods for production and marketing in developing countries. A total of 14 projects were funded. Address: Special Asst. for Nutrition Improvement to the U.S. Secretary of Agriculture.

535. Atkinson, William T. Assignor to Archer-Daniels-Midland Company (Minneapolis, Minnesota; a corporation of Delaware). 1969. Process for preparing a high protein snack. *U.S. Patent* 3,480,442. Nov. 25. 3 p. Application filed 22 June 1966. [8 ref]

• **Summary:** “Abstract: A process for the precipitation of a friable, crisp, edible snack in which the cells are of random distribution and size of high protein content obtained by extruding a protein mix of a solid protein derivative having a protein content of at least 30% by weight of the solid and from 12 to 20% by weight of the mix of water at a temperature of 20 to 480°F. at a pressure of at least 1000 p.s.i.”

“The preparation of expanded cellular carbohydrates in the form of cheese and meat-flavored snacks by the so-called puffing techniques is known to the art. Such techniques are, however, not satisfactory in the preparation of expanded, cellular products from edible, bland protein derivatives such as [solvent] extracted oil seed proteins, fish proteins, and animal proteins. Nevertheless it would be highly desirable to produce such protein snacks in view of the high nutritional value and low caloric content of the described protein derivatives.” Address: Minneapolis, Minnesota.

536. Abel, Mary A. 1969. Soy proteins work for homemakers. *Soybean Digest*. Nov. p. 29-32.

• **Summary:** Cakes containing soy flour have an unusual tenderness and fine texture with a fragrant aroma, good flavor and a unique moistness when served. Photos show various foods containing soy proteins made by A.E. Staley Mfg. Co., General Mills, Worthington Foods (hors d'oeuvres), and Archer Daniels Midland Co. (TVP beef-flavored sukiyaki). Three photos show General Mills Bontrae food products, including Bontrae crumbles with a flavor like beef, Bontrae rice with a flavor like chicken, and dice with a flavor like ham.

“Soy protein is also making possible the development of new foods. One new line of products, developed by Thomas J. Lipton Inc., recently won the Institute of Technology's 1969 Industrial Achievement Award, the most coveted food industry award. The winning products are the main dish

dinners, nationally distributed and well known to many homemakers. The dehydrated, shelf-stable dinners require only a few minutes preparation to become gourmet main dishes for either family or guests.” Address: Central Soya.

537. *Soybean Digest*. 1969. Burket will head new ADM specialty division. Nov. p. 50.

• **Summary:** “Archer Daniels Midland Co. has formed a new specialty division to market a variety of specialty items in the food and industrial areas, Lowell W. Andreas, ADM president, has announced. The division will be responsible for marketing industrial and edible soy products, including TVP textured vegetable protein.

“The division is to be headed by Richard E. Burket, who is joining ADM as vice president, specialty division... Mr. Burket joins ADM after 15 years with Central Soya... He will headquarter at ADM's new corporate offices in Decatur, Illinois, 4666 Faries Parkway.” A photo shows Richard Burket.

538. *Soybean Digest*. 1969. The soy foods companies. Nov. p. 40, 42-44.

• **Summary:** A summary of the U.S. companies making soy protein foods and their products. Included are Central Soya, Archer Daniels Midland Co., Swift Chemical Co., General Mills, Ralston Purina, A.E. Staley, Loma Linda Foods, Worthington Foods, Fearn Soya Foods, and El Molino Mills.

539. Altschul, Aaron M. 1969. Low-cost foods: Fortified cereals and protein beverages. In: M. Milner, ed. 1969. Protein-Enriched Cereal Foods for World Needs. St. Paul, MN: American Assoc. of Cereal Chemists. x + 343 p. See p. 82-96. [27 ref]

• **Summary:** Contents: The world food problem: Hunger and malnutrition are caused by poverty. Food quality vs. food cost. Improving food quality: Improving the quality of cereals, new protein foods. New foods program. Four generations of protein foods (history). Food distribution within the family. Discussion: The relative importance of adequate nutrition, choosing the most effective approach to improved nutrition, the nature of the problem and the value of improvements. Conclusion.

Tables: (1) New Protein Food Program of the Agency for International Development (Feb. 1967 to July 1968): Countries and products that include soya: Brazil–Krause Milling, Monsanto, Swift. Kenya–Del Monte. Pakistan–General Mills. Thailand–Archer-Daniels-Midland. India–Swift. (2) Conventional and new protein sources (incl. oilseed protein). Address: USDA, Washington, DC.

540. National Soybean Processors Assoc. 1969. Year book & trading rules–1968-1969. Washington, DC: National Soybean Processors Association. 64 p. 23 cm. Spiral bound.

• **Summary:** Contents: Constitution and by-laws (As

amended Aug. 6, 1968). Officers and directors. Names of members. List of standing committees. Trading rules on soybean meal. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}, sampling of soybean meal {automatic sampler, probe sampler}). Trading rules on soybean oil. Definitions of grade and quality of export oils. Tentative soybean lecithin specifications. Appendix to trading rules on soybean oil: Uniform sales contract, grading soybean oil for color (N.S.P.A. tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses; soap stock, acidulated soap stock and tank bottoms (only method numbers listed). Foreign trade definitions (for information purposes only). Address: 1225 Connecticut Ave., N.W., Suite 314, Washington, DC 20036. Phone: 202/659-4610.

541. Atkinson, William T. Assignor to Archer Daniels Midland Company (Minneapolis, Minnesota; a corporation of Delaware). 1970. Meat-like protein food product. *U.S. Patent* 3,488,770. Jan. 6. 6 p. Application filed 7 March 1969. 1 drawing. [8 ref]

• **Summary:** This is ADM's basic U.S. TVP patent based on extrusion cooking of defatted soybean flakes. "Abstract of the disclosure: A hydratable food product is obtained by forming a protein mix of a proteinaceous material having protein content of at least 30 percent, and preferably a solvent-extracted oil seed protein material, with 20-60 percent of water based on the weight of the protein mix, masticating this mix at temperatures substantially above the boiling point of water, and thereafter extruding this mix at elevated pressures and temperatures through an orifice into a medium of lower pressure and temperature."

This application is a continuation-in-part of application Ser. No. 587,939, filed Aug. 17, 1966, which in turn is a continuation-in-part of application Ser. No. 369,189, filed May 21, 1964, now abandoned. The present invention relates to the production of meat-like food products from vegetable, fish, and similar protein sources. More particularly, the present invention relates to the production of protein structures having a texture and appearance very similar to muscle protein found in common meat products like steaks, fowl, chops, hams, and the like."

In Example 1 the following components, listed in the order that they are added, were mixed in a ribbon blender at 120°F for about 20 minutes: 11,350 gm of extracted soybean flakes containing 50% soy protein and 6.5% moisture; 45 ml of 50% hydrogen peroxide for purposes of flavor and odor control dilutes in 380 ml water; 1,700 gm imitation beef seasoning; 3,785 ml of water, 90 gm of 97% pure sodium hydroxide; and 340 gm of calcium chloride dissolved in 500 ml of water. The resulting mixture was extruded.

In "Meat Analogs," Horan (1974, p. 375) notes that

the product described in this patent has probably had "the greatest impact in bringing the low-cost, textured vegetable products into commercialization: defatted soy flake or flour (50% protein) is put through a continuous process in an extruder to give an expanded and molecularly oriented material having textural properties described as plexilamellar. The product contains an open cell structure in which the majority of the cells have dimensions of greater length than average width and are aligned in the direction of flow of the plastic mass through the extruder. These types are commonly referred to as thermoplastic-extruded products."

Brian (1976) reports that "Approximately 60% of the soy flour and grit texturizing capacity in the U.S. is licensed under this Atkinson patent." The process yields a plexilamellar fibril and is best known in ADM's product trademarked TVP. The product resulting from Atkinson's patent was given a large new market in 1971 when it was accepted into the school lunch program in the USA.

Note 1. The Atkinson patent dominated the industry from 1970 to 1976, and during that time ADM very effectively marketed and promoted TVP. However in Feb. 1976 a very similar U.S. patent (No. 3,940,495) was issued to Ronald J. Flier and assigned to Ralston Purina. A lawsuit and trial concluded that the Flier patent now dominated the Atkinson patent because it could be traced back to a July 1964 patent application. Thereafter most large manufacturers of textured soy flour took licenses on the Flier patent—even ADM!

Note 2. Interview with Don Aldon, former soy researcher at Swift & Co. 1985. Feb. 26. In about 1963-64 Dean Wilding of Swift invented a product named Texgran; it was a textured soy flour, somewhat like today's TVP. Wilding invented a texturization process while trying to find a way to extrusion cook soy flour. He visited Wenger and saw a variety of products they made. He recognized their value and bought a machine. Aldon worked for about 18 months developing the process, doing research, and generating information to be used in the patent. Swift started selling the product before they applied for the patent. "As soon as our competitors saw this product, they recognized its value because they had been extruding dog food. Ralston Purina slammed things together and got a patent application in first. Two weeks later ADM had one in. Then 3-4 weeks later Swift applied." Swift started selling Texgran in 1964-65. The patent was finally issued in about 1971-72. Litigation went on for years and years between the three companies. Finally Ralston got the basic patent since they had applied first. ADM and Swift got a royalty-free license. They did that just to settle the litigation. Address: Minneapolis, Minnesota.

542. *Soybean Digest*. 1970. Help for a hungry world: UN meeting at Peoria. Jan. p. 18-19.

• **Summary:** "Help for hungry people of the world—based on the profit motive—was asked by a man in a United Nations

organization and promised by men in the U.S. soy food industry at a meeting in Peoria, Illinois, the week before Thanksgiving.

“Recommendations from the Expert Working-Group Meeting on Soy Protein Foods will go before the United Nations Industrial Development Organization, Vienna, Austria. If adopted, they will be incorporated into UNIDO’s official report and proposed to U.S. companies. Action of some kind appears likely.

“Action against hunger was the tone established in the opening address Nov. 17 by Dr. M. Mautner, chief of UNIDO’s light industries section, on behalf of Abdel-Rahman, UNIDO executive director, and maintained the rest of the week. With the knowledge and authority of a corporation chairman of the board and with the human concern of one of the family, Dr. Mautner held the meeting to a central theme:

“Industry in countries like the U.S. and Japan can make a profit and help hungry people feed themselves by setting up food processing companies in developing countries and hiring native labor.

“Action was in a statement, with working committees to implement it, proposed Nov. 21 for recommendation to UNIDO. Prepared by Wayne Gottshall of Ralston Purina International, St. Louis [Missouri]; Dr. Dale W. Johnson of Crest Products Inc., Park Ridge, Illinois; and Dr. Jaan I. Tear of Alfa-Laval AB, Tumba, Sweden, the statement read:

“The food-processing and food-equipment-manufacturing industries present would like to express their willingness to cooperate with UNIDO and other UN agencies in seeking realistic ways of meeting the nutritional requirements in the developing countries.’

“Examples in India and Uganda of the kind of action asked and promised were described by Charles Purrett, vice president of international operations for Worthington Foods Inc., Worthington, Ohio. This company has a 30-year, profit-making history of manufacturing food from soy and wheat proteins.

“Companies in Uganda, India: It has an interest in Africa Basic Foods, which makes high protein food from soybeans near Kampala, Uganda. Mr. Purrett said it ‘has contributed a substantial amount of money in addition to technical people, who are in Africa at the moment on Worthington’s payroll.’

“Between 1965, when the Uganda plant was built, and 1968, soybean production increased 12 to 15 times, increasing income from farm and factory jobs. About 120 tons of soybeans went into human food in 1968. Worthington helped develop Vegetable Industries & Products in India. L. Nagaich, managing director, said, ‘Worthington has a humanitarian interest with commercial success as a prime force.’

“‘Action-oriented’ UNIDO, according to Frank K. Lawler, editor of *Food Engineering*, wants industries ‘to stand on their own merits in self-sustaining, profit-making

enterprises while benefiting the developing countries nutritionally and economically.’ He visited UNIDO in Vienna, traveled with Dr. Mautner in the U.S., then joined the working group in Peoria.

“More than 40 soy protein-food scientists, industrialists and equipment manufacturers from 15 countries met 4 days at the U.S. Department of Agriculture’s Northern Utilization Research Laboratory of the Agricultural Research Service and a day at the University of Illinois, Urbana.

“Current efforts are not enough: Dr. Mautner said the most challenging problem of mankind today is to produce enough food at a cost the hungry can pay; but current efforts are not enough. Production is not keeping pace with demand. Protein has not received the expected interest in developing countries. Some foods are not satisfactory because they are incomplete nutritionally, cost too much or do not taste or look right.

“Dr. Mautner considers unsatisfactory any program that depends on subsidy by a donor country. He asked for transfer of know-how to developing countries and repeated the request in various ways throughout the meeting.

“Dr. Robert J. Dimler, director of the Northern Laboratory, reviewed history of U.S. soy development, especially the use of protein in food. G.C. Mustakas reviewed Northern Laboratory research on soy flours and their use in human nutrition.

“Dr. K.A. Harkness, Ohio State University agricultural engineer, sees soy products and other non-animal food as the only way man can cope with overpopulation and pollution in the future.

“Other scheduled speakers at the Northern Laboratory included: Mogens Jul, secretary of the United Nations Protein Advisory Group; Dr. Tokuji Watanabe, Japanese Ministry of Agriculture and Forestry; Dr. Edwin W. Meyer, Central Soya, Chicago; and L.C. Adolphson, Archer Daniels Midland, Decatur, Ill. Scheduled speakers at the University of Illinois included: Dr. G.K. Brinegar, Dr. D.E. Alexander, Dr. R.L. Cooper, Dr. E.R. Leng, and Dr. John Hetrick.

“Experiences in making acceptable, nutritious food with soy products were reported at Peoria by Dr. Shiro Miyasaka, Brazil; Dr. Isaac A. Akinrele, Nigeria; Amara Bhumiratana, Thailand; and Armando Civetta, Colombia. Dr. Mautner closed the meeting with a call for demonstration plants in Nigeria, Thailand and Latin America.

Photos show: (1) Dr. Robert J. Dimler, Director of the USDA Northern Utilization Research Laboratory, welcomes Dr. M. Mautner of the United Nations Industrial Development Organization and the Expert Working Group. (2) Dr. Dale W. Johnson of Crest Products answers a question at meeting.

543. Elliot, Rose. 1970. Cooking with Protoveg (TVP). *British Vegetarian*. Jan/Feb. p. 154-57.

• **Summary:** Made from soya protein and highly nutritious,

Protoveg “brings a new dimension to vegetarian cooking because it can be used for so many dishes where nuts would be unsuitable, or as a change from nuts.” Protoveg can be obtained by mail order from Direct Foods Ltd., C.I.W.F. [Compassion in World Farming], Copse House, Liss, Hants. [Hampshire, England]. It is also for sale at the Beauty Without Cruelty Boutique, 49 Upper Montagu Street, London, W.1.

Gives recipes for Protoveg Bechamel and for Protoveg Roast with Lemon and Parsley Stuffing.

544. Associated Press (AP). 1970. Test meal turns out exciting. *Hartford Courant (Connecticut)*. March 29. p. 19A.

• **Summary:** Secretary of Agriculture Clifford M. Hardin sat down to a meal composed—as the official menu said—of “textured vegetable protein products.” These were made largely from soybeans. “The hors d’oeuvres, which contained no meat, included scallop coquilles, jambon diable [ham], pinwheels and empenados.

The three entrees, which contained both soy and meat, were meat loaf (38% soy), meat patties (30% soy), and sloppy joes (40% soy). There were also soy-oriented dessert, cookies, and candy.

The luncheon was sponsored by General Mills and Archer Daniels Midland, two of America’s largest food processors and users of agricultural products. It is part of a larger trend in the food industry to “help improve nutrition at lower costs to consumers.”

Dr. Aaron M. Altschul, an expert in the field, “said the textured soy food already has involved a high degree of sophistication.”

A chart was displayed at the luncheon showing the cost savings that can be expected by the use of soy extenders in large lots of ground beef. For example, if 40.2 pounds of textured soy protein is added to 100 pounds of ground beef, the cost savings would be 23% or 12 cents a pound.

545. Rackis, J.J. 1970. Re: Visit to Archer Daniels Midland (ADM), Decatur, Illinois. Letter to OC Files, April 8. 2 p. Typed, with signature on letterhead.

• **Summary:** “After touring the new research facilities of ADM, discussions were held with most of the research department. As stated by Drs. Horan, Pour-El, Hamby, Wilkinson and others, there are four areas of research that are of great importance.”

1. Basic research, with respect to the basic chemistry of soy protein. 2. Nutrition: Dr. Horan said that research should be directed toward increasing the nutritional value of soy products. 3. Flatulence: Research directed toward removal and/or inhibition of flatus factors. 4. Flavor. How to improve flavor and reduce undesirable flavors. Address: Principal Chemist, Oilseed Crops Laboratory.

546. Hayward, J.W. 1970. Do it yourself with soybeans

(Letter to the editor). *Feedstuffs*. April 14. \*

547. Archer Daniels Midland Co. 1970. See what you can do with TVP, fabulous new food (Ad). *Food Engineering* 42(4):Inside front cover. April.

• **Summary:** In the top half of this ad is color photo of an overhead view of what looks like a meat and vegetable stew in a cast-iron pot.

The text below reads: “This dish was made with fresh vegetables and TVP® textured vegetable protein. It could also have been made with TVP plus meat. Either way, it could hardly look or taste better... or be more nutritious or economical.

“TVP is the exciting, new all-vegetable textured protein source made by ADM and marketed world-wide.

“It is available in granular, chunk, strip, and chip forms. It comes unseasoned, or with flavoring of almost any kind—meaty, nutty, tangy, and salty. Easy to handle and to store and completely controlled in texture, flavor, and color, TVP textured vegetable protein is exceptionally well-suited for institutional feeding and restaurants. It’s an excellent enrichment for casseroles, snacks, stews, gravies, sausages, ground meats, and many convenience foods.”

In the bottom right is a coupon. Address: 4666 Faries Parkway, Decatur, Illinois 62526.

548. Lambert, Eugene I. 1970. Re: Petition to establish a definition and standards for a new class of foods to be known as Tegretein products. Letter to Commissioner of Food and Drugs, Dep. of Health, Education and Welfare, 5600 Fishers Lane, Rockville, Maryland 20852, May 20. 29 p. Typed, without signature (carbon copy).

• **Summary:** This petition consists of three parts: (1) Cover letter (2 p.). (2) Attachment A—Proposed regulations: Tegretein products; identity; label statement of optional ingredients. Tegretein products; quality; label statement of substandard quality (8 p.). (3) Attachment B—Statement of grounds. Introduction: History of the proposal. The general approach: A single standard. Detailed explanation: Identity standard, quality standard, summary (19 p.).

The cover letter (from attorneys for the Tegretein Industry Group) begins: “The undersigned submit this petition pursuant to Section 701(e)(1)(B) of the Federal Food, Drug, and Cosmetic Act with respect to the issuance of regulations under Section 401 of the Act to establish a definition and standard of identity and standard of nutritional quality for a new class of foods to be known as Tegretein products. This landmark proposal is the culmination of many years of cooperative industry, scientific, and government effort, and represents a breakthrough in the creative use of existing statutory authority to advance institutional goals.”

Note: This is the earliest document seen (March 2009) that contains the word “Tegretein,” a word which abandoned in Nov. 1970. Address: Covington & Burling, 888 Sixteenth

St., N.W., Washington, DC 20006. Phone: (202) 293-3300.

549. Archer Daniels Midland Co. 1970. A fabulous new food—TVP: Add eggs or a tangy dip and see what you can do with it (Ad). *Food Engineering* 42(5):137-39. May.

• **Summary:** On the first page of this 3-page glossy color ad (on cardstock paper) is a stainless-steel spatula with reddish strips of TVP on it—above a wooden table. On the inside 2-page spread is a skillet filled with cheese-topped TVP and eggs, also above a wooden table. Address: 733 Marquette Ave., Minneapolis, Minnesota 55440.

550. *Minneapolis Star Tribune (Minneapolis, Minnesota)*. 1970. Who's news in business. June 16. p. 70.

• **Summary:** “James W. Stowell has joined Piper, Jaffray & Hopwood as a registered representative. He had been president of Ross & Rowe, a subsidiary of Archer-Daniels-Midland Co.”

551. Althoff, J.D. 1970. Die Stickstoffbilanz in einem Ernährungsversuch mit TVP [Nitrogen balance in a nutritional study with TVP (textured vegetable proteins)]. *Medizinische Klinik (Munich)* 65(25):1204-07. June 19. [15 ref. Ger]

• **Summary:** A report on a food trial with TVP, in the course of which the animal protein was almost completely replaced by TVP. Address: Dep. of Clinical Nutrition (Abteilung fuer Klinische Ernährungslehre), Inst. of Nutritional Science I (Inst. fuer Ernährungswissenschaft) I der Justus Liebig Universitaet Giessen.

552. Elliot, Rose. 1970. Cooking with Protoveg (TVP). *British Vegetarian*. May/June. p. 256-57.

• **Summary:** Gives recipes for Protoveg Slices, Protoveg Fritters, and Protoveg Stew.

553. *Ralston Purina Magazine (St. Louis, Missouri)*. 1970. Thanks to Mr. Ford. May/June. p. 26-29.

• **Summary:** Henry Ford had an eye for promising young men. And two of Ralston Purina's key research men, Frank Calvert (R&D director for new venture management) and Bob Boyer (senior scientist, central research) received a truly unique education.” In 1930 the new Chemical Laboratory opened in Greenfield Village; Calvert and Boyer were among the 15 boys from the Ford Trade School, Henry Ford's technical school in Massachusetts, who were chosen to work there. Boyer, age 21, who had attended the Ford Trade School [at the Rouge Plant in Dearborn, Michigan] from 1927 to 1930, was put in charge of the project. After deciding to focus on soybeans in 1931, they developed a process for extracting soybean oil. Every morning at 8:00 sharp, Henry Ford used to appear at Boyer's office to see how his pet project was going.

“In 1938 Frank Calvert joined The Drackett Company

in Cincinnati [Ohio], and he was followed in a few years by Boyer. ‘At Ford we were trying to make synthetic wool out of [soy] protein but the war cut these efforts short,’ says Boyer.

The work on ‘soybean fabric’ continued at The Drackett Company during the early 1940s. ‘We tested the wool fabric for salt content and other factors and one day—I’ll never forget it—it occurred to me that if we could make something for the outside of man, why not for the inside.’ That’s how it came about that in 1949 Bob Boyer filed the patent for edible soy protein fiber.

“He obtained the use of a textile pilot plant and hand made samples of ‘synthetic meats.’ Later that year, armed with a soy protein ‘ham loaf’ he contacted Worthington Foods, a firm making meat substitutes for people who shun meat for religious, health or other reasons “If they hadn’t shown interest I probably would have dropped it because I had no income at the time.’

“Swift was the first company to take out a license on the patent and Worthington followed not far behind. Soon several companies were licensed to use the patent and Boyer was kept busy with consulting work...

“In 1957 The Drackett soybean operation was sold to Archer Daniels Midland, and Calvert became technical of their protein operations. The paths of Boyer and Calvert crossed again in 1962 when they both joined soybean research activities at Ralston Purina. Boyer had worked as a consultant to Purina when the company began investigating industrial and edible uses of soybean. When he joined the company he assigned his patent ownership to Purina.”

“Back in the 1930s many people thought our work was crazy,’ recalls Boyer. ‘But Mr. Ford was shrewd enough to know’ better. ‘The best thing he did was to help popularize the soybean.’”

Photos show: Calvert and Boyer, together and separately. The automotive products made at Ford's lab being displayed in New York in 1931; Calvert and Boyer are present. Boyer and Ford conversing. Ford and Boyer standing behind the famous white “plastic” car.

554. Witham, W.C. 1970. Re: Memorandum—Three items of information regarding soybean operations. Letter to F.R. Senti, Deputy Administrator, USDA, ARS, NCIUR [Nutrition, Consumer, and Industrial Use Research], Washington, DC, Aug. 27. 1 p. Typed, without signature (carbon copy).

• **Summary:** While at the annual meeting of the American Soybean Association, Dr. Cowan was given the following information. (1) Cargill is constructing a plant to manufacture textured soy proteins from soy flour at their facility in Cedar Rapids, Iowa. These products will be similar to those produced by Swift and ADM. Staley also announced its intention to make such products, but may be delayed because of a strike that is now 4 weeks old.

(2) Land O'Lakes has purchased the Felco operations, a cooperative in Iowa with one division operating a 700- to 1000-ton a day soybean processing plant. Note: This is the earliest document seen (March 2008) that mentions "Land O'Lakes" in connection with soybeans, or that mentions Felco (in any connection).

(3) "The General Mills' plant at Cedar Rapids has gone on-stream for the manufacture of Bac\*Os. They expect to be making a complete line of Bontrae products shortly before or just after Labor Day [the first Monday in September]. The latter will be sold to institutions, restaurants, etc. initially." Address: Acting Director of Div., Northern Regional Research Lab., Peoria, Illinois.

555. Ashton, Maureen R.; Burke, Carole S.; Holmes, A.W. 1970. Textured vegetable proteins. *British Food Manufacturing Industries Research Association, Scientific and Technical Surveys* No. 62. 36 p. Aug. [92 ref]  
 • **Summary:** Contents: Introduction. Protein sources. Extraction. Spinning. Extrusion. Gelation. Other methods for generating texture. Commercial aspects. Nutritional aspects. Legal aspects. References. Appendix. The appendix contains an extensive list of patents (mostly British and U.S.) on textured vegetable proteins grouped by the company assigned to or inventor. For each patent, the inventors, country, patent number and year are given, with a brief description of the subject. No patent titles are given in either the appendix or bibliography. The companies/inventors are Archer Daniels Midland Co. (2 patents), R.A. Boyer (3), F.P. Research Ltd (1), General Foods Corp. (7), General Mills Inc. (23), C. Giddey (1), J.H. Kellogg (2), Lever Bros. and/or Unilever (20), G.K. Okumura and J.E. Wilkinson (1), Ralston Purina (4), Swift & Co. (4, including 2 listed for R.A. Boyer), Dr. A. Wander A.-G. (2 Swiss), Worthington Foods Inc. (2), C.L. Wrenshall (1). Address: 1-2. BSc; 3. PhD, FRIC. All: British Food Manufacturing Industries Research Assoc., Randalls Road, Leatherhead, Surrey, England.

556. Hayward, J.W. 1970. 50 years of soybean meal. *Soybean Digest*. Aug. p. 78-83. [16 ref]  
 • **Summary:** "To my knowledge no feed ingredient in the U.S. compares with soybean meal in its importance to our human food supply from animal and poultry sources. Its timely increase in availability (table 1) and high content of potentially excellent quality of protein (2, 3, 5, 6, 8, 9) made it possible for farmers and commercial growers to increase materially the production of poultry meat, both chicken and turkey, as well as pork, beef, milk, and eggs, over the past 40 years.

"In fact, this nutritional discovery for monogastric animals and the increase in protein as soybean meal were timed just right so that the men and women in our armed forces everywhere during World War II could receive

adequate meat products. Yet back home we had to have meat rationed for only a very short time.

"The U.S. production of chicken broilers was pretty much a seasonal business even by the late twenties. In fact, the total production in 1934 was only 34 million birds. It increased to 310 million broilers by 1947. But today the production of U.S. chicken broilers exceeds the 2½-billion mark annually (11). This segment of the poultry industry alone must use in excess of 2½ million short tons of soybean meal annually (44% or 49% protein type). Currently most of our U.S. broiler rations contain 25% to 28% soybean meal. They contained little or none even by 1930.

"Chicken layers and turkeys for meat (11) bring the annual requirement of poultry for soybean meal up to some 4½ to 5 million short tons. I estimate also that U.S. hogs will require another 3 to 4 million short tons annually of soybean meal. The turkey diet in 1930 contained no soybean meal, while the one in 1969 contains 37% and seems to be well balanced nutritionally in all respects.

"The 1908 Minnesota hog ration contained no soybean meal—6.3% in 1947, 10.3% in 1953, and 20% in 1958 with ground yellow corn at 77.5%. (11). The 1958 Illinois hog ration contained 76.10% ground yellow corn and 20% of soybean meal (11).

"In view of all of the increase in numbers of our animals and poultry for meat, which require more of our domestic soybean meal each year, it may come as a surprise to many that at the same time we have been increasing considerably our exports of soybeans and soybean meal. This year, soybean meal exports should exceed 3 million short tons. Soybean exports are likely to exceed 400 million bushels, with soybean oil about holding its own on exports at somewhat less than 1 billion pounds.

"Here are some of the many pertinent highlights over the past 50 years, concerned with the nutritional, product development, and promotional aspects of our U.S. soybean meal:

"Nutritional: 1—Discovery of the mineral deficiencies of soybeans and soybean meal, especially calcium and phosphorus, during the early twenties.

"2—Unextracted soybeans, raw or heated, tended to produce objectionable soft carcasses and soft fat when fed at 14% or more of the entire ration to young pigs (50 to 60 pounds) in drylot and continued on to market weights of 200 to 250 pounds-years 1930-35 (12, 13).

"3—The protein of raw soybeans and underheated soybean meal had favorable amino acid content but failed to produce satisfactory growth of white rats, baby chicks, and pigs. The same was suspected for humans (2, 3, 5, 6, 7, 8, 12, 13, 15, 16).

"4—Proper cooking greatly improved the biological value of the protein of soybeans and soybean meal made by either of the three processes of oil extraction—hydraulic, expeller or screw press, and the continuous solvent extraction method.

Dry heat was usually ineffective. Overheating was about as bad as raw or underheating of soybeans and soybean meal for improving the biological value of its protein for laboratory rats, chicks, and pigs. (2, 3, 5, 8, 12, 15).

“5–Riboflavin needed in soybean meal rations for young poultry and pigs was discovered and made available in crystalline form from 1935-37. Many other B-complex vitamins and essential trace minerals were identified. The limitation of phytin phosphorus in soybeans and soybean meal was reported.

“The animal protein factor (APF) required in soybean meal rations for young monogastric animals and poultry was identified, given the name of vitamin B-12, and made available in a concentrated form about 1948.\*

\* Footnote: “One of the finders of B-12 was Geo. M. Briggs of the University of Minnesota, son of George Briggs of Wisconsin, a founder of the American Soybean Assn. See the latter’s article on page 50.

“Some of the antibiotics were also identified and produced initially for use in feeds in the late forties (11, 12).

“The Sept. 6, 1969, issue of Feed-stuffs (11) is an excellent source of information on most of these basic early nutritional discoveries and developments.

“6–By the early to mid-forties proof was available that we could use high levels of a properly cooked soybean meal in improved poultry and pig feeds to replace all but some 3% of the animal-source proteins such as fish meal, meat scraps, and dried skim milk (9, 12).

“7–The formula for the original Connecticut Broiler Ration was released in 1947. Its supplemental protein was largely a combination of 8% soybean meal, 8% meat and bone scraps, and 8% fish meal.

“To my knowledge, the latest version of the ANRC (Animal Nutrition Research Council) reference diet for broilers was released in May 1956. It contained 27.98% of the 50% protein (now 49%) de-hulled soybean meal, 60.7% ground yellow corn (grade No. 2) and very little animal source protein.

“8–Cornell University investigators at Ithaca, New York, conducted a considerable amount of excellent research on heated full-fat soybean meal as well as determined on chicks the metabolizable energy of various soybean products (2, 13).

“9–In 1949, the uniform rules and standards committee for soybean meal in cooperation with the Soybean Research Council, both of NSPA (National Soybean Processors Assn.), conducted an industry survey and prepared a soybean meal exhibit for members of the Nutrition Council of AFMA (American Feed Manufacturers Assn.) at their midwinter meeting. The samples collected consisted of 28 different expeller meals and 25 solvent extracted meals. The first choice of the Nutrition Council (AFMA) was a 44% protein solvent extracted soybean meal. This meal was practically nondusting with 1.2% for the total portion through a

combination of 80-, 100-, and 200-mesh screens, and its PER (Protein Efficiency Ratio) was excellent. These features are still preferred by the majority of our feed industry of today.

“10–There was no substitute years ago (1940-1960) and there is none that I know of today for actual periodical animal feeding tests supplemented by proven laboratory tests for use by the soybean processor in maintaining top performance of his daily soybean meal production when it is to be used in current critical feeds for young monogastric animals and poultry (2, 3, 8, 12-16).

“11–In the early fifties a top-ranking industrial firm interested in feed additives conducted chicken broiler feeding tests to compare five different name brands of soybean meal. Two meals were close, with the best one worth \$55 more per ton than the poorest of the five meals. The additives used in most broiler feeds today would overcome a part of this difference but not all of it. Most additives are expensive and some of them need not be used at all if the soybean meal is precision cooked (toasted) and periodically animal tested.

“12–Urea is on the increase, replacing a part or all of many of the natural proteins such as soybean meal in feeds for ruminants, especially for growing and fattening beef cattle. There is good evidence favoring a combination of urea and soybean meal for beef cattle.” Continued. Address: Consulting specialist, Minneapolis, Minnesota.

557. Hayward, J.W. 1970. 50 years of soybean meal (Continued–Document part II). *Soybean Digest*. Aug. p. 78-83. [16 ref]

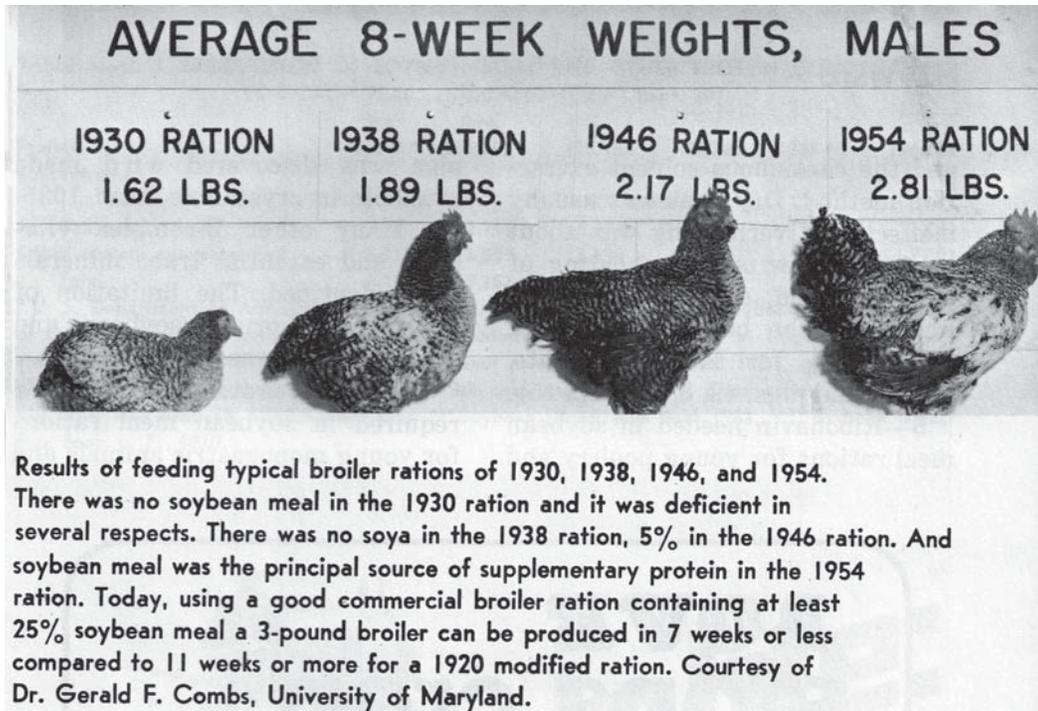
• **Summary:** Continued: “This mixture results in better acceptance of the urea with the economy as good or better because of the improved performance of the animals in the feedlot, a higher selling price at the market, as well as a higher dressing percent and an upgrading of the carcasses when slaughtered.

“Product development:

“1–Most of the early processing of soybeans was with expellers or screw presses. There was a gradual but definite shift during the late forties and early fifties to continuous solvent extraction for processing soybeans. For the past 10 years or more here in the U.S. some 97% solvent and 3% expellers or screw presses have been used for processing our soybeans.

“It is mandatory, however, that for the solvent process hexane or another proven material be used as the solvent. For a time, up until the summer of 1952, a few small extraction plants used trichloroethylene as the solvent with mostly disastrous results from feeding the meal to ruminants.

“2–In 1947 a couple of large soybean processors began making a dehulled soybean meal for high-energy poultry and hog rations. This was then a 50% protein meal and referred to in most instances by that name. Today several processors make this type of meal and refer to it generally as 49% soybean meal (2, 8).



“3—There has been over the past several years some interest expressed in a cooked unextracted soybean meal for use in swine and poultry feeds. (2). In fact, quite recently units for roasting or heating beans by extrusion on the farm have been made available to farmers (13).

“4—Soybean meal for use in feeds leads all other soy protein products in quantity. However, some special soybean meal is produced for industrial uses, and soy protein products as flour, grits, flakes, protein concentrates, and protein isolates are produced in several hundred million pounds annually for food and industrial uses. Soy lecithin is another important product from soybeans (2).

“Promotional Aspects: 1—In 1937 the National Soybean Processors Assn. (NSPA) organized the Soybean Nutritional Research Council on the insistence mostly of my good friend and boss at the time, Whitney Eastman. Back in those days, our Council membership consisted of J.E. Hunter, H.E. Robinson, K.J. Seulke, Lyman Peck, Lamar Kishlar, J.L. Gabby, K.J. Maltas, and J.W. Hayward.

“2—Our Council had lots of work cut out for it, but its initial function was to promote the use of soybean meal in feeds for livestock and poultry. It is hard to believe now that back in the twenties and even most of the thirties soybean meal was an unknown item to many firms of our feed industry and practically all nutritionists at our state agricultural experiment stations.

“3—A classic trip was made out east in 1938 by one of our special committees consisting of Dr. J.E. Hunter, Lyman Peck, and myself to call on USDA nutritionists at Beltsville, as well as at state colleges and agricultural experiment stations. Six states, Maine, New Hampshire,

Vermont, Massachusetts, Connecticut, and Rhode Island, as I recall, were not using a pound of soybean meal in their New England Conference formulas for poultry. We changed their minds shortly on that score. We also visited at College Park, Maryland (University of Maryland), and at Cornell University at Ithaca, New York. One man, Colonel Howe at Beltsville, was largely responsible for our Council preparing an extensive literature review (Blue Book), on soybeans and soybean meal.

4—Our Soybean Nutrition Research Council had a booth with some of our men on hand at many state fairs, the International Livestock and Agricultural Products Show in Chicago, and a World Poultry Congress in Cleveland, Ohio. We also supplied speakers on soybean meal for many state nutrition conferences.

“5—The Soybean Council of America Inc. was formed in 1956 to promote soybean products in some 40 countries of the free world (2). Several of us oldtimers as well as many new enthusiasts from our state universities and experiment stations represented the Soybean Council at many trade fairs and nutrition conferences in several countries overseas in the interest of soybean oil and soy protein products such as meal, flour, and grits.

Photos show: (1) Dr. Hayward, who “has long been recognized as a leading authority on livestock and poultry feeding. He was director of nutrition for Archer Daniels Midland Co. from 1935 to 1960. He was director of nutrition for the Soybean Council of America and undertook many assignments overseas from 1960 to 1964.”

(2) Two white pigs: “Littermate barrows. The smaller pig was fed a typical ration of 1908, which did not contain

soybean meal and was nutritionally deficient in several respects. The larger pig was fed a nutritionally adequate corn-soybean meal ration typical of 1958.”

(3) Male broiler chickens, average 8 weeks of age. Five side-by-side photos show: 1930 ration, bird weighs 1.62 lbs. 1938 ration, bird weighs 1.89 lbs. 1946 ration, bird weighs 2.17 lbs. 1954 ration, bird weighs 2.81 lbs.

Tables: (1) Production of soybean meal and other protein concentrates for crop years indicated (Oct. 1 to Sept. 30). Sources: \* U.S. Department of Agriculture Statistical Bulletin No. 85, Dec. 1949, for soybean meal and many of the other protein sources. \*\* Ingredients included with any production in 1,000 short tons for cottonseed meal 2,289.5, linseed meal 491, peanut meal 88.8, copra meal 103.5, gluten feed and meal 106.2, tankage and meat scraps 1,341, fish cake and meal 251.7, dried milk products 166.2, and other milk products 1,022.3 short tons. \*\*\* Soybean Digest Blue Book 1962. \*\*\*\* Soybean Digest Blue Book, p. 71, 1970. Address: Consulting specialist, Minneapolis, Minnesota.

558. *Soybean Digest*. 1970. ASA's honorary life members 1946-1969. Aug. p. 40-41.

• **Summary:** See next page. A full-page photo shows individual photos of the men awarded this honor:

1946–W.J. Morse,\* agronomist, USDA, president, ASA; W.L. Burlison,\* chief, agronomy division, University of Illinois, president, ASA. 1947–I.C. Bradley, J.C. Hackleman, G.G. McIlroy. 1948–J.B. Edmondson, David G. Wing, C.M. Woodworth. 1949–Keller E. Beeson, Jacob Hartz Sr., E.F. (Soybean) Johnson.

1950–G.H. Banks, E.J. Dies, Taylor Fouts. 1951–Frank S. Garwood, James W. Hayward. 1952–Garnet H. Cutler. 1953–George M. Briggs. 1954–J. Ward Calland. 1955–Geo. M. Strayer. 1956–J.L. Cartter, John P. Gray. 1957–Howard L. Roach, Ersel Walley. 1958–Harry W. Miller. 1959–John W. Evans, W.E. Hodgson.

1960–Frederick Dimmock, Edgar E. Hartwig. 1961–Shizuka Hayashi, Albert H. Probst. 1962–Chester B. Biddle, Joseph E. Johnson. 1963–Allan K. Smith, C.R. Weber. 1964–A.J. Ohlrogge, Leonard F. Williams. 1965–Russell Davis, Jake Hartz Jr. 1966–Dwayne Andreas, Dale W. McMillen. 1967–Whitney Eastman, Chas. V. Simpson. 1968–Herbert W. Johnson, John Sawyer, Walter W. Sikes. 1969–Frederic R. Senti, Hays Sullivan.

As shown above with Burlison and Morse, with each person's name is give their current position or title, whether or not they are still living (\* = deceased), and offices they have held in the American Soybean Association (ASA). Page 41 is filled with small, individual photos of each of ASA's honorary life members.

559. Weller, Paul. 1970. Birth of an industry. *Soybean Digest*. Aug. p. 58-59, 61.

• **Summary:** A fairly good, brief history of the soybean

crushing industry in the USA, and the National Soybean Processors Association. Soybeans had been grown in America “since about 1804. Civil War soldiers carried them as ‘coffee berries,’ using them to brew ‘coffee’ when the real product became scarce.”

The first soybeans in America “were likely crushed as early as 1910, among the Chinese in California. Oriental emigrants were then importing soybeans from China and Manchuria, and crudely crushing them for cooking oil. These early efforts were followed by commercial activity among several North Carolina cottonseed mills. In 1915, when cottonseed became scarce, the mills substituted locally grown soybeans.”

“On a warm fall day [Sept. 30] in 1922, A.E. Staley Sr. pulled a master switch on the nation's first commercial soybean processing plant. He helped inaugurate a new industry offering, for the first time, a key commercial market for America's soybean crop. The place was Decatur, Illinois...”

“Role of the processors: Several commercial leaders saw the promise of soybeans by 1920. They also saw a need for expanded markets, if farmers were to receive a fair return for their crop. Acreage was expanding fast—Illinois had 16,000 acres in 1919, with Indiana having only several hundred. But by 1922, this total had doubled, and farmers were rushing to plant more. A.E. Staley Sr. started with his processing mill at Decatur. The following year, Eugene D. Funk Sr. set up the nation's second commercial processing plant at Bloomington, Illinois. Funk, a pioneer seed producer and an organizer of the American Soybean Assn., recognized that domestic processing operations would be necessary to move the fast-growing soybean crop—by then estimated at over a half-million acres.

“These early processors faced seemingly insurmountable odds. It was nearly impossible to obtain a steady supply of soybeans to maintain their plants. It was just as difficult to dispose of soybean oil meal and flour. No one would buy it in 1924, and few persons would accept it as a gift. It was even difficult to sell the domestically produced soybean oil, because buyers considered it grossly inferior to imported oils.

“The answer lay in extensive programs of education, and the early processors accepted this responsibility. Working closely with state universities and extension services, they helped develop bulletins to help farmers produce more soybeans. Marketing teams fanned out to ‘sell’ U.S. soybean oil and meal products.

“One of the most unique projects ever attempted was a special Soybean Exhibit Train, supplied by the Illinois Central Railroad. Soybean processors and USDA extension personnel equipped and staffed the train to tell the soybean story to the nation. In 21 days [during 1927], the six-car soybean train traveled 2,478 miles, to 105 towns across America. Nearly 34,000 persons toured its varied soybean



W. J. Morse



W. L. Burlison



I. C. Bradley



J. Hackleman



G. G. McIlroy



J. B. Edmondson



David G. Wing



C. Woodworth



Keller E. Beeson



Jacob Hartz Sr.



E. F. Johnson



G. H. Banks



E. J. Dies



Taylor Fouts



Frank Garwood



J. W. Hayward



Garnet Cutler



Geo. M. Briggs



J. Ward Calland



Geo. M. Strayer



J. L. Cartter



John P. Gray



Howard Roach



Ersel Walley



Harry W. Miller



John W. Evans



R. E. Hodgson



F. Dimmock



E. E. Hartwig



Shizuka Hayashi



A. H. Probst



Chester B. Biddle



J. E. Johnson



Allan K. Smith



C. R. Weber



A. J. Ohlrogge



Leonard Williams



Russell Davis



Jake Hartz Jr.



Dwayne Andreas



Dale McMillen



Whitney Eastman



Chas. Simpson



Frederic Senti



John Sawyer



Walter W. Sikes



H. W. Johnson



Hays Sullivan

product exhibits.

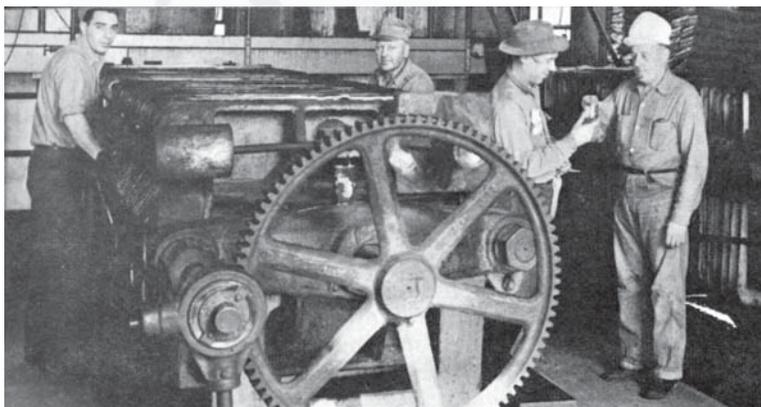
“Formation of NSPA: The soybean processing industry was expanding enough by 1930 to warrant a national association of processing firms. A committee was set up under the leadership of Whitney H. Eastman of Archer Daniels Midland Co. Eastman called an organizational meeting for May 21, 1930, at Chicago’s downtown City Club. Twelve processing firms were represented, including A.E. Staley Mfg. Co.; Archer Daniels Midland Co.; Allied Mills Inc.; Funk Bros. Seed Co.; and Spencer Kellogg & Sons.

“The meeting gave birth to the National Soybean Oil Manufacturers Assn., forerunner of today’s National Soybean Processors Assn. Eastman, now retired in suburban Minneapolis, recalls the original Association objectives: “To promote in the industry a mutual confidence and a high standard of business ethics; to eliminate trade abuses; to promote sound economic business customs and practices; to foster wholesome competition; to provide ultimately for individual efficient business management operating independently and thus generally to promote the service of the industry in the public welfare.”

“Other industry benefits came out of the formation of a processors’ association. Prior to this time, prices for soybeans were largely determined by demand and supply for soybean seed. Establishment of new markets for processed products and the rapid expansion of soybean acreage due to new demand changed this structure. During the early 1930’s, prices were based on demand for oil and meal, and generally improved as demand increased. At one point, the price per bushel increased from 60¢ to \$1.23.

“NSPA formed a variety of committees to service the burgeoning industry. There was a research and trade promotion group, a soybean grades and contract group, traffic and transportation group, as well as committees on statistics and industry liaison. These formed the nucleus of NSPA’s current slate of 13 specialized committees.

During NSPA’s first 25 years, U.S. soybean acreage jumped from 3,473,000 acres yielding 13,929,000 bushels—to 21 million acres yielding a crop of 457 million bushels. By 1956, soybeans were second only to corn in cash farm



income on the nation’s farms.

“It was during this first 25 years that most of today’s major soybean processors entered the business. Central Soya Co. shipped its first load of soybean oil on December 8, 1934, from its plant at Decatur, Indiana. Swift & Co. built its first expeller soybean mill at Champaign, Illinois, in 1937, followed by a second mill at Des Moines, Iowa in 1939. At about the same time, Quincy Soybean Co. was formed at Quincy, Illinois, Cargill Inc. entered the field in 1943 at Minneapolis [Minnesota], and other major processors followed quickly the industry’s challenge.”

Photos show: (1) The Elizabeth City Oil & Fertilizer Co. in North Carolina, generally believed to have been the first to process U.S. grown soybeans. A test run was made on 10,000 bushels in Dec. 1915. (2) The soybean crushing plant in the Funk Bros. Seed Co., Bloomington, Illinois, installed in 1924. (3) The Archer Daniels Midland Co. solvent extraction plant in Chicago, Illinois, in about 1946. (4) One group of the nearly 34,000 people visiting the “Soybean Special” train in 1927. Inside its six cars was the story of the soybean industry as it existed at that time. Address: National Soybean Processors Assn.

560. Archer Daniels Midland Co. 1970. Fiscal 1970 annual report. 4666 Faries Parkway, Decatur, Illinois 62525.

• **Summary:** Net earnings after taxes were \$8,737,355. Address: Decatur, Illinois.

561. Bure, Jean. 1970. La production de viandes végétales [The manufacture of meat alternatives {vegetable meats}]. *Economie Rurale (L’)* No. 85. p. 177-81. July/Sept. [Fre]

• **Summary:** Some cereal and animal proteins share a common past (e.g., the experience of Beccari in 1728, Liebig’s hydrolysates, etc.) However, most of the new synthetic meats appearing in the U.S. are derived, not from cereals, but from the soybean.

Huge milling groups have put on the market these new “vegetable meats.” These products were presented in France at the *Salon des Industries de l’Alimentation (S.I.A.L.)* in 1966 and 1968.

The making of “vegetable meats” consists in the production of protein fibres from a concentrated extract to which a structure similar to that of meat is given. This is done by spinning out and by shredding.

The makers are well aware that they cannot compete with meat, but they want to create new money-making products completing their ever-expanding range of convenience foods.

Note: Within this article is another article (p. 176-81) titled *Le Fabrication de Viandes Vegetales*, by M. Munier (*Ingénieur ENSIA à l’ARIA*) which has these contents: Historical (Boyer, how to make spun protein fibers). Importance of research

enterprises. Production of protein fibers: Extraction of pure proteins [soy protein isolates], formation of the fibers. Research on a structure analogous to that of meat. Other processes for the manufacture of vegetable meats: Shredding (U.S. Patent 3,047,395 of 1962), extrusion–expansion (British Patent 1,049,848), others (aside from Ford, the great captains of industry have likewise obtained patents: Swift, Unilever, General Foods, Nabisco, Worthington Foods, Ralston Purina, General Mills, Pillsbury Mills, etc.). Some new products: Bontrae, TVP, Textrasoy, Texgran, Edi Pro. Organoleptic and nutritional aspects: Organoleptic problems, nutritional problems. In conclusion, by J. Bure. FAO estimates the as follows the annual protein available to human beings: (1) Animal proteins, 30 million metric tons, of which about 10 million come from meat and poultry, about 4 million come from fish and other seafood, and about 2 million come from eggs. (2) Vegetable proteins, 150 million tons. of which about 110 million come from cereals, about 20 million come from oilseed cakes (including soya), and nearly 10 million come from legumes.

Therefore, there is 5 times as much vegetable protein available as animal protein. But animal protein is of higher quality. Address: Directeur du Département des industries céréales de l'École nationale supérieure des industries agricoles et alimentaires.

562. *Food Product Development*. 1970. Legal developments: Nutritional quality is basis for identity standard for proposed class of functional proteins. 4(5):12. Aug/Sept.

• **Summary:** “A new class of materials, *Tegretein* products, will be established if a recent proposal from Archer Daniels Midland and General Mills is enacted by FDA.” The biological quality (biological activity) of *tegretein* must be at least 70 per cent that of casein.

563. Winson, Abraham; Hampson, Ernest Jeffreys. Assignors to Arkady New Foods Ltd. (a Company of Arkady Soya Mills). 1970. Production of dairy products. *British Patent* 1,314,870. Application filed: 10 Oct. 1970. 3 p. Complete specification filed: 4 Oct. 1971. Complete specification published: 26 April 1973.

• **Summary:** “This invention relates to the production of dairy products such as milk and cheese from soya beans.”

Milk as conventionally produced by cows is in fact a very uneconomical process. It has been shown that a cow converts into milk only one eighth by weight of the foodstuffs ingested.”

The lactose in milk can also be a problem; it crystallizes when milk is condensed, especially upon aging.

“Example 1: 200 gms. of soya beans having 90% total dry solids were ground and added to 1800 mls. of water together with 60 gms. of maltose produced by enzymatic hydrolysis of starch and 1.5 gms. of calcium carbonate.

“The resulting mixture was heated at 55°C for about

1 hour. After cooling the mixture was passed through a sieve and centrifuge and the fibrous and insoluble material removed therefrom. (The fibrous and insoluble material was found to contain 31% protein, 20% fat, 10% fibres the balance being sugar and minerals and after drying yielded a valuable animal foodstuff.)

“The sieved mixture was then boiled to coagulate the protein and thereafter cooled to about 60°C at which temperature the mixture was homogenised in the presence of 1% by weight of glyceryl mono-stearate based on the weight of fat contained in the mixture.

“Between 10 and 30% of this homogenised mixture was combined with hydrogenated palm kernel oil, glyceryl monostearate and lecithin to form a cream and the cream thereafter added to the remainder of the homogenised mixture and re-homogenised.

“The re-homogenised mixture was cooled to ambient temperature and aged, the resulting product having a pH of 7.5 and resembling milk in taste, appearance and analysis.

“Example 2. To 300 lb. water at 50°C containing 0.34 lb. sodium carbonate was added 45 lb. enzyme active, full fat soya flour. The mixture was stirred vigorously for 1 hour. After this the insoluble material [okara] was removed by centrifugation. The resulting liquor was boiled and thereafter cooled to approximately 70°C. 12 lb. of a high maltose containing corn syrup was added and sodium carbonate was added to achieve a pH of 7.5.

6½ lb. hydrogenated palm kernel oil were melted together with 1 oz. glyceryl monostearate and 1 oz. lecithin, and a cream formed with approximately twice the volume of hot liquor.

The cream was recombined with the majority of the liquor and the whole homogenised and cooled. 290 lb. milk was obtained with the appearance and proximate analysis of cow's milk.

“The invention is not restricted to the above described specific examples many variations thereof being possible without departing from the scope thereof.” Address: Old Trafford, Manchester, England.

564. Archer Daniels Midland Co. 1970. You think maybe people won't like your pizza if it looks and tastes better and costs less? (Ad). *Soybean Digest*. Nov. p. 26-27.

• **Summary:** An ad for TVP brand Textured Vegetable Protein. Address: Box 1470, Decatur, Illinois 62525.

565. Dimler, R.J. 1970. Soy food opportunities through research. *Soybean Digest*. Nov. p. 17-23. [13 ref]

• **Summary:** Contents: Introduction. Research on edible oil. The use of plant proteins for food. Comparative cost of food proteins. Alternative plant protein sources. Food uses of soy protein (soy flour or grits, concentrates, and isolates). Full-fat soy flour. Cereal-soy combinations (e.g., CSM, which “is intended primarily to be a food supplement for children”).

The market in Oriental foods [tofu, miso, soy sauce].  
Conclusion.

Photos show: (1) A small portrait photo shows R.J. Dimler. (2) Foods containing full-fat soy flour: soy milk, chapatis, soy cookies, and CSM. (3) Meatloaf, without and with soy protein. (4) Peruvian children sitting in the rubble of the earthquake on 31 May 1970 that killed 66,000 people. "Fifty tons of high-protein food (TVP) were recently shipped by CROP, the community hunger appeal of Church World Service to earthquake victims."

Tables show: (1) Flavor score improvement of soybean oil with new copper catalyst (plus linolenic acid content). (2) Comparison of flavor scores of copper-reduced (+ no linolenic acid) soybean oil with cottonseed oil. (3) Efficiency of land use. Soybeans (yield: 24 bushels/acre) can produce 500 lb of protein per acre, compared with 320 lb for corn, 180 lb for wheat, 100 lb for milk, and 60 lb for beef. (4) Comparative prices of edible protein products: Beef costs \$2.55 per pound of protein, whole milk solids \$1.00, isolated soy protein \$0.40, and 50% soy flour \$0.14. (5) Costs and production estimates of soy proteins: Flours and grits, 40-50% protein, costs 6.5 to 7¢ per pound, 105-110 million lb produced in 1967. Concentrates, 70% protein, costs 18¢ per

pound, 17-30 million lb produced in 1967. Isolates, 90-95% protein, costs 35-39¢ per pound, 22-35 million lb produced in 1967. (6) Food uses of soy protein: Whipping agents in confections and dessert mixes, infant foods, breakfast foods, bakery products, beverages, meat products, simulated meats, flavoring agents, dietary foods. (7) World protein deficit, 1970. Fish protein concentrate: 3.0 million tons = 240 million bushels of soybeans. Dry beans and peas: 6.7 million tons = 160 million bushels of soybeans.

Pie charts show: (1) Disposition of U.S. soybean oil (1969, forecast): Shortening 30%, margarine 19%, cooking and salad oil (29%), exports (16%), nonfood use (6%). Total: 7.7 billion lb.

(2) Disposition of U.S. soybean meal (1968-68): Domestic feed use (76%), exports (21%), nonfeed use (3%). Total: 14.3 million tons. Address: Director, Northern Regional Research Lab., Peoria, Illinois.

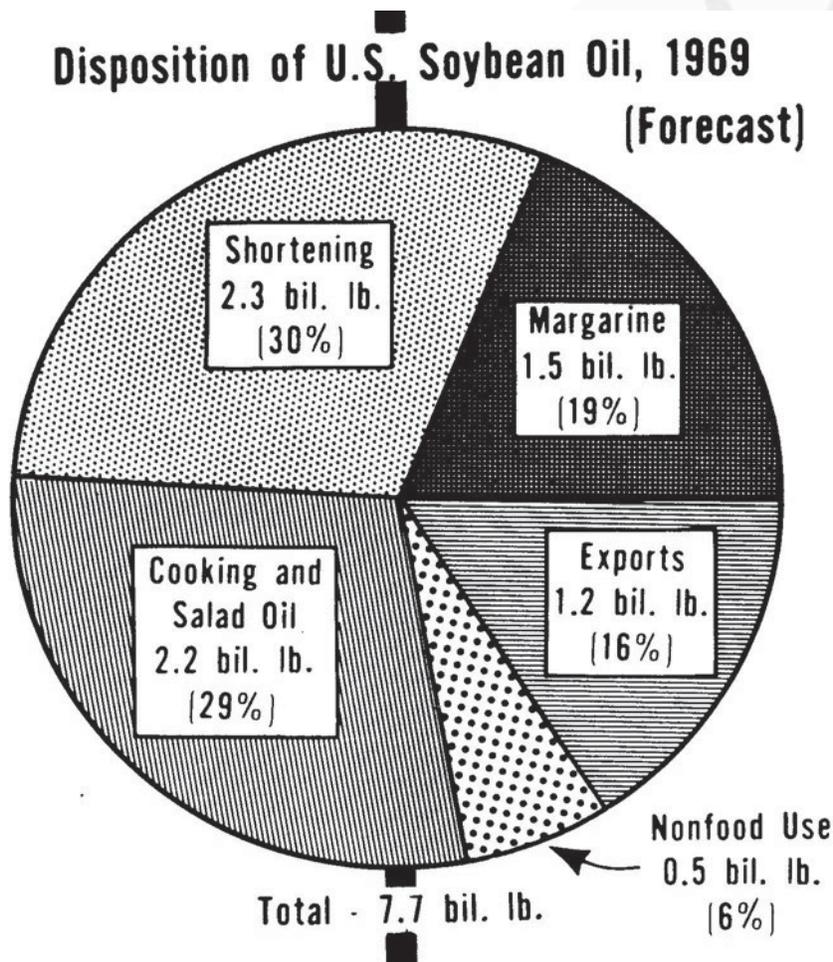
566. *Food Processing (Chicago)*. 1970. Protein adds nutritional 'punch' to snacks. Autumn. p. F6-F7. Foods of Tomorrow section.

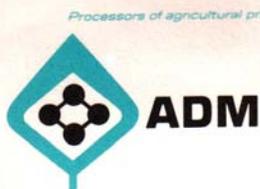
• **Summary:** The section titled "Soy protein" notes: TVP Smoky Chiplet is a high-protein snack made by Archer Daniels Midland Co. (Decatur, Illinois). Soy specialties as ingredients for high protein snack foods are available from Cargill Inc. (Minneapolis, Minnesota). For soy protein isolate ingredients contact Ralston Purina Co. (St. Louis, Missouri). For soy flour information contact A.E. Staley Mfg. Co. (Decatur, Illinois). Three brochures about soy protein, soybean oil, and soybean processing are available from the National Soybean Processors Assoc. (1225 Connecticut Ave., N.W., Washington, DC). "Soy protein concentrate for snack formulation is available from Swift Chemical Co." (Oak Brook, Illinois).

567. *Food Processing (Chicago)*. 1970. "Textured protein products" replaces "Tegretein..." 31(11):91. Nov.

• **Summary:** "... as a generic designation for vegetable protein foods in the food standard proposal submitted by Archer-Daniels-Midland and General Mills." Better consumer understanding of the term was given as the reason for the proposed change.

568. Edwards, Charles C. 1970. Textured protein products: Proposed





ARCHER DANIELS MIDLAND COMPANY DECATUR, ILLINOIS 62525 TELEPHONE 217/423-2571

standard of identity. *Federal Register* 35(236):18530-31. Dec. 5. 21 CFR Part 15. [2 ref]

• **Summary:** This section begins: "Notice is given that a petition has been filed jointly by Archer Daniels Midland Co., Post Office Box 1470, Decatur, Illinois, 62525, and General Mills, Inc., 9200 Wayzata Boulevard, Minneapolis, Minnesota, 5540, proposing the establishment of a definition and standard of identity for a class of foods to be known as 'textured protein products,' prepared from vegetable protein and other ingredients. If such identity standard is established, the Commissioner of Food and Drugs proposes that it be added to Part 15—Cereal Flours and Related Products under a new Subpart D—Textured Protein Products.

"In the Federal Register of October 13, 1967 (32 F.R. 14237), a notice of proposed rule making was published based on a petition for 'bontrae' filed by General Mills, Inc., and a petition for 'textured vegetable protein' filed by Archer Daniels Midland Co., both for vegetable protein type products."

"4. The petition initially proposed 'tegretein products' as the class name for the subject foods. Additional research by the petitioners, however, resulted in their concluding such name would be meaningless to consumers without a considerable explanation. The petitioners changed their petition to apply the name 'textured protein products.'" Address: Commissioner of Foods and Drugs, FDA, Washington, DC.

569. Hamdy, M.M. 1970. Re: Enclosing a packet of information about TVP. Letter to Dr. Walter J. Wolf at USDA, Peoria, Illinois, Dec. 10. 1 p. Typed, with signature on letterhead.

• **Summary:** See next page. Enclosed is a packet of about 25 individual glossy sheets. Those with price quotations (dated Sept. 1, 1970) and general information have the orange-gold heading "TVP: A fabulous new food." Those with bulk recipes have: "Try this tasty TVP recipe." Address: Ph.D., Manager Food Technology Section, Research Dep., ADM, Decatur, Illinois.

570. Schwarz, Richard W. 1970. John Harvey Kellogg, M.D. Nashville, Tennessee: Southern Publishing Assoc. 256 p. Illust. Index. 22 cm. See p. 44, 120-23, 243. Also

published in 1970 by Andrews Univ. Press (Berrien Springs, Michigan).

• **Summary:** This excellent biography of Dr. J.H. Kellogg was originally written as a 1964 PhD thesis at the University of Michigan. Although it contains no references or footnotes, and thus lacks the documentation and completeness of the dissertation, it is still (March 2009) the best biography of Dr. Kellogg. The author is a Seventh-day Adventist.

Contents: Preface. 1. The boy foreshadows the man. 2. A convert (the early health reform and vegetarian movements in America). 3. From teacher to doctor. 4. A man is what he eats. 5. Changing American habits. 6. Developing the Battle Creek Sanitarium. 7. Sanitarium ups and downs. 8. A torrent of words. 9. Variations on a boyhood dream. 10. The unwilling surgeon. 11. Products of an active mind. 12. All work, but little play. 13. What manner of man. 14. Father of forty-two children (and Ella Eaton Kellogg, his wife). 15. His brother's keeper. 16. The ties of fifty years are broken. 17. Food manufacturing and family quarrels. 18. New outlets for promoting an old program. 19. The last battles. 20. An epilogue.

Concerning meat substitutes [meat alternatives] (p. 121-23): "During the years in which he directed the experiments which led to the production of flaked cereals, Bromose, and Malted Nuts, Dr. Kellogg also attempted to develop a substitute for meat from plant sources. He traced his interest in such a product to conversations with Dr. Charles W. Dabney, noted agricultural chemist and former president of the University of Tennessee. When Dabney was serving as President Cleveland's Assistant Secretary of Agriculture [probably about 1893-1897], he had discussed with Kellogg the problem of supplying adequate protein for the world's rapidly expanding population. The men agreed that it was better economics to use grain for human food than to feed it to animals and then use them for food. The problem, as Dabney saw it, was to produce a grain product which would have all the nutritional value and taste appeal of meat.

"In 1896 Kellogg announced that he had perfected the ideal substitute for meat in Nuttose, a nut product which he could prepare to taste much like beef or chicken... The doctor's interest in new vegetarian meatlike protein foods continued active until shortly before his death. Among some of the more popular creations later developed in his

# TVP

A fabulous new food

## Price quotations

September 1, 1970

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### TVP\* TEXTURED VEGETABLE PROTEIN, FLAVORED

---

50 lbs.-10,000 lbs.	37¢ lb. FOB Decatur, Illinois
10,000 lbs.-20,000 lbs.	35¢ lb. FOB Decatur, Illinois
20,000 lbs. plus	34¢ lb. FOB Decatur, Illinois

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### TVP\* TEXTURED VEGETABLE PROTEIN SEASONED, SEASONED WITH COLOR

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50 lbs.-10,000 lbs.	32¢ lb. FOB Decatur, Illinois
10,000 lbs.-20,000 lbs.	30¢ lb. FOB Decatur, Illinois
20,000 lbs. plus	29¢ lb. FOB Decatur, Illinois

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### TVP\* TEXTURED VEGETABLE PROTEIN UNFLAVORED, UNFLAVORED WITH COLOR

---

50 lbs.-10,000 lbs.	30¢ lb. FOB Decatur, Illinois
10,000 lbs.-20,000 lbs.	28¢ lb. FOB Decatur, Illinois
20,000 lbs. plus	27¢ lb. FOB Decatur, Illinois

\*ADM trademark.



ARCHER DANIELS MIDLAND COMPANY  
BOX 1470 DECATUR, ILLINOIS 62525

Packaged in corrugated cartons of 50 lbs. net weight with polyethylene liner.

laboratories were Protose, Battle Creek Steaks, and Battle Creek Skallops. Various combinations of nuts and wheat gluten composed the principal ingredients in the imitation meats...

“Kellogg’s last major food discovery was an artificial milk made principally from soybeans. He was particularly enthusiastic over soy milk because it proved an excellent host for the *acidophilus* bacteria which the doctor believed needed to be implanted in the intestinal tract in order for it to function perfectly. Shortly after Kellogg had developed soy acidophilus milk, he chanced to read that Marie, smallest of the Dionne quintuplets, was suffering from bowel trouble. Immediately wiring the quints’ physician, Dr. A.R. Dafoe, he announced he was sending him a supply of soy acidophilus milk, which he was certain would cure Marie’s problem. About ten days later he received a letter from Dafoe which indicated that the soy acidophilus milk had indeed corrected the situation and asked that a continuous supply be sent to Callander, Ontario [Canada], for the five little girls.”

In summarizing Dr. Kellogg’s major accomplishments, the author notes (p. 243): “His introduction of peanut butter added another widely accepted item to the American diet, and it probably did more to provide a market for peanuts than did the efforts of any other person, with the possible exception of George Washington Carver. John Harvey’s development of meatlike products from nuts and legumes combined with wheat gluten has not only helped to enrich the dietary of thousands of persons who for ethical, health, or religious reasons choose to be vegetarians, but such high-protein foods also hold possibilities for supplementing the diet in countries where the supply of meat is insufficient to provide enough protein for a rapidly expanding population.”

Concerning Granola: In the early 1860s, Dr. James Caleb Jackson of Dansville, New York, developed Granula, America’s first successful cold breakfast cereal, made solely from wheat. For 40 years, Dr. Jackson operated “Our Home on the Hillside,” probably the most successful of the “water-cure” institutions that blossomed in the 1850s. “In an atmosphere approaching that of a European spa, Jackson provided hydropathic treatments and a special diet for as many as a thousand patients a year.” In about the 1870s, at the Battle Creek Sanitarium, John Harvey Kellogg developed a similar product, which he named Granola. It differed from Jackson’s Granula in that it consisted of several grains, and longer baking dextrinized the starch more thoroughly. “At first he apparently had no thought of selling it. He intended it solely for sanitarium patients. Gradually, however, as former patients and others interested in dietetic improvement sent to the sanitarium for Granola, a small commercial business developed, and Battle Creek thus took its first step toward becoming the ‘Breakfast Food Capital of the World.’... Shortly after the production of Granola for patients at the sanitarium began in 1877, Dr. Kellogg organized the Sanitarium Food Company as a subsidiary of the Battle

Creek Sanitarium. Operated as an adjunct to the sanitarium bakery, for more than a decade it marketed a variety of oatmeal, graham, and fruit crackers and whole-grain cooked cereals—all originally devised to provide variety in the menu of sanitarium patients.” All products were made from whole grains without artificial additives, and all underwent prolonged high-temperature baking designed to dextrinize their starch. “By 1889 the Sanitarium Foods had become popular enough to warrant the establishment of a separate factory; Granola alone sold at the rate of two tons a week.” But when Dr. Kellogg wanted to expand the business, other sanitarium doctors refused to vote the funds. So Dr. Kellogg launched the private Sanitas Food Company, relying heavily on his younger brother, Will Keith, who had served as his personal accountant and business manager since 1880. John Harvey’s new flaked cereals and vegetable meats became the property of the Sanitas Company. In mid-1906 Dr. Kellogg decided to change Sanitas’ corporate name to the Kellogg Food Company. Then: “In the spring of 1921, to avoid further difficulties with Will Kellogg’s manufacturing business [Battle Creek Toasted Corn Flake Company], Dr. Kellogg changed his concern’s name to the Battle Creek Food Company.”

Concerning flaked breakfast cereals: The first ones were developed from wheat jointly by Dr. J.H. Kellogg and his brother Will, in about 1894. Dr. Kellogg named their first successful wheat flakes product Granose Flakes, and on 31 May 1894 he applied for a U.S. patent on “Flaked cereal and process for preparing same.” But in 1903 courts declared the doctor’s patent invalid. Will Kellogg developed the product into a great commercial success, in part by adding sugar to the malt and corn combination from which he made the flakes. “The sugar greatly enhanced the cereal’s taste appeal, and, as a result, the Corn Flakes business was booming by late 1905.” Will convinced his brother, John Harvey, to relinquish Sanitas’ rights to Corn Flakes, and in early 1906 Will established a separate Battle Creek Toasted Corn Flake Company with outside financing. John Harvey agreed not to take an active part in the new company’s management. Six months later John Harvey decided to change Sanitas’ corporate name to the Kellogg Food Company. The new company “began operating in July 1908, with Dr. Kellogg owning all but two of its fifteen thousand shares of stock. Not only did the new company absorb the old Sanitas Company, but it also leased the entire plant, machinery, goodwill, and business of the Battle Creek Sanitarium Food Company, thus bringing the manufacture and distribution of all the food products with which Dr. Kellogg was associated into one organization. By then John Harvey had decided that it would be a good thing to put out all company products under the trade name ‘Kellogg’s.’”

Will became very upset when Dr. Kellogg attached the family name to his new food company and products. Eventually a series of legal battles developed between the

two brothers over this and other products. Will Keith Kellogg is discussed on pages 64, 118-20, 122, 144, 148, 192, 210-18, 224, 237-38.

On pages 193-208 are 16 pages of excellent black-and-white photos from the life of Dr. Kellogg, starting with a portrait of him and his wife in 1884.

Reprinted in 2006 by Review and Herald Publishing Association (Hagerstown, Maryland)—but with the new subtitle: “Pioneering health reformer.” Adventist pioneer series. On the new cover, on a snipe in the upper right corner: “Father of the health food industry.” Address: Andrews Univ., Berrien Springs, Michigan.

571. Trager, James. 1970. The enriched, fortified, concentrated, country-fresh, lip-smacking, finger-licking, international, unexpurgated foodbook. New York, NY: Grossman Publishers. xv + 579 p. Illust. Index. 24 cm. [350+\* ref]

• **Summary:** This hefty volume is packed with information about a multitude of interesting, little known, or bizarre subjects related to food. It is divided into 11 major chapters, each of which contains many mini-chapters, often with witty or enticing (but often un-descriptive) titles such as “mushrooms take savvy” or “Farmer Jefferson.” The extensive index is very useful, containing entries for such things as Accent/MSG (p. 445-48), prehistoric agriculture and food (p. 3-11), meat analogs and Bac\*Os (p. 450-51, 457, 501), Archer Daniels Midland (p. 450), bean curd (p. 333, 362), Battle Creek Sanitarium (p. 460), Kellogg (p. 384, 460-61), miso soup (p. 362), soybeans (p. 21, 262, 382, 450-51, 518), soy protein (p. 450), vegetarianism and vegetarians (p. 3, 324, 343, 457-59).

In Chapter 10, titled “Nuts in the Fruitcake” (p. 455-86), the author takes the opportunity to make fun of anything he discusses related to health/natural foods or vegetarianism. To him, it all smacks of food faddism and extremists. There are sections about vegetarians past and present (“there are no convincing nutritional justifications for vegetarianism”), Sylvester Graham (“One of America’s first home-grown food faddists”), Horace Fletcher, Dr. William Howard Hay and acidosis, Gayelord Hauser (“Perhaps the most prominent diet and health mythologist in recent years”), organic foods baloney (“DDT has not yet been shown to have harmful effects for humans”), Carlton Fredericks and Adolphus Hohensee, Tiger’s Milk, aphrodisiac foods, and food and astrology. Address: New York.

572. **Product Name:** Ranch House Vegetable Mince, Bolognese, Curry, Stew, Goulash.

**Manufacturer’s Name:** Direct Foods Ltd.

**Manufacturer’s Address:** Petersfield, Hampshire, GU32 3EW, England.

**Date of Introduction:** 1970?

**Ingredients:** Macaroni Mix: Wholemeal macaroni, textured

soya protein, dehydrated onions, green bell peppers, peas, mushrooms, vegetable oil, sea salt, corn flour, raw sugar, yeast extract, spices, herbs.

**Wt/Vol., Packaging, Price:** Macaroni: 141 gm plastic bags for ½ pound.

**How Stored:** Shelf stable.

**New Product–Documentation:** Brochure (4-panel color) from Direct Foods Ltd. 1970? “Protoveg Meat Substitute and Ranch House Convenience Meals.” “Reduce your meat bill using Direct Foods.” The company address is now Petersfield, Hants. GU32 3EW. Phone: Petersfield 4911/2. Contents: What is Protoveg? How is it used? How is it made? How is it sold? Is it as good for you as meat? Typical analyses.

Export price list from Direct Foods Ltd. 1974. Oct. 1. Ranch House Meals (each 112 gm) include Vegetable Mince, Vegetable Bolognese, Vegetable Goulash, Vegetable Stew, Vegetable Curry. There is also a catering pack consisting of 50 lb of any flavour. Sosmix—meatless sausage mixture (13 oz). is also listed. The company address is now Bedford Road, Petersfield, Hants.

Trade catalog and price list from Direct Foods Ltd. 1977. April 25. The product line is the same as in 1974 except for the addition of: 10 lb sizes for each flavor, and Sizzleberg.

Food Report (Lehmann). 1982. Jan.

Talk with Peter Roberts. 1990. Dec. 12. In about 1970, Direct Foods Ltd. introduced a line of about 20 vegetarian protein products, all replacements for meat and all sold under the Ranch House brand.

573. **Product Name:** Sosmix.

**Manufacturer’s Name:** Direct Foods Ltd.

**Manufacturer’s Address:** Petersfield, Hampshire, England.

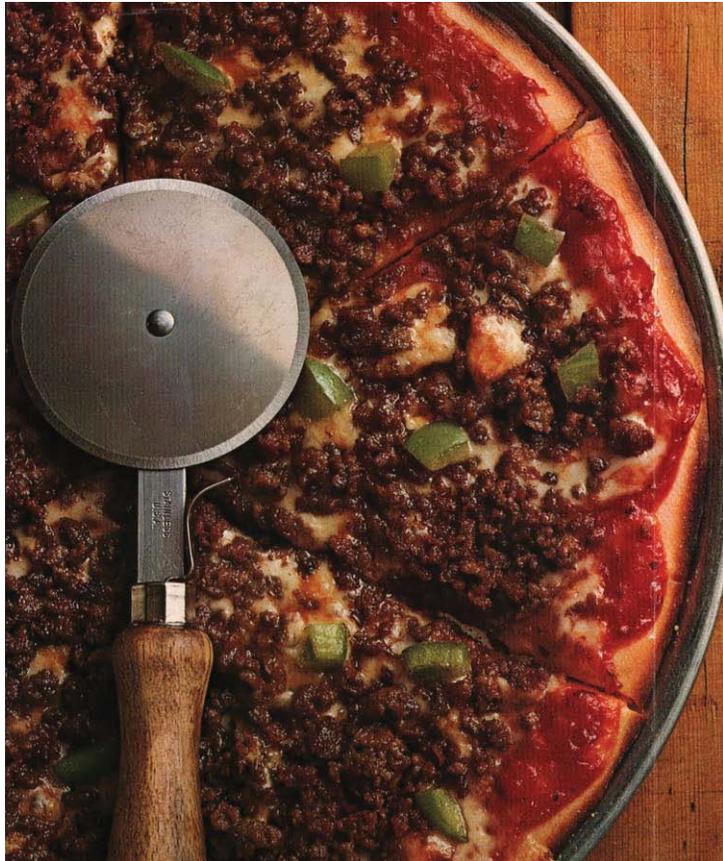
**Date of Introduction:** 1970?

**Ingredients:** Macaroni Mix: Wholemeal macaroni, textured soya protein, dehydrated onions, green bell peppers, peas, mushrooms, vegetable oil, sea salt, corn flour, raw sugar, yeast extract, spices, herbs.

**Wt/Vol., Packaging, Price:** Macaroni: 141 gm plastic bags for ½ pound.

**How Stored:** Shelf stable.

**New Product–Documentation:** Food Report (Lehmann). 1982. Jan. Talk with Peter Roberts. 1990. Dec. 12. In the early 1970s British Arkady was making a product named Banger Mix (a “banger” is a sausage), made with soya protein and pig fat. Peter asked them to replace the pig fat with a hardened vegetable oil. The Roberts named the resulting product Sosmix. Introduced in about 1970, it was a dry sausage mix and soon became Direct Foods’ best-seller. To prepare the product, you mix the dry product with water, let it hydrate for about 2 minutes, roll it into sausage shapes (or croquette shapes), then fry it. Or you can put it around an egg to make a Scotch egg.



**You think maybe  
people won't like  
your pizza  
if it looks and  
tastes better  
and costs less?**

So why not add TVP textured vegetable protein? This fabulous new high protein food can be textured and flavored to complement sausage or pepperoni . . . or pork or beef, for that matter.

Adding TVP is like adding more meat—better, in fact, because of its absorbent qualities. And hydrated, it costs about one-fourth the price of meat.

TVP is ideal for pizza, and for casseroles, sauces, sloppy joes, tamales, patties, — any product that contains ground beef or pork. And ADM makes the widest range of seasonings, flavorings, colors, particle sizes and specialties of any source.

It saves you money, and improves the taste, appearance, texture and nutrition of your product . . . whether fresh, frozen or canned. In fact, TVP retains its texture even after reheating.

Check into TVP. Call 217-423-2571, or drop us a line at Archer Daniels Midland Company, Box 1470, Decatur, Illinois 62525.

**TVP**  
Textured Vegetable Protein

As Peter Roberts tells the story: Once the labeling division of the county public analyst's department threatened a lawsuit if Direct Foods did not change the product's name. They felt that the name implied that the product name was a "phonetic crib on the word sausage, which suggests that the product is a sausage with a meat content, and as such should come under the sausage regulations." Peter Roberts politely explained that "the term Sosmix had an entirely different origin. Down in the West Country around Devon and Cornwall there is an old country tradition of 'sosing,' which means to swill a food around in the frying pan as its frying. The authorities took on a glazed look in their eyes and went away. They didn't bother us after that."

Letter from Peter Roberts. 1991. Oct. 15. Sosmix was not part of the Ranch House line. It stood on its own.

574. Fiedler, R.E. 1971. Economics of the soybean industry. *J. of the American Oil Chemists' Society* 48(1):43-46. Jan.

• **Summary:** A long and very interesting article. Contents: Abstract. History. Growth rate of the crop. Meal. Oil. Marketing of soybeans. Potential problems for soybeans.

Tables: (1) Soybeans: U.S. supply and distribution, 1924-1968. The 5 columns are: (a) Crop year beginning Sept. 1. (b) Acreage harvested for beans (1,000 acres). (c) Production (1,000 bu). (d) Crush (1,000 bu). (e) Exports (1,000 bu). In all areas, the growth has been amazing.

(2) Comparison of major U.S. crops: acreage and dollar value in 1952, 1960 and 1969. The crops are corn, cotton, wheat, tobacco, oats, soybeans, barley, grain sorghum. In 1969 corn is no. 1 in dollar value by far; soybeans are no. 2.

(3) Protein consumption by U.S. domestic feed industry in thousand of tons, 1952-1968. The columns are: soybean meal, cottonseed meal, fish meal, gluten feed & meal, tankage and meat scraps, Urea (soybean meal equivalent). Others. Total.

(4) Per capital consumption of fats and oils by country. The 3 columns are country name, pounds per year, and percentage vegetable oil.

(5) Food fats and oils: Domestic U.S. consumption in million of pounds, 1959-1958. The columns are: soybean oil, butter, lard, cottonseed oil, others, total, soybean oil as a percentage of the total. Address: Archer Daniels Midland Co., 4666 Faries Parkway, Decatur, Illinois 62526.

575. Archer Daniels Midland Co. 1971. You think maybe people won't like your pizza if it looks and tastes better and costs less? [TVP] (Ad). *Food Processing (Chicago)*. Winter. p. F18-F19. Foods of Tomorrow section.

• **Summary:** See above. On the left half of this gorgeous 2-page color ad is a large round tray of baked pizza, cut into pieces, on a natural wood background, with the round cutter atop the pizza. The text begins: So why not add TVP

textured vegetable protein? This fabulous new high protein food can be textured and flavored to complement sausage or pepperoni... or pork or beef, for that matter.

“Adding TVP is like adding more meat—better, in fact, because of its absorbent qualities. And hydrated, it costs about one-fourth the price of meat.

“TVP is ideal for pizza, and for casseroles, sauces, sloppy joes, tamales, patties—any product that contains ground beef or pork. And ADM makes the widest range of seasonings, flavorings, colors, particle sizes and densities of any source.”

“TVP (trademark) Textured Vegetable Protein.” Address: Box 1470, Decatur Illinois, 62525. Phone: (217) 423-2571.

576. Horan, F.E.; Odell, A.D.; Forman, M.J. 1971. Textured vegetable proteins. *PAG Bulletin (Protein Advisory Group, WHO / FAO / UNICEF)* 2(1):22-26. Winter. No. 13.

• **Summary:** This paper was compiled from background documents presented by the authors at the 18th PAG [Protein Advisory Group] meeting held on 9-12 Feb. 1971 at Rome, Italy. Contents: Introduction. Spun monofilament products. Extrusion-expansion products (currently marketed at about \$0.45/lb). General considerations. Case studies: Thailand (ADM’s TVP), Brazil (Swift & Co.’s textured meat analogs), India (Swift & Co., ditto). Textured vegetable protein products: Fibroprotein—Spun Protein Fibers (Worthington Foods Div., Ohio), Textured Edi-Pro (Ralston Purina Co., Missouri), Texgran (Swift & Co., Illinois), Bontrae (General Mills, Minnesota; spun vegetable protein products), Carne Vegetal (Industria e Comercio de Productos Alimenticios Vegetal Ltd., Brazil). LiveLong—VP (Nisshin Flour Milling Co. Ltd., Japan; a wheat gluten extract in the form of a dried or frozen mincemeat-like product. “It seems to be made by a filament extrusion process using isolated wheat gluten protein”). The Farmarco Co. (Far-Mar Co., Kansas), The Fuji Oil Co. (Japan; thermoplastic extrusion), and Shefa Protein Foods Ltd. (Israel) each manufactures texturized soy food products by thermoplastic extrusion.

Introduction: “The chief virtue of the individual members of this new class of foods rests in their ability to supply precisely reproducible balanced dietary inputs of essential amino acids with greatly enhanced agronomic efficiency and with high consumer acceptance... At the moment two broad classes of meat analogues are apparent. The extrusion—expansion products sell for US 10-15¢ per pound; the spun monofilament products sell at present in the USA for 20-25% less than meats, but are still too expensive to be of interest for developing countries.”

“General considerations: Meat analogs do not appear to have a negative connotation to vegetarians; there are many examples of eager acceptance of meat analogs by such groups. The textured protein approach is also a stride forward in food efficiency, since conversion of soy to animal protein averages about 7% efficiency.”

“Over the past few years US/AID has entered into contracts with twelve different U.S. commercial companies to investigate and evaluate low-cost proprietary protein products in some ten developing countries.”

Note: This is the earliest English-language document seen (Dec. 2004) that uses the word “Fibroprotein” to refer to edible spun soy protein fiber. Address: 1. ADM, Decatur, Illinois; 2. General Mills, Minneapolis, Minnesota.

577. Anderson, Earl V. 1971. The new priorities. Food: Preventing hunger and malnutrition. *Chemical and Engineering News* 49(10):19-22. March.

• **Summary:** This special report looks at new opportunities for chemists and chemical engineers in three areas: food, shelter, and health. Technology can help in solving the problems of world hunger and malnutrition. FAO “estimates that 2 billion people are hungry or undernourished, including several million Americans.” USDA’s Aaron M. Altschul believes that food technology, properly directed, can help solve these problems. In addition to the Green Revolution, there has been “the other Silent Revolution of this century,”... the explosive growth in our knowledge of foods and nutrition, and in the ability to engineer foods.

The emphasis has been on protein foods “because protein deficiency is the most universal nutritional problem... Of the 82 million tons consumed in the world, only 25 tons [31%] come from animal sources.” Most of the animal protein is consumed by the 1 billion people in developed countries.

Protein deficiencies can be overcome by fortifying grains or natural protein concentrates—as from soybeans—with amino acids such as lysine. Or we can use new techniques for converting “inexpensive vegetable proteins into textured foods that look and taste much like the more expensive animal foods. Products have been made from vegetable protein that closely resemble beef, chicken, seafood, ham, and bacon. They cost less than the real thing yet they are nutritious and attractive. Such products from textured soy already are being widely marketed in the U.S., western Europe, and Japan. In time they may become new protein sources in the less-developed countries.

“In fact, AID now is sponsoring studies of textured products in less developed countries. Archer-Daniels-Midland is conducting one in Thailand and General Mills in Pakistan.”

But what should we call these new products? You can’t call it meat because it isn’t. “You can call it soybeans because nobody would buy it. These products have been called animal protein food analogs... But that’s not a marketable name either. The name that industry and the Government seem to be settling on is textured protein products (TPP).” The FDA has proposed a standard for TPP.

“Vitasoy, a soybean soft drink that has been sold in Hong Kong for 25 years, has captured 25% of the soft

drink market there.” Based on that success, “Monsanto is marketing a soy protein beverage called Puma through a franchiser in Guyana. It is now the second most popular soft drink in the country (Coke is first). Coca Cola, meanwhile, is marketing a fruit-flavored beverage, Samson, in Dutch Guiana (Surinam).

“So far, soybeans are the major source of vegetable proteins used in food fortification and TPP products.”

Also discusses: Cottonseed protein, proteins from peanuts, sunflower, and safflower seeds, fish protein concentrate (FPC), and single-cell protein from petroleum, computer controlled food processing lines, etc.

Photos show: (1) “Liquid protein fed into this spinning machine emerges as bands of tiny food fibers.” The machine is tended by a man in a white hard hat. (2) A black boy drinking Puma in Guyana. (3) “British Petroleum’s protein-from-petroleum plant at Grangemouth, Scotland.” It produces 4,000 tons/year of animal-grade protein by fermentation of *Candida* yeasts on a petroleum substrate. Address: Senior Editor, New York City.

578. Martin, Roy E. 1971. Edible soy proteins: Challenge and opportunity. *Soybean Digest Blue Book Issue*. p. 26-30, 32-33. March. [6 ref]

• **Summary:** Contents: Introduction (“A new frontier is being forged in food technology with the development of soy protein for human consumption”). The proteins defined (Soy flour, flakes, and grits). Types of soy flour (Full-fat, low-fat, defatted). Soy proteins. The concentrates. The isolates. The spun proteins. Textured proteins. Soy milk. Soy beverages. Blended foods (USDA CSM, WSB). Special products for overseas (Puma, Sobee {“A U.S. full-fat soy flour product nutritionally adequate to support infant growth, introduced in Taiwan”}, Cerealina, Pro-Nutro, Saridele, Saci, Nutresco, Nestle’s soy-corn flour marketed in Brazil). How large is the market? Further reading.

Soy milk: “Soy milk has been used for centuries in the Orient for infant feeding [sic] and other purposes... the process has been refined and its application greatly extended in the Far East by Dr. H.W. Miller and others. K.S. Lo [of Vitasoy, Hong Kong] has been bottling soy milk as a nutritious low-cost soft drink and selling many millions of bottles yearly.” In 1959 the World Health Organization built a \$1 million soy milk plant in Indonesia [to make spray-dried Saridele]. In the Western world soy protein [isolate] is used in soy-based infant formulas. “It is also used by adults with allergies, diabetes, or who for other reasons prefer” a non-dairy milk.

Tables show: (1) New Protein Food Program of the Agency for International Development (an independent federal agency). Five columns show: Country. U.S. company. Date of product [launch]. Product description & contract [no product names are given]. Raw materials. Of the 11 products in 7 countries, eight contain soya. They are: Brazil, Krause

Milling Co., March 1967. Brazil, Monsanto, June 1967. Brazil, Swift, April 1967 (two products). Kenya, Del Monte, June 1968. Pakistan, General Mills, June 1968. Thailand, ADM, Aug. 1968. India, Swift, July 1968.

(2) Protein cost per pound of various foods:

Beef (retail) \$4.44.

Chicken (dressed) \$1.50.

Wheat flour \$0.60.

Bulgar wheat [bulgur] \$0.47.

Peanut meal (defatted) \$0.43.

Dry skim milk [nonfat dry milk] \$0.40.

Wheat (whole) \$0.30.

Cottonseed flour \$0.17.

Fish meal (food) \$0.14.

Soy flour (food) \$0.11 (from Bean 1966).

(3) Efficiency of land use for protein production. Three columns give the name of the crop or animal, average yield per acre, and pounds of protein per acre.

Soya bean, 24.2 bu, 508 lb.

Other legumes, 20.7 bu, 293 lb.

Maize, 64.2 bu, 323 lb.

Wheat, 25.1 bu, 180 lb.

Milk, 2,780.0 lb, 97 lb.

Beef, 342.0 lb, 58 lb.

Note: No earlier source of this table can be found; it is not in Bean (1966).

Photos show: (1) Sukiyaki made with textured vegetable protein. (2) A stable whip of soy protein being ejected from the spout of a pressurized can onto the top of a parfait dessert. (3) Defatted soy flakes, which are the raw material for defatted soy flour, special soy protein, soy protein concentrate, isolated soy protein. Address: General Manager, Vegetable Protein Products, Swift Chemical Co.

579. Perdue, Elmer J.; McVey, Daniel H. 1971. Growth of cottonseed and soybean processing cooperatives. *USDA Farmer Cooperative Service, FCS Information No. 75*. 82 p. July. [9 ref]

• **Summary:** Soybean cooperatives’ percentage of the total U.S. soybean crush rose from 3.8% in 1949 to 15.2% in 1968. In 1968-69 roughly 15% of the soybeans grown in America were marketed through cooperative oil mills. Returns to patrons [farmers] of cooperative soybean mills during these 21 crushing seasons amounted to \$51 million, or 7.5 cents per bushel.

“Cooperative soybean and cottonseed mills have held joint annual conferences since 1955. An outstanding accomplishment of these conferences was the organization in 1962 of Soy-Cot Sales, Inc., Des Plaines, Illinois. This coordinated joint sales agency markets products manufactured by 22 member mills.” Cooperative mills are expected to move toward production of soybean flour and cottonseed flour for use in human food.

Cooperative activity with soybeans began when soybean

producers (farmers) in western Kentucky and eastern Indiana formed the Ohio Valley Soybean Cooperative and built the first cooperative soybean plant at Henderson, Kentucky, in 1940-41. "This was an effort to increase bean prices, to encourage production by offering another market, and to have a source of high protein feed for livestock. During and immediately following World War II, it became almost impossible for soybean producers to obtain soybean meal either as meal or in the form of mixed feeds. To alleviate this situation, they built cooperative mills..."

"Between 1940 and 1949, soybean producers constructed 21 soybean mills—19 of them from 1940 to 1945. These plants were in Pennsylvania, Ohio, Indiana, Illinois, Iowa, Wisconsin, Kansas, and Missouri. During the period 1950 to 1970, eight cooperatives constructed or acquired 10 mills. These were in Minnesota, Missouri, Arkansas, and Georgia in areas where bean production has been increasing rapidly.

"Thus between 1940 and 1970, 29 cooperatives built or acquired 31 processing plants. In 1970, 13 of these cooperatives were still in operation with 15 crushing plants... All the early plants were small and were built for the primary purpose of serving as a source of high protein feed. Most of them had a capacity of only 10 to 50 tons a day.

"By the early 1950's, larger plants had been constructed and protein was more readily available through commercial channels. As the situation became more competitive, the small plants (many of them poorly located) found they could not produce and sell meal at competitive prices without operating at a loss. By the mid-1950's many of them had closed and by 1960 most had ceased operation.

"Only three screw press plants were operating in 1970; each one processing only 40 to 50 tons a day. The other 12 plants were large solvent plants ranging in capacity from 250 to 1,700 tons a day. Most of the recently constructed plants have a daily capacity of about 1,500 tons" (p. 8-10).

Table 4 (p. 9) lists 13 "Cooperative soybean processing associations operating in 1970," together with the plant location and the year the "plant was built or acquired." The headquarters is listed if it is different from the plant location. The earliest is the Farmers Grain Dealers Assoc. (FGDA), Des Moines, Iowa, Soybean Division; plant at Mason City, Iowa, built in 1943. It was originally located at Manly, Iowa (1943-51), moved to Mason City in 1951, and merged with FGDA in 1967. Note 1. The original name was North Iowa Cooperative Processing Association, and the manager was Glenn Pogeler from 1943 to 1964.

The associations (companies) are: 1. FGDA, started 1943. 2. Boone Valley Cooperative Processing Assoc. (Eagle Grove, Iowa, started 1943). 3. Farmers Regional Cooperative, Fort Dodge, Iowa, Big 4 Division (Sheldon, Iowa, 1943; Big 4 Cooperative Processing Assoc. merged with Farmers Regional in 1967. In 1970, Farmers Regional merged with Land O'Lakes). Note: We can say that on 1

April 1970, Land O'Lakes began operating the soybean processing plant at Sheldon, Iowa.

4. West Bend Elevator Co. (West Bend, Iowa, 1943). 5. Farmers Cooperative Assoc. (Ralston, Iowa, 1944). 6. Missouri Farmers Assoc., Columbia, Missouri, Soybean Div. (Mexico, Missouri, 1946). 7. Producers Cooperative Assoc. (Girard, Kansas, 1948). 8. Dawson Mills (Dawson, Minnesota, 1951). 9. Arkansas Grain Corp. (Stuttgart, Arkansas, 1958). 10. Farmland Industries, Kansas City, Missouri, Soybean Processing Div. (Van Buren, Arkansas, 1960; Farmland Industries acquired Co-op Processing Assoc. in 1968). 11. Farmers Union Grain Terminal Association, St. Paul, Minnesota, Honeymead Products Div. (Mankato, Minnesota, 1960). 12. Far-Mar-Co, Hutchinson, Kansas (St. Joseph, Missouri, 1963). 13. Gold Kist, Inc., Atlanta, Georgia, Gold Kist Soy Div. (Valdosta, Georgia, 1968).

Table 5 (p. 10) lists 13 "Cooperative soybean processing plants that had ceased operations as of 1970." "1. Ohio Valley Soybean Cooperative (Henderson, Kentucky, 1940). 2. Coshocton Farmers Exchange (Coshocton, Ohio, 1943). 3. Ohio Farm Bureau Cooperative Assoc., Columbus, Ohio (Springfield, Ohio 1943). 4. Farmers Cooperative Elevator (Martelle, Iowa, 1943). 5. Farmers Cooperative Company (Dike, Ohio [sic, Iowa], 1943). 6. Indiana Farm Bureau Cooperative Assn., Indianapolis, Indiana (Danville, Indiana, 1943; Wabash, Indiana, 1944; Vincennes, Indiana, 1944; Rushville, Indiana, 1945). 7. Alhambra Grain and Feed Company (Alhambra, Illinois, 1944). 8. Consumers Cooperative Association, Kansas City, Missouri (Coffeyville, Kansas, 1945). 9. Jersey Shore Cooperative Soybean Association (Jersey Shore, Pennsylvania, 1945). 10. Northwest Co-op Mills, St. Paul, Minnesota (Menomonie, Wisconsin, 1945). 11. Farmers Cooperative Elevator (Hubbard, Iowa, 1945). 12. Farmers Cooperative Elevator Association (Blooming Prairie, Minnesota, 1950). 13. Halstad Elevator Company (Halstad, Minnesota, 1956)."

Table 6 (p. 11) shows: "Soybeans crushed and percent of U.S. total crushed by cooperative mills, selected years 1949-68." The number of U.S. cooperatives crushing soybeans decreased from 19 in 1949 to only 13 in 1968. But the amount of soybeans crushed by these cooperatives increased from 7.37 million bu in 1949 (3.8% of total soybeans crushed) to 92.13 million in 1968 (15.2% of total crushed).

Photos show: (1) Soybean processing plant of Gold Kist Inc. (formerly Cotton Producers Assoc.) at Valdosta, Georgia (p. 12). (2) "Loading dock area of modern warehouse at Boone Valley Cooperative Processing Assoc., Eagle Grove, Iowa. This association operates a truck fleet for receiving soybeans from local elevators and shipping meal" (p. 55).

Note 2. This is the earliest document seen (June 2005) that mentions Gold Kist in connection with soybeans. Address: USDA Farmer Cooperative Service.

580. Hadsell, Robert M. 1971. Food processing: Search for

growth. Concern for nutritive value, additives, convenience items, and new products, as well as diversification, mark this \$90 billion industry. *Chemical and Engineering News*. Aug. 23. p. 17-27.

• **Summary:** The food industry is one of the largest segments of the U.S. economy. The \$90-billion food *processing* industry, noted for its low profit margins and steady growth, is always looking for new growth areas. In 1960 U.S. consumers spent 20.0% of their disposable income on food, but only 16.6% in 1970. There is a long-term trend toward convenience foods—those that require less preparation before serving. Sales of snacks are booming. There has been a major shift to vegetable sources of oils and fats, away from animal sources such as butter and lard. Proteins are increasingly used as ingredients in foods.

Hammonds and Call of Cornell University [Ithaca, New York] found (1969, 1970) that the four largest selling proteins in human foods were nonfat dry milk (1,020 million lb), whole dry milk (50 million lb), soy protein (192 million lb), and casein (100 million lb). Others included egg proteins, hydrolyzed vegetable proteins [from wheat and soybeans], and whey. They point out that many of these protein ingredients are added to foods for functional rather than nutritional reasons. “Soy proteins in particular are noted for their ability to bind water and fats.” The retention of water improves the freshness of baked goods, for example. In processed meats, added protein retains natural juices and flavor, and may help bind ground particles together—as in hamburger patties. “Proteins also act as stabilizers for whipped dairy products. Of the vegetable proteins, soy protein is most widely used as a food ingredient.” Dr. Hammonds and Dr. Call estimate that 121 million pounds of soy flour and grits were used in food products for human use in 1969, along with 33 million pounds of soy concentrates and 38 million pounds of soy isolates.” The flour and grits (40-55% protein) cost 5.5 to 11 cents/lb, the concentrates (60-79% protein) cost 18-25 cents/lb, and the isolates (90-97% protein) cost 35-45 cents/lb.

In 1970 Dr. William T. Manley and Dr. William W. Gallimore, economists in the USDA’s Economic Research Service, came up with slightly different estimates. Production in a fourth category, textured soy proteins, was about 25 million pounds. They cost about 50 cents/lb and up, depending on the type. If all of Manley and Gallimore’s soy protein products were used in human foods, “per capita consumption in 1970 would have been less than 3 pounds.” Yet they predict that by 1980 vegetable protein extenders will displace 15-20% of the meat in food preparations.

A photo shows two hands spreading a tow of spun soy protein fibers. Each tow contains 16,000 monofilaments.

The section titled “Integration” discusses ADM, Central Soya, and A.E. Staley Manufacturing Co. how they specialize in soybean processing, and how they are undergoing vertical integration. The 1970 acquisition of

Gooch Food Products marked ADM’s entry into the sale of consumer products. ADM makes and “markets a line of soy protein ingredients, including textured soy protein made by extrusion in a 3,000 ton-per-month plant at Decatur, Illinois.” One of ADM’s textured soy protein products resembles bits of bacon; it is sold to other food companies to market—not to consumers. Address: Asst. Editor.

581. Laine, Iris Coyn. 1971. Soy goes to school. *School Lunch Journal* 35(7):41-43. July/Aug.

• **Summary:** “On February 22, 1971, USDA authorized the use of textured vegetable protein, fortified with vitamins and minerals, to meet part of the minimum requirement of two ounces of cooked meat for the Type A school lunch.” Discusses: What this means: Main dishes, sandwiches. What are textured vegetable proteins? Look and taste. Nutritional content. What products are available? Want more information? Contact the Food Protein Council. The nine regular members of the Council are listed: ADM, Cargill, Central Soya Co, Far-Mar-Co, Griffith Laboratories, Miles Laboratories, Ralston Purina Co., A.E. Staley Manufacturing Co., and Swift Chemical Co.

“For schools that prepare their own foods, there are several recipes in USDA’s ‘Quantity Recipes for Type A School Lunches’, that are ideal for including textured vegetable protein products.” The names of ten main dishes (with the USDA Card No. for each) and 2 sandwiches are given. A photo shows three school lunch dishes which include textured vegetable proteins: Hamburger, sloppy joe, and spaghetti sauce. Address: Foodservice Relations Director, Food Protein Council.

582. Pour-El, Akiva. 1971. The unfulfilled dream: The use of soy products in cereal flour. In: American Assoc. of Cereal Chemists, Southern California Section, ed. 1971. *Soy: The Wonder Bean*. California (Symposium). 160 p. See p. 93-111. [46 ref]

• **Summary:** The soybean has great potential to benefit mankind. “The tale to be unfolded here is not one of progress but of wasted opportunities and unfulfilled hopes.” A photo shows Dr. Pour-El. Address: ADM, Decatur, Illinois.

583. Walker, D.B.; Horan, F.E.; Burket, R.E. 1971. Engineered foods—the place for oilseed proteins. *Food Technology* 25(8):55-60. Aug. [12 ref]

• **Summary:** Contents: Introduction—history. Both oil and meal economically important. A need for inexpensive protein foods. Vegetable protein: a natural choice. Problems of engineered protein foods. Low-cost nutritional blended flours (CSM, WSB, etc.). A wheat-soy blend for bakery products. Textured protein products: the spinning process, the thermoplastic extrusion process. Consider economics. Obstacles to be overcome: educational, governmental regulations. Looking toward the future.

“The development of the soybean industry in the U.S. has brought about striking changes in land utilization in that some 400,000 acres were planted in soybeans in 1925, compared to over 42 million acres in 1970—a hundredfold increase.” Address: 1. President of Processing Co.; 2. Director of Research; 3. V.P. of Soy Specialties. All: Archer Daniels Midland Co.

584. Burket, R.E. 1971. Protein markets for 1972: Combining soy protein with meat offers livestock growers a better market for parts of carcass not sold as retail cuts. *Soybean Digest*. Nov. p. 5-7. [4 ref]  
 • **Summary:** In 1970, estimated volume of production for soy protein foods in the U.S. was as follows, in million lb: Soy flour and grits 325-500 (\$0.065/lb), soy protein concentrates 25-30 (\$0.20-25/lb), soy protein isolates 20-25 (\$0.38-45/lb), textured soy protein products 25 (extruded dry is \$0.27+/lb, and spun fibers containing 60% moisture are \$0.50+/lb). A portrait photo shows Mr. R.E. Burket. Address: Vice President, Specialty Div., ADM.

585. *Food Processing (Chicago)*. 1971. Textured vegetable protein in school lunch program: Reduces ingredient cost for meat dishes up to 20 per cent. Autumn. p. F4-F9. Foods of Tomorrow section.

• **Summary:** A major, comprehensive cover story with 3 color photos and one black-and-white photo. Discusses: “Textured vegetable protein” [textured soy flour], “hydrated vegetable proteins,” “products fabricated from spun fibers,” “spun protein products,” “extruded and expanded products,” FNS Notice 219 (by USDA’s Food & Nutrition Service), “vegetable protein ingredients,” spun vegetable protein—Bontrae from General Mills, Temptin from Miles Laboratories, “granular soy concentrate” [from Swift & Co.], Promosoy SL from Central Soya, Mira-tex 210-1 from A.E. Staley Manufacturing Co., unflavored textured vegetable protein from ADM, Ultra-Soy from Far-Mar-Co, and Patty-Pro from Griffith Laboratories.

Note: This is the earliest English-language document seen (Nov. 2015) that contains the term “granular soy concentrate.” It refers to a type of extruded textured soy flour.

586. *Soybean Digest*. 1971. What’s ahead for soy protein? Nov. p. 11-13.

• **Summary:** Discusses the work of the Food Protein Council, established this year as an autonomous organization within the National Soybean Processors Association. “The goal of the new FPC is to centralize promotion of edible vegetable protein for use in human food.” The focus in 1972 will be on the school foodservice market, plus the institutional and commercial restaurant market. “The Food Protein Council, like its parent association, the National Soybean Processors Assn., is managed by Smith, Bucklin & Associates Inc...

Member companies of the Council are: Archer Daniels Midland Co.; Cargill Inc.; Central Soya Co. Inc.; Far-Mar-Co, Inc.; Griffith Laboratories; Miles Laboratories Inc.; Ralston Purina Co.; A.E. Staley Manufacturing Co.; and Swift Chemical Co.”

587. Kies, Constance; Fox, Hazel M. 1971. Comparison of the protein nutritional value of TVP, methionine enriched TVP and beef at two levels of intake for human adults. *J. of Food Science* 36(6):841-45. Sep/Oct. [14 ref]

• **Summary:** Three groups of adult men were fed beef, an extruded soybean product resembling beef (TVP; textured soy flour produced and supplied by the Archer Daniels Midland Co.), and a 1% DL-methionine fortified product—at two levels of nitrogen intake. Mean nitrogen balances of subjects fed 8.0 gm nitrogen per subject per day were: beef +0.74 gm nitrogen per day, TVP +0.78, methionine fortified TVP +0.72. Mean nitrogen balances of subjects fed 4.0 gm nitrogen per subject per day were: beef -0.30 gm nitrogen per day, TVP -0.70, methionine fortified TVP -0.45. DL methionine fortification at the 1% level of the TVP was demonstrated to be partially effective in improvement of nitrogen balance at low nitrogen intakes. Address: Univ. of Nebraska, Lincoln, Nebraska.

588. Dimler, R.J. 1972. Re: Misuse of the abbreviation TVP for textured vegetable protein. Letter to F.R. Senti, Deputy Administrator, MNR, ARS, Jan. 6. 1 p. Typed, without signature (carbon copy).

• **Summary:** “I find that some of my people are falling into the bad habit of using ‘TVP’ as an abbreviation for the term textured vegetable protein. Unfortunately, TVP is a registered trademark of the Archer Daniels Midland Company, therefore we all need to be very careful to avoid using TVP except in specific reference to the ADM products.

“I am sure that the ADM choice of trademark is going to prove awkward and inconvenient for many people. It is too obvious an abbreviation for the class term textured vegetable proteins.” Address: Director of Div. [Peoria, Illinois].

589. Dimler, R.J. 1972. Soy flavors. *Notes from the Director of the Northern Division* No. 1052. p. 2. Jan. 7.

• **Summary:** “On December 14, Mr. A.C. Eldridge and Dr. W.J. Wolf (OC) exchanged ideas about the nature and origin of flavors in soybean protein products with some research members of Archer Daniels Midland Company, Decatur, Illinois. The ADM group seems convinced that many flavors in soybean protein arise from enzymic and nonenzymic reactions during processing. Of course, a prime suspect is lipoxxygenase acting on polyunsaturated fatty acids. Earlier Dr. D.B. Hand and coworkers at the New York State Agricultural Experiment Station in Geneva implicated this enzyme during their studies on soy milk. Additional enzymes may also be involved since conditions necessary to inactivate

lipoygenase almost invariably inactivate other enzymes as well. Consequently, correlation of flavor score with inactivation of lipoygenase does not prove that a cause-and-effect relationship exists. The ADM group is still trying to find a satisfactory group of terms to be used by their taste panel to describe the various flavors noted in soy products particularly after cooking.” Address: Director [Northern Regional Research Lab., Peoria, Illinois].

590. *Wall Street Journal*. 1972. Archer-Daniels-Midland president Andreas reportedly will quit: Executive expected to retain big equity and remain a director; Donald Walker seen successor. Jan. 18. p. 26.

• **Summary:** Lowell W. Andreas, age 49, will step down as president of ADM within a few weeks; he was not available for comment.

Donald B. Walker, who presently heads the firm’s soybean processing operations, was once an executive in the soybean operations of Ralston Purina Co.

In 1965 the Andreas brothers, Lowell and Dwayne, obtained a controlling interest in ADM at a time when profits were drooping. Since then profits have more than quadrupled. “In fiscal 1971 ended June 30, net income was \$12.2 million, or \$3.83 a share, and sales were \$659.8 million.

“The Andreas brothers, after taking control, sold off some unprofitable divisions and trimmed overhead costs dramatically.” They also moved the company headquarters to Decatur, Illinois, from Minneapolis, Minnesota.

591. Winson, Abraham; Hampson, Ernest Jeffreys. Assignors to Arkady New Foods Ltd. 1972. Manufacture of protein-containing foodstuffs [cheese-like products]. *British Patent* 1,356,363. Application filed: 26 Feb. 1972. 4 p. Complete specification filed: 29 Jan. 1973. Complete specification published: 12 June 1974.

• **Summary:** Soymilk was subjected to a 3-stage lactic fermentation (e.g. with *Streptococcus cremoris* or *S. diacetylactis*) and the resultant curd pressed, then either salted and stored to produce a cheese-like product or treated with beef or fish flavors. Address: Skerton Rd., Old Trafford, Manchester [England].

592. *Wall Street Journal*. 1972. Ralston, Archer, Swift accord. April 6.

• **Summary:** The three companies announced jointly settlement of litigation concerning a vegetable protein product, in federal district court at Peoria, Illinois. Ralston and Swift agreed to pay Archer a royalty for a nonexclusive license to make, use, and sell textured protein products made under a patent held by Archer.

Note: This short article (2 column inches) is in the lower right corner of an unknown page. It may appear only in the Midwest edition.

593. *Journal Star (Peoria, Illinois)*. 1972. Agreement reached on soybean patent. April 9.

• **Summary:** Discusses the settlement of litigation entered into by ADM, Ralston Purina Co. and Swift & Co. involving a high-protein meat-like product made from soybeans. Swift claims that “Morris D. Wilding filed for the patent March 1, 1965. ADM says William T. Atkinson applied for the patent Aug. 7, 1966, and Ralston claims Ronald J. Flier filed for it Sept. 9, 1966.

“On Aug. 13, 1971, the U.S. Patent Office Board of Patent Interferences wrongly rule that Flier was the inventor, says ADM’s suit. Ralston contests ADM’s claim.”

594. *Journal Star (Peoria, Illinois)*. 1972. Soybean dispute settled. April 11.

• **Summary:** On 18 Aug. 1971 ADM filed against Ralston Purina Co. (St. Louis, Missouri) and Swift and Co. (Chicago, Illinois). They filed countersuits. Each of the companies claimed the patent for making simulated meat from vegetable sources (mainly soybeans; for human consumption and pet foods) had been assigned to them by inventors. ADM granted to Ralston and Swift a nonexclusive license to make and sell products under a process patented by William T. Atkinson. They will pay ADM a \$30,000 royalty.

Ralston Purina granted to ADM a license to make and sell the product under a patent of Ronald J. Flier; ADM will pay a royalty of up to \$30,000. Swift granted to ADM and Ralston a royalty-free license.

595. Mustakas, G.C. 1972. Re: Memorandum–Extrusion cooking research as related to textured protein patents. Visit of Mr. Endre Sipos of Central Soya Co. Letter/Memorandum to E.D. (Engineering & Development Lab.) files, June 27. 1 p. Typed, without signature (carbon copy).

• **Summary:** Endre Sipos is assistant director of research at Central Soya Co., 1825 North Laramie Ave., Chicago, Illinois. He visited and spent about 2 hours “seeking background information on the relevancy of our early extrusion-cooking studies with the textured soy protein patent applications. ADM has been issued a product patent, and in the near future a Ralston-Purina employee will be issued a process patent; the latter will be assigned to ADM who will control the patent rights. In a recent court settlement, Ralston-Purina and Swift will get use of the patents on a royalty-free basis.

“Central Soya does not feel that the patent claims are justifiable based on prior art both at NMN [probably Northern Marketing and Nutrition Division, later called Northern Regional Research Center, Peoria, Illinois] and in their own research laboratories. Their patent attorneys are now studying the case and feel that their company could make a good case in any infringement suit.

“Mr. Sipos questioned me extensively about our early

extruder work, our patent, and our affiliations with UNICEF, AID, and the Wenger Company.

“In discussing current research, Mr. Sipos emphasized their continuing interest in protein isolates and concentrates commenting that this market will continue to grow. A large obstacle involves the whey disposal problem and it must be solved. He thought this was an area in which the regional laboratories should be getting into. Central Soya currently has a government grant to work on the problem. He feels that ultrafiltration (UF) and reverse osmosis have promise but there are some engineering problems remaining to be solved. They are assigning 40 cents per pound to the value of the protein recovered by UF. I mentioned that we had a definite interest in soy whey disposal for future work pending availability of funds and personnel.

“When I asked about protein yields in the commercial isolate process, he said they are around 30 to 35 percent depending on how much washing they give the curd. This agrees somewhat with Dale Johnston’s (Crest Products) published figures of 25 to 50 percent. Such low yields are a deterrent to the development of low-cost foods from isolates.”

Note: This is the earliest document seen (March 2002) that uses the term “reverse osmosis” in connection with soy. Address: Principal Chemical Engineer, Engineering & Development Lab., Northern Regional Research Lab., Peoria, Illinois.

596. Tung, Ta-Cheng; Huang, Po-Chao. 1972. Feeding of infants with toasted full fat soybean foods. *Tropical Agriculture Research Series* No. 6. p. 199-208. Sept. Symposium on Food Legumes. [18 ref]

• **Summary:** Contents: Introduction. Contains 5 figures and 4 tables. Table 1 shows ingredients of the soya-bean rice formulae: Full-fat soya flour (from ADM or Wenger) 45%. Pre-cooked rice flour 15%. Soya oil 10%. Sucrose 27.5%. Salt mixture 2.5%. Address: Dep. of Biochemistry, College of Medicine, National Taiwan Univ., Taipei.

597. *Decatur Daily Review (Decatur, Illinois)*. 1972. Business briefs. Oct. 16. p. 5.

• **Summary:** “Ross & Rowe, Inc., promotes Garfield: Theodore G. Garfield has been promoted to general sales manager of Ross & Rowe, Inc., a wholly-owned subsidiary of Archer Daniels Midland Co.”

“Garfield will maintain his office at Ross & Rowe’s headquarters at ADM in Decatur.

“Harry K. Bean, ADM vice president, is president of Ross & Rowe, Inc.”

598. Ontario. Ministry of Agriculture and Food. Economics Branch. 1972. The soybean industry in Ontario. Toronto, Ontario, Canada. ix + 93 p. Oct. 6. 28 cm. [10 ref]

• **Summary:** Contents: 1. Introduction: Background, U.S.

production and utilization of soybeans, Canadian supply and utilization of soybeans, supply and disposition of protein meal in Canada, supply and disposition of edible oils in Canada.

2. Soybean production in Ontario: The importance of soybeans to Ontario agriculture, agricultural land use in southwestern Ontario, yields and farm value of principal cash grain crops, characteristics of farms producing soybeans, proportion of soybeans grown on farms in different size groups, soybean production on crop and livestock farms, size and income potential of farms producing soybeans, comparative costs and returns for soybeans and other crops.

3. Marketing soybeans in Ontario: Timing sales of Ontario soybeans, the country elevator system, handlings by county, comparison between Ontario and Indiana elevators, services performed by country elevators, terms of first sale, grading, purchase and transport of soybeans by processors, the Ontario Soya-Bean Marketing Board.

4. Processing soybeans in Ontario: Structure and technology of the industry, the market for Canadian oil, the market for Canadian meal, processing margins.

5. Price determination for Ontario soybeans: The general price level for soybeans, Chicago prices and Chatham Track prices, tariff change and price, on-boat prices and handling expense, summary of price adjustment, significance of the difference in relative prices in May and December, quality difference and price, the dealer margin.

6. Prospects and outlook for soybeans: U.S. and world prospects for soybeans, prospects for Ontario soybeans in present markets, competition from prairie rapeseed, alternative opportunities for Ontario soybeans, summary of price outlook.

Soybeans were introduced into Canada in 1893 at the Ontario Agricultural College. They began to be produced commercially in the early 1930s. “From 1941 to 1971, the area planted to soybeans in Ontario increased from 10,000 to 360,000 acres. Although soybeans are not a major contributor to total farm income in Ontario, they are a vital part of the cash grain economy of southwestern Ontario... Cash receipts from soybeans amounted to \$16.7 million in 1969, \$23.9 million in 1970, and \$29.1 million in 1971. From 1969 to 1971, soybeans accounted for 29.2% of Ontario farm cash receipts from grain and 1.7% of all farm cash receipts.

“In Canada, soybean production and processing is concentrated in Ontario, where the industry was established during World War II. The original impetus came from war-time government policies designed to alleviate the shortage of edible vegetable oils that resulted from the War’s disrupting world production and marketing.” p. 4.

“Very few farms in Ontario produce only soybeans. The crop is usually combined with other cash grain enterprises or with livestock production. In 1966, there were 7,652 farms in Ontario with soybeans, 7,325 of which were in Elgin, Essex,

Kent, Lambton, and Middlesex counties.” p. 17.

“Only three edible oilseed processing plants are in operation in central Canada and all are in Ontario. One is in Hamilton and the other two are in Toronto... Canadian crushers continue to rely largely on imported soybeans.”

“Vertical integration is important in the soybean crushing industry. Victory Soya Mills is owned by Procter and Gamble, a large refiner and user of vegetable oils. Canadian Vegetable Oil Processing Limited (CVOP) is owned by Canada Packers, which refines and uses large quantities of oil. Canada Packers also uses soybean meal in preparing feed for sale through its owned and franchised feed dealers. Maple Leaf Mills is not integrated in terms of oil but is integrated with respect to both purchase of grains and manufacture and sale of animal feed. In view of its lack of integration into use of oil, Maple Leaf is in a good position to sell to Lever Brothers (Monarch Fine Foods) and to Swift Canadian.

“About 23 million bushels were crushed in Ontario in 1970-71. About half of this total was crushed by Victory. The other two firms divided the rest, with CVOP crushing a little more than Maple Leaf Mills” (p. 46). Address: Parliament Buildings, Toronto, Ontario, Canada.

599. Archer Daniels Midland Co. 1972. If you think there’s no place in your product line for TVP... Think again (Ad). *Soybean Digest*. Nov. p. 2 (Inside front cover).

• **Summary:** The top two-thirds of this full-page color ad shows mock-up packages of many imaginary commercial products: Pizza, chili, tamales, meat ball stew, meat loaf frozen dinner, frozen sausage & cheese snack rolls, canned sloppy joe, dry soup mix, and omelet with with imitation bacon bits.

The text states: “TVP–The original textured vegetable protein.” Covered by U.S. patent 3,488,770. “You’ll find TVP already on the shelves in a great variety of brand name consumer products.” It is the answer to ever-increasing costs. Address: Box 1470, Decatur, Illinois 62525.

600. *Soybean Digest*. 1972. How Decatur became the “Soy Capital” [of the world]. Nov. p. 16.

• **Summary:** The top two-thirds of this article consists of six photos: (1) Soy City Tire. (2) The A.E. Staley Mfg. Co. main office in Decatur (14 stories tall). (3) Soy Capital Bank. (4) Soy City Motel. (5) Soy Ford, Inc. (6) Archer Daniels Midland Co. east plant, where TVP is produced. The caption:

“The city of Decatur, Illinois, and its business firms confidently proclaim the city the ‘Soybean Capital of the World,’ as these photos by Leon H. Cassity testify.

“They include the two major processing firms, Archer Daniels Midland Co. and A.E. Staley, and also a number of companies that capitalize on the word ‘Soy.’

“Although Decatur, Illinois, had confidently billed itself as the soybean capital of the world since the 1930’s its claim

was not always secure, the *Decatur Herald and Review* recalls.

“Quoting the Review: ‘Decatur’s neighbor, Taylorville, challenged the title claim in 1946, and for 3 years the sparring went on.

“Oratory contests pitted Decatur Mayor James A. Hedrick against his counterpart in Taylorville, J.W. Spresser.

“The high spot of the oratory was reported to have been when Taylorville attorney Charles Bliss said with tongue in cheek: ‘If all the beans raised in Christian County were dumped in front of the Decatur city hall, it would take 96 snow plows to clear a way for Mayor Hedrick to reach his office before his term expires.

“If oil from the Taylorville soybean crop was poured into Lake Decatur it would make 44 tall men standing on each other’s shoulders look like a totem pole salad.’

“Decatur citizens didn’t take the attack lying down.

“Mrs. Clifford Smith, radio chairman for Woodrow Wilson Junior High School, said, ‘Decatur, the biggest processing bean center, is the capital of the soybean world, in the same manner as Detroit is the center of the automotive industry, instead of the ore field which produced the steel for the cars.’

“The debate continued, but Decatur found proof positive when Clinton Anderson, then U.S. Secretary of Agriculture, spoke of Decatur as the soybean capital of the world.” Address: Decatur, Illinois. Phone: (Area Code 217) 423-4411.

601. *Soybean Digest*. 1972. Grits and flakes... from the world of soy: Two processors get TVP licenses. Dec. p. 23.

• **Summary:** “Archer Daniels Midland Co., Decatur, Illinois, agri-processor, recently announced an additional licensing agreement under its textured vegetable protein product patent.

“Cargill Inc., Minneapolis, Minnesota, has obtained a nonexclusive license to make, use and sell textured vegetable protein products made in conformity with the patent held by ADM.

“This patent covers a high-protein textured product made from soybeans and/or other vegetable oilseeds.”

602. **Product Name:** Protoveg Pork Chunks (Meatlike Products Based on TVP).

**Manufacturer’s Name:** Direct Foods Ltd.

**Manufacturer’s Address:** Greatham, Liss, Hampshire, England.

**Date of Introduction:** 1972.

**Ingredients:** TVP (made by ADM) plus flavoring.

**Wt/Vol., Packaging, Price:** 5 oz or 10 oz double cellophane bag.

**How Stored:** Shelf stable.

**New Product–Documentation:** Rose Elliot. 1972. *Not just a load of old lentils*. p. 151. Recipe for “Vegetarian Pork

Chunks in Ginger Cream Sauce” calls for “1 cup Protoveg pork chunks.”

Export price list from Direct Foods Ltd. 1974. Oct. 1. Protoveg comes in beef, ham, pork, or natural flavors. Sizes are 5 oz, 10 oz, 10 lb, or 50 lb. 10 products total.

603. Smith, A.K.; Circle, S.J. 1972. Protein products as food ingredients. In: A.K. Smith and S.J. Circle, eds. 1972. Soybeans: Chemistry and Technology. Westport, CT: AVI Publishing Co. xiii + 470 p. See p. 339-88. Chap. 10. [180 ref]

• **Summary:** Contents: 1. Flavor: Taste panel results, flavor components, plastein formation and flavor, plastein formation and nutrition, some food uses tolerant of soy flavor. 2. Bread and pastries: Soy flour history, effect of soy flour on baking characteristics, soy protein isolate in bread, soy flour and flavor, enzyme active soy flour, soy flour in Britain, detecting of soy flour in wheat flour. 3. Other baked goods: General, doughnuts, snack products. 4. Breakfast cereals. 5. Macaroni products. 6. Dairy-type products: Imitation milk, soy milk, filled milk, soybean cheese, imitation cream cheese, coffee whiteners, whip toppings, and frozen desserts, yogurt type products. 7. Comminuted meat products and meat analogs: Comminuted meat products, meat analogs, spun fiber type meat analog, extrusion-cooked type meat analog, heat-gelled type meat analog, meat fibers in heat-gelled protein matrix, assay of soy protein products in meat-type foods. 8. Gelling and aerating agents: Gelsoy as gelling agent, soy protein isolate as gelling agent, soy protein isolate as aerating agent, soy whey protein as aerating agent, enzyme modified isolates as aerating agent, foam-mat drying adjunct, foaming agent for soda water. 9. Miscellaneous food applications: Brew flakes, soups, gravies and sauces, confections, imitation nut meats, and [soy] nut butters, spray drying adjunct. 10. Nonfermented Oriental soybean foods: Introduction, Chinese soy milk, dried soybean whole and defatted milks, tofu (fresh tofu, bagged tofu, dried tofu, fried tofu), yuba, kinako (“The Japanese have a product which is similar to full-fat soy flour except that it is made from whole roasted soybean and this contains the seed coat”), soybean sprouts (compositional changes).

Concerning Brew Flakes (p. 373): “Soy flakes, grits, and peptones have been used since about 1937 or earlier (Burnett 1951) as adjuncts in brewing beer. Grits and ground meal from screw press processing were the first products used in brewing but later they were replaced by solvent-extracted flakes. The best results are obtained with flakes or flour having a high NSI (nitrogen solubility index) with a minimum of heat treatment in processing. Up to 0.75 lb. of flakes per barrel of beer has been recommended by Hayward (1941).

“The flakes may be used in the normal mashing operation to provide amino acids, peptides, minerals, and vitamins as nutrients for the yeast. It was reported by

Wahl (1944) and Wahl and Wahl (1937) that addition of hydrolyzed soybean protein directly to the beer improves foam stability, flavor, and body of the beer.” Address: Northern Regional Research Lab., Peoria, Illinois.

604. Snider, Nancy. 1972. Soybean (protein) recipe ideas. New York, NY: Arco Publishing Co., Inc. 112 p. Illust. Food category / recipe index. 18 cm.

• **Summary:** Contents: Preface. About this book. Who makes what: Archer Daniels Midland Co. (TVP), Central Soya (Promosoy), Far-Mar-Co (Ultra-Soy), General Mills, Inc. (Bac\*os, Bontrae), The Griffith Laboratories, Inc., Ralston Purina Co. (Edi-Pro), A.E. Staley Co. (Mira-Tex), Swift & Co. (Texgran), H.B. Taylor Co. (Textrasoy), Worthington Foods, Inc. (Fibrotein). The facts about soy protein. Soy what? Cooking with soy protein. Cover-ups. Things to do with bacon-flavor soy protein. Soy cooking tips. Breakfast ideas. Breakfast put-ons. Appetizers. Soups. Garnishes for soups. Entrees. Soy sandwiches. Breads. Desserts. Food category / recipe index (within each major food category {appetizers, bread, breakfast ideas, desserts, etc.}, recipes are listed alphabetically).

605. Horan, F.E. 1973. Wheat-soy blends: High-quality protein products. *Cereal Science Today* 18(1):11-14. Jan. [13 ref]

• **Summary:** Wheat-Soy Blend is a mixture of bulgur wheat flour, wheat protein concentrate, defatted soy flour, soy oil, minerals and vitamins.

In recent years “empty calories” has become a household saying when matters of everyday nutrition are discussed. It refers to food that are high in calories and low in nutritional value. Address: Director of Research, ADM, Decatur, Illinois.

606. *Soybean Digest*. 1973. Name Andreas ADM board chairman. Jan. p. 31.

• **Summary:** “Dwayne O. Andreas, chief executive of Archer Daniels Midland Co., was also elected chairman of the board by the directors, succeeding John H. Daniels. Mr. Daniels was elected chairman of the board of Independent Bancorporation, ADM’s wholly-owned bank holding company subsidiary, to succeed Mr. Andreas. Mr. Andreas plans to headquarter in the ADM executive offices at Decatur, Illinois, and Mr. Daniels will move to the Independent Bancorporation’s executive offices in Minnesota.

“Shareholders re-elected all present directors and all other officers.

“ADM is a leader in production and marketing of high protein soy flours and soy specialty products, including TVP, ADM’s brand of textured vegetable protein. According to Donald B. Walker, ADM president, the great world need for protein food has led ADM to place increasing emphasis on

food proteins both in the U.S. and internationally.”

Note: The arrival of Dwayne Andreas as CEO and board chairman marks the start of a new and very successful era for ADM.

607. Kosaric, Naim; Singh, Narendra. 1973. Nutrition—Two views. Kosaric: develop new technologies. Singh: research is on the wrong track. *Ceres: FAO Review on Development* 6(1):32-40. Jan/Feb.

• **Summary:** Discusses: Population explosion, amino acid fortification of foods, fish protein concentrate, leaf proteins and leaf protein concentrate, single-cell proteins (especially petroleum-grown yeast protein), ramie (*Bohemeria nivea*), etc.

Singh argues that corporate elites from developed countries set the R&D priorities and patterns in Third World countries for their own (elite) benefit, while disregarding simple, local solutions to nutritional problems. “Soy interests have extensively supported specific R & D use of the soybean. TVP promotion is the latest manifestation of their pursuits. In India, even research on groundnuts was supported by North American interests because of the market potential for soybean technology. Now, overt and covert promotional pressures have started to displace groundnut by soybean, even in raw material research and development.”

Singh notes that leaf protein research started over 40 years ago and research on petroleum-grown yeast protein (SCP) started about 10 years ago. There are large sidebars on “Amino acid fortification of foods” and “Leaf protein concentrate” based on information provided by the Joint FAO/WHO/UNICEF Protein Advisory Group. Address: 1. Assoc. Prof., Faculty of Engineering Science, Univ. of Western Ontario, Canada; 2. Inst. for Storage and Processing of Agricultural Produce, Wageningen, Netherlands.

608. Horan, F.E. 1973. Meat analogues. In: Congressional Record, Senate, April 4, 1973. See p. S 6653–S 6656. \*

• **Summary:** This paper was originally presented at the third meeting of the Working Group on Integrated Meat Development, Industry Cooperative Programme, 22 March 1973, FAO Headquarters, Rome, Italy. Address: ADM, Decatur, Illinois.

609. Lockmiller, N.R. 1973. Increased utilization of protein in foods. *Cereal Science Today* 18(3):77-81. March. [13 ref]

• **Summary:** Details are given on each type of soy protein product and the way each is used. Table 4 gives the price per pound for various soy protein foods, the estimated annual production in 1972, and the current uses. Soy flour and grits, \$0.15-\$0.17/lb, 352-500 million pounds produced in 1972. Used as ingredients for baked goods, dog foods, sausages.

Soy protein concentrates, \$0.21-\$0.25/lb, 40-50 million pounds produced. Used in manufacturing textured products. Ingredients in processed meats, baby foods, and health foods.

Soy protein isolates: Regular \$0.41-\$0.45/lb, modified isolates \$0.92-\$1.33/lb. Production of both types: 35-40 million pounds. Regular isolates are used in manufacturing analogs such as meatless ham, bacon, hot dogs, etc. Modified isolates are used in whipping agents.

Textured soy protein products: Extruded flours, \$0.27/lb and up. Spun isolates \$0.50/lb and up. Production of both combined: 35-40 million pounds in 1972. Textured soy protein products are used in bacon bits, bacon strips and similar foods.

Table 6 shows what companies supply which of the following types of edible soy-based ingredients: Soy flour and grits (defatted, low-fat, full-fat), concentrates, isolates, spun fibers, textured soy prod. The companies are ADM (soy flour and grits—defatted, low-fat, and full fat, textured soy prod.), Cargill, Central Soya, Far-Mar-Co, General Mills, Griffith Labs, Gurley, Inc., Lauhoff Grain Co., Miles (Worthington), National Protein, Ralston Purina, A.E. Staley, Swift & Company. Address: A.E. Staley Mfg. Co., Decatur, Illinois.

610. Fischer, Norman H. 1973. Beanburgers—More Americans turn to soybean products as meat substitutes: Restaurants, stores find consumers like the taste and especially the price. The future gets a lot closer. *Wall Street Journal*. April 3. p. 1, col. 1.

• **Summary:** In the continuing struggle against high meat prices, King’s Food Host, a restaurant chain based in Lincoln, Nebraska, has been adding TVP for several months now to its Big King burgers at about 20 of its 140 branches. It sells these “soyburgers” for \$0.49, which is 10 cents less than usual. Sales have been very good, with no complaints.

In the past, soybean products have been slipped into a variety of consumer foods, but during the past few months, they have been increasingly advertised as extenders in hamburgers. Consumers seem to welcome the reduction in meat prices.

“The future is now: Over the past several years, such companies as General Mills Inc., Archer-Daniels-Midland Co., Ralston Purina Co., and the Worthington Foods subsidiary of Miles Laboratories Inc., have developed soybean products that have virtually the same appearance, texture and taste as beef, pork, poultry, seafood and even nuts. Some of these all-soy products already are on the market, and more are being added annually.

“U.S. Agriculture Department [USDA] researchers say that by 1980 soy protein could account for as much as 8% of the nation’s ‘meat’ requirements.”

This is good news for those who grow and process soybeans. The National Soybean Processors Association says that sales of soy protein products for use in human foods totaled about \$75 million last year, a ten-fold jump from five years earlier. And buoyed by the growing use of soy as an extender for ground beef, sales this year are expected to

reach \$120 to \$140 million.

“The biggest move was made in mid-March by Red Owl Stores Inc. in Minneapolis [Minnesota], when it introduced ‘Juicy Burger II’ in the fresh-meat counters of its 51 supermarkets in the Minneapolis-St. Paul area and its six Duluth stores. ‘Juicy Burger II’ is 75% ground beef and 25% soy protein, plus a few flavorings. It is selling for about 75 cents a pound, 20 to 25 cents less than all-beef hamburger sells for.” Address: Staff reporter.

611. *Business Week*. 1973. Making it cheaper to eat protein. May 12. p. 184, 186.

• **Summary:** Skyrocketing food prices are forcing the food industry to develop new textured soy protein products to extend or substitute for meat, using either of three general methods: Spinning (Miles Laboratories/Worthington Foods), concentrating (Central Soya Co. concentrates), or extruding (ADM, this is now the leading method for making textured vegetable protein).

“Archer Daniels Midland vigilantly protects both its broad product patent and its copyright on the initials TVP (for textured vegetable protein). The company cemented its patent position with a court suit in 1971. Today, five of its eight competitors—Cargill, Miles Laboratories, A.E. Staley, Swift, and Ralston Purina—sell vegetable protein lines under license from ADM.

“Burger mixes: TVP got its first big boost when the Agriculture Dept. [USDA] in 1971 approved its use in the national school lunch program. By the end of 1972, total demand had grown to about 55-million lb. a year, with ground beef as the largest single market.

“Red Owl Stores, Inc., sells such burger mixes across its butcher counters, usually in a mix of 75% meat to 25% vegetable protein. Called Juicy Burger II, or Juicy Blend II, the product sells for \$0.75 a lb., compared with \$0.99 a lb. for ground beef. Red Owl says that the mixture outsells whole meat by 3 to 1. Kroger Co., the nation’s third-largest food chain, last month came out with its own mix of ground beef and textured vegetable protein, called Burger Pro.

“Dr. Virgil O. Wodicka, director of FDA’s Bureau of Foods, says: ‘Don’t tell consumers what it isn’t—tell them what it is.’”

612. *Business Week*. 1973. Dwayne Andreas’ affair with the soybean: he has parlayed the protein-rich legume into a major commodity. June 2. p. 54.

• **Summary:** Andreas has great interest in and hopes for TVP, though it presently accounts for only a tiny fraction of ADM’s total sales. “Andreas believes its potential as a food extender and meat substitute in the U.S. could lead to sales of 2.7 billion pounds by 1980. Now ADM has an estimated 60% of the business, with the rest produced under license. Talks are also under way for ADM to construct TVP plants in Brazil and Yugoslavia, an ADM TVP plant is under

construction in Great Britain and one is in the planning stages in Australia.

“The 55-year-old Andreas seems the very antithesis of an entrepreneur... His father, Reuben P. Andreas, was farming at Lisbon, Iowa, near Cedar Rapids, when he took over a bankrupt country elevator during the Depression and ran it as a family enterprise with his four sons. Honeymead Products Co. [sic, R.P. Andreas & Son], as it was called, bought processed soy meal until 1938, when the 20-year-old Dwayne persuaded his father to buy the machinery to process its own. Honeymead built the plant in Cedar Rapids.

“In 1945, the Andreas family sold the family-owned business to another private company, the giant Cargill, Inc., in Minneapolis [Minnesota]. For seven years Andreas ran Cargill’s soybean business.

“In 1952, he left Cargill and again set up Honeymead [in Mankato, Minnesota], which promptly reentered the soybean business in competition with his former employer. Andreas and his brothers, Lowell, Albert and Glenn, sold Honeymead to the Grain Terminal Association, which operated the soybean business of Farmers Union, a large farmer-owned co-operative...

“In 1966, Minneapolitans were startled to learn that he had bought an interest in Archer Daniels Midland, an old-line family-controlled grain company. With a foothold in ADM, which Andreas says he was ‘invited’ to take by the Archer family, Andreas began buying ADM stock on the open market. Andreas was invited to sit on the board, and became chairman of the executive committee in 1968. ‘I knew that ADM was a dozen years ahead of everyone else in textured vegetable protein research, and I believed that was where the important action was going to be,’ Andreas recalls. ‘One of the first things I did was to take the edible soy out of the lab and construct a plant in Decatur to make all the grades of edible soy protein in 1969. When we first built it, we thought we had the capacity to make all the product we could sell through 1976. We have already doubled production, and are short.’”

A photo shows Dwayne Andreas. The caption: “Andreas sees a 2.7-billion-lb soybean market by 1980.”

613. Cranebrock, Al Van. 1973. Archer-Daniels-Midland getting fat on soybean hamburger diet. *Los Angeles Times*. June 3. p. 3, 6.

• **Summary:** Supermarket chains in growing numbers are buying TVP to mix into their meat. “Just in the last week or so, Jewel Cos. Inc., whose food stores dominate the grocery business in the Chicago area, has begun selling TVP by itself in a private-label package and displayed next to beef in the meat departments. The idea is that the TVP can be mixed with the beef in the home to suit a family’s taste.”

ADM is currently sold out of TVP, is producing around the clock seven days a week, and will have expanded its capacity by 50% next month and an additional 50% by

December. ADM has licensed Ralston Purina, Swift, and A.E. Staley Mfg. Co., among others, to produce TVP. It is estimated that TVP now accounts for 25% of ADM's earnings but only a small fraction of that in sales. Address: Exclusive to The Times from Reuters.

614. *Feedstuffs*. 1973. ADM adds protein specialty division. July 23.

• **Summary:** Richard E. Burket has been named president of the newly formed division, which will market the company's TVP brand of textured vegetable protein and its line of soy flour and grits.

615. Korslund, Mary; Kies, C.; Fox, H.M. 1973. Comparison of the protein nutritional value of TVP, methionine-enriched TVP and beef for adolescent boys. *J. of Food Science* 38(4):637-38. July/Aug. [6 ref]

• **Summary:** Textured vegetable protein [made from defatted soybean meal] is used increasingly as a economical source of protein. This 23-day experiment, consists of a 5-day adjustment period and three 6-day experimental periods during which nitrogen balance is measured in human subjects.

“Mean nitrogen balances for subjects fed TVP, methionine-enriched TVP or beef as the primary source of dietary protein were -0.08, +0.48 and +0.32 g per day, respectively (Table 3).” Address: Dep. of Food & Nutrition, Agric. Exp. Station & College of Home Economics, Univ. of Nebraska, Lincoln, NE 68503.

616. Standifer, L.N.; Owens, C.D.; Haydak, M.H.; Mills, J.P.; Levin, M.D. 1973. Supplementary feeding of honey bee colonies in Arizona. *American Bee Journal* 113(8):298-301. Aug. [8 ref]

• **Summary:** Two protein rations were fed to colonies of honeybees in summer and winter tests, and compared for stimulation of brood production. Ration 1 (11% protein patty) contained 690 gm Wheat, 907 gm expeller-processed soybean flour (52% protein; made by ADM), 3,175 gm granulated sucrose, and 1.9 liters sucrose-water (2:1 v/v). Ration 2 (11% protein pellets) contained Wheat, sugar, and water. Both rations supported brood production when natural pollen and nectar were insufficient. Address: Agricultural Research Service, USDA, Be Research Lab., 2000 E. Allen Road, Tucson, Arizona 85719.

617. *Forbes*. 1973. The hamsoyburger: Science made it possible but high meat prices made it practical—The hybrid hamburger, which is in many ways better than the real thing. Sept. 15. p. 85-86.

• **Summary:** For years, American companies have been experimenting with the idea of using soybeans to make meat go further, but it took soaring beef prices to make the idea a reality. It all started at Red Owl Supermarkets

in Minneapolis, Minnesota. In March 1973, the 400-store chain introduced Juicy Burger II at 50 of its stores. The new product, 75% hamburger and 25% soybean extender, was 20 cents a pound less expensive than its all-meat counterpart. But it also contained less cholesterol, fewer calories, and less shrinkage. The labeling was very clear; consumers knew what they were buying. The chain has already sold one million pounds of the new product—which is outselling regular ground meat 6-to-1 and is now called Juicy Blend II—in response to loud complaints from the state department of agriculture.

After Red Owl broke the imaginary barrier, hundreds of other supermarket chains started to carry the product: Safeway, Kroger, Grand Union, Stop & Shop, etc.

618. Tanner, J.W. 1973. Where we are and how we got there: An historical review of soybean production in Ontario. In: Ontario Soya-Bean Growers' Marketing Board, ed. 1973. Ontario Soybean Symposium 1973. Ottawa: Agriculture Canada. 110 p. See p. 11-22.

• **Summary:** The best summary of soybean history in Canada seen up to this time. The author believes that, “based on the chaotic events of the last 12 months... for historical purposes it would seem desirable to divide the history of soybeans into two eras: pre-September 1972 and post-September 1972. Certainly the events of the last year created an awareness in producers and the general public alike of a whole new vocabulary, including words such as anchovies, futures market, protein gap, embargo, superburger, and soaring prices. The latter produced another vocabulary most of which would be unprintable.”

Note 1. This is the earliest English-language document seen (Nov. 2014) that contains the term “superburger” (or “superburgers”).

“The first report of soybeans grown in Canada was by C.A. Zavitz in 1893 at the Ontario Agricultural College. The seeds had been obtained from Dr. C. [Prof. C.C.] Georgeson, Kansas, who had received them from Japan three years earlier. [Note 2. Zavitz first published his research on soybeans in 1901, and first reported the results of his 1893 research in 1908]. For 30 years Zavitz, alone in Canada, meticulously conducted trials on variety tests, dates of planting, seed rates and row widths for soybeans grown for seed and hay.

“By 1927, Zavitz had evaluated over one hundred varieties, most of them for five years or over. The 31 year average of his best variety, Early Yellow was 16.78 bu/acre. The 22 year average green crop yield for the variety Ito San was 7.5 tons per acre per year. In 1924, Zavitz released OAC 211, the first variety of soybeans registered by the Canadian Seed Growers' Association. The variety continued as one of the recommended varieties until the mid 40's.

“The soybean program at Harrow was started in 1923 by Dr. F. Dimmock. [In 1923 he grew the first soybeans

at Harrow. In 1925 the first soybeans were grown in Kent County. In 1930 the first soybean crosses were made at Harrow.] Dr. Dimmock was transferred to the Ottawa research station in 1927 where he continued his work on soybeans and produced a string of excellent early varieties of soybeans over 35-40 years including Acme, Comet, Crest, Mandarin, Capital, Merit, Kabott and Pagoda. The Harrow research was continued by Casper Owen who started breeding soybeans in 1931. This program was to prove to be one of the most outstanding in North America producing such varieties as AK (Harrow), Harman, Harly, Harosoy and Harome.”

“In the late 1920s a few farmers were growing a small acreage of soybeans for grain, harvesting with a reaper and threshing the seed out. Two short-lived crushing plants were established in the south west part of Ontario in the mid-1930s, one of which was located at Shelbourne [sic, Colborne] Street in Chatham.”

Note 3. Founded in 1934 (see p. 18), this was apparently the first crushing plant in Canada. In *Shepherd's City of Chatham (Ontario) Directory 1934-35* (p. B-166) we read: “Soyabean Oil & Meal Co-operative Co Ltd, G E Biles, mgr, Colborne n, w cor Adelaid.” Spelled out, with punctuation, this becomes: northwest corner of the intersection of Colborne St. and Adelaide St. See also C.A. MacConkey (1935, p. 65) who gives the company name as: Soy Bean Oil and Meal Co-Operative Co. of Canada, Ltd.

“Subsequently, few beans were grown for hay. The late 1930s were critical years for the soybean in Ontario, and without the help of the Maple Leaf Mills plant (which was primarily processing flax) and Toronto Elevators [which later merged with Maple Leaf Mills in 1962], there would have been no place to market the new crop.

“The establishment of soybeans as a major crop in North America was assured by the occurrence of World War II. Demand for oil created a rapid expansion in acreage and processing facilities, and in the U.S.A. 1940 marked the first year in which the acreage harvested as seed exceeded the acreage harvested for hay. The latter continued to dwindle away and now, represents an insignificant portion of the U.S. acreage.

“The rapid expansion in acreage, once the demand for oil was established, occurred as a result of a major promotional effort by the consuming industries. With the construction of a new plant in Toronto in 1944, Victory Mills launched one of the greatest promotions of a crop ever witnessed in the Province of Ontario. Extension bulletins, newspaper advertisements, movies, newsletters and meetings inundated the farmers with information and enthusiasm. Ralph Chamberlain and later Ivan Roberts promoted the crop at every opportunity. Acreage grew and by the early 50's, the soybean had become a major cash crop in S. Ontario and had its own marketing board.

“As the market for oil increased and the acreage

expanded in the 1920's and 30's, the problem of disposing of all of the meal economically became acute, to the point of slowing the expansion... Gradually the feed industry began to recognize the value of the meal in livestock and pet foods with the result that, with a major market established for the meal by-product, the expansion of the oil industry was assured.”

“To me there have been three outstanding accomplishments in the development of soybeans in Ontario to date: the pioneering work of C.A. Zavitz at the Ontario Agricultural College... Next, the role of Victory Mills in promoting the crop once the market for oil was established.

“Finally, the development at the Harrow Research Station of the variety Harosoy by Mr. Casper Owen. Released in 1951, Harosoy eventually grew to 80% of the Canadian crop (1965). However, its total impact was even greater in the United States Midwest where, in 1966, 26% of the total U.S. crop of 25 million acres was Harosoy, including 42% of the crop in Illinois, 48% in Indiana, 46% in Ohio and 58% of Michigan's crop. To be that dominant, a variety can't just be good, it must be great and Harosoy (and later Harosoy 63) was certainly that.”

A graph (p. 20) compares soybean yield in the USA and Canada from 1924 to 1971. The first statistics on Canadian soybean yields date from 1941, and from that year onward Canadian soybean yields were generally higher than U.S. yields—in some year 5-6 bushes/acre higher.

A second graph (p. 22) shows the surprisingly parallel growth of the number of soybean acres harvested from 1924 to 1972. Though the number of acres is smaller in Canada, the rate of growth is almost identical. Address: Crop Science Dep., Univ. of Guelph, Guelph, Ontario, Canada.

619. Manchester, Harland. 1973. And a new way to trim your meat bill. *Reader's Digest*. Oct. p. 119-21.

• **Summary:** About the rise of TVP in the USA as a meat extender. It started to be used in school lunch programs but has now moved into supermarkets. In March 1973 “Red Owl Stores, Inc. of Minneapolis [Minnesota], placed a ground-meat product containing 25-percent soybeans and selling for about 20 cents a pound less than the all-beef hamburger at the meat counters of 51 of its stores in the Minneapolis-St. Paul area. It outsold all-beef hamburger three to one and is now marketed in all 136 Red Owl Stores, as well as 200 franchise stores. Red Owl also sells frozen pizzas and patties in which soybean proteins are used.” Discusses ADM, Worthington Foods, Henry Ford, and Robert Boyer.

620. Ross, Irwin. 1973. Dwayne Andreas's bean has a heart of gold. *Fortune*. Oct. p. 136-41, 243-45.

• **Summary:** One of the best articles and histories seen on Dwayne Andreas and A-D-M. In the 7 years since Andreas took over the leadership of A-D-M, he has nearly tripled sales (from \$371,626,000 in fiscal 1967 to \$967,710,000

in fiscal 1973) and quintupled operating profits (from \$3,225,000 to \$16,895,000). Meanwhile, the price of the stock has nearly quadrupled.

Dwayne Andreas was born in 1918, the fourth son in a family of 5 boys and a girl. They lived on a 160-acre farm in Lisbon, Iowa. "His father, Reuben, came from a Mennonite family, and the children were brought up in something akin to Mennonite discipline—no movies, no Sunday papers, no ball games on Sundays, a surfeit of religious devotions, and unending hard work.

"In 1928, Reuben Andreas was persuaded by the local banker to take over a bankrupt grain elevator in Lisbon. The whole family worked at the business, and it prospered. After graduating from high school, Dwayne went off to Wheaton College, in Illinois, for a year and a half and then entered the family business. Once a year he would travel 300 miles to Decatur, Illinois, to negotiate for his annual supply of soybean meal from the A.E. Staley Manufacturing Co. On a memorable day in 1938, Staley took him to lunch and suggested that the Andreases build a soybean-crushing plant in Iowa. Staley pointed out that Iowa farmers were about to plant a lot of soybeans; Staley's people did not want to expand geographically, so here was a golden opportunity. A few days later, the Andreas family contracted to build a factory in Cedar Rapids. Business was excellent...

"By 1945 the Honeymead Products Co., Inc., was earning \$150,000 a year after taxes. Dwayne Andreas was by now largely running the business, his father having retired and his older brother Albert having sold out. Dwayne was classified 1A in the draft, and in anticipation of departure for the Army he sold the Cedar Rapids plant, and later two smaller operations, to Cargill. In the end, Andreas was not called up and he found himself the 40 percent owner of a corporate shell, still called Honeymead, with a net worth of about \$2.5 million. Thus he became a millionaire at the age of twenty-seven.

"After the sale, Andreas went to work for Cargill, whose president, John H. MacMillan Jr., offered him a 4 percent stock interest. Andreas remained for seven years, making a \$400,000 after-tax profit when he sold his stock back to the company. He built a number of soybean and other oilseed plants, traveled widely, and for the first time got an inside view of the operations of an international trading organization.

"Meantime, his younger brother Lowell had come out of the Army and put Honeymead Products back into the soybean business in Mankato, Minnesota. Dwayne by this time owned the bulk of Honeymead shares. He left Cargill and went to work developing export markets and handling transportation logistics at Honeymead, while Lowell ran the plant. In seven years after-tax earnings went from \$300,000 to \$1 million.

"In 1960, Andreas received a phone call from M.W. Thatcher, the veteran manager of the Grain Terminal

Association, which represented thousands of farmers in Minnesota and the Dakotas who sold soybeans to Honeymead. Thatcher told him that his farmers now wanted to process their own beans and share in the profits."

So G.T.A. bought Honeymead for a sum that eventually came to about \$10 million. "The proceeds went to a corporate shell named First Interoceanic Corp., and both brothers were hired by G.T.A., Dwayne becoming executive vice president." But they were not happy there, in part because of the very different ways that cooperatives and private companies run their businesses.

The Andreases used Interoceanic to invest in several small businesses, and to buy a soybean crushing plant in Decatur. In 1963 they put up \$2.5 million to start the first new bank in downtown Minneapolis in over 40 years; in June 1964 the National City Bank opened and was very successful.

"The move into Archer-Daniels-Midland came in September, 1965, in an unusual way: the Andreases were invited in to provide new leadership. A-D-M not only was a diversified agricultural processing company, but also had a large chemical operation. It was controlled by the Archer and Daniels families of Minneapolis; John Daniels, a grandson of a founder, had served as president since 1958. In 1965, after a three-year decline in earnings, the company could not cover its dividend. Shreve M. Archer Jr., a director, took the lead in inviting the Andreases to join the company, offering to sell a block of 100,000 shares from the holdings of the Archer trust... To Dwayne Andreas, the request to lead A-D-M out of the doldrums looked almost irresistible...

"There were more practical considerations, of course. The stock was a good buy, for at \$33 a share it was nearly \$26 below book value. Andreas could also see great growth potential in A-D-M... Moreover, Andreas was greatly impressed with textured vegetable protein (TVP), a soybean product edible by humans, which A-D-M's laboratories had developed. At the time, TVP was being produced only in the lab, but Andreas could see a host of possibilities for it as a meat extender and as a cheap protein in a variety of foods—from cereals to tuna-fish salad...

"Through First Interoceanic the Andreases bought 100,000 shares of A-D-M, later extending their holdings to 181,900 shares. They assumed personal authority gradually and with faultless diplomacy. Dwayne joined A-D-M's board and executive committee in February, 1966; early the following year Lowell became executive vice president in the newly created office of the president, where he formally shared authority with John Daniels. After a year, Lowell became president and Daniels chairman of the board. While Lowell ran the company on a day-to-day basis, Dwayne, who owned most of Interoceanic, became the ultimate boss in everything but title. He finally assumed the title of chief executive in 1971.

"In 1969, A-D-M and First Interoceanic merged, with

the result that the two Andreas families increased their holdings to 16.6 percent of the shares, and A-D-M became owner of the Minneapolis bank. Lowell Andreas remained president until 1972, when he retired at the age of fifty, as he had long warned he would.

“The Andreas family’s first significant move to revamp A-D-M came in April, 1967 when the entire chemical division was sold to Ashland Oil for \$65 million... Later in the year A-D-M’s unprofitable alfalfa-dehydrating plants were sold for \$5 million... With this sizable bundle of cash, expansion started in a big way.” They invested much of the new money in soybean processing and constructing a TVP plant in Decatur. They increased the capacity of one Decatur soybean crushing plant to 4,000 tons a day—making it the largest single soybean plant in the world. During a 3-year period A-D-M’s soybean crushing capacity was increased to 120 million bushels a year from 50 million.

Two dramatic graphs show: (1) U.S. soybean production, exports, and cash price per bushel from 1964 to 1974 est. (2) A-D-M’s net sales and net earnings during the same period. The caption: “As the bean goes... so goes Archer-Daniels-Midland.”

A large color photo shows Dwayne Andreas in coat and tie, smiling.

621. Alfin-Slater, Roslyn B.; Jelliffe, Derrick B. 1973. Centuries-old cuisine of China is healthful, well balanced: SFH—Science, food, health. *Los Angeles Times*. Nov. 18. p. S70.

• **Summary:** “The Chinese diet, as might be expected, varies considerably from one region of the country to another. Yet it falls into two main groups, based on rice or wheat, the cultural superfoods.”

“In traditional Chinese culture, no animal milk or its products, such as cheese, are eaten at all. It is perhaps for this reason that the soya beans has been” called “the cow of China.”

“Soya curd (tofu),” precipitated by calcium, has an appearance and consistency very similar to those of cream cheese, and is also an important source of calcium in the Chinese diet, which is otherwise rather low in this mineral.

Interestingly, “appropriately flavored soya curd was consumed by Buddhists at feasts hundreds of years ago as a sort of artificial meat—long antedating the present-day textured vegetable protein (TVP) products, mainly derived from soya, which can be processed to give the appearance, texture and flavor of various meats.”

622. Greenberg, Daniel S. 1973. Slaughterhouse zero: How soybean sellers plan to take the animal out of meat. *Harper’s* 247:38-43. Nov.

• **Summary:** Discusses economics and marketing in the growing industry that makes meatlike products from soybeans. “Among some dozen major firms in America’s

vast culinary-industrial complex, the rise of simulated meats is regarded as the biggest opportunity for the triumph of an ersatz product since margarine took over two-thirds of the nation’s butter trays.”

“Numerous regional hamburger chains now serve mass-produced ‘extended’ hamburger patties, and all-vegetable simulations of breakfast sausage and patties are routinely available in supermarkets.”

“Research on the texturizing process began in the 1930s, when the elder Henry Ford became fascinated with the soybean and assigned a team of researchers to transform it into products ranging from fenders to upholstery material. Following laboratory successes that were not economical enough for the production line, the team eventually split up, but two of the researchers, Robert A. Boyer and William T. Atkinson, maintained an interest in rendering the soybean palatable to American tastes. In 1954, Boyer patented a process for isolating protein from soybean meal and spinning it into resilient threads that could be fabricated into simulated meat products, known in the trade as ‘analogs.’ In other words, they look and taste like the real thing. The process, however, was relatively expensive, and beyond the vegetarian market there was little demand for these simulations.

“The real break came in 1970, when Atkinson patented a cheap and comparatively simple process for imparting ‘chew’ to soybean flour by moistening it into a ‘plasticized’ mass, bringing it to a high temperature, and rapidly forcing it through perforated dies into a chamber of lower temperature and pressure. The result is a neutral-tasting granular material of any desired size and shape, depending on the dies, which contains about five percent moisture. When these granules are mixed with water, they retain their structural integrity, and in feel and texture resemble moist bits of hamburger.”

“Dr. Aaron M. Altschul, head of the nutrition program at the Georgetown University School of Medicine, is more outspoken: ‘The ability to produce texture out of soy flour will probably rank with the invention of bread as one of the truly great inventions of food.’”

“ADM... is venturing beyond the hamburger market. Its subsidiary, Gooch Foods, Inc., of Lincoln, Nebraska, is marketing ‘Noodles Stroganoff with Beef-flavored Vegetable Protein Chunks,’ as well as other dishes containing simulated beef.”

“In February 1971, after years of badgering by the industry, the Food and Nutrition Service of the U.S. Agriculture Department finally sanctioned the use of extenders for the meat portion of the school diet to a maximum of 30 percent. The enabling document—FNS Notice 219—is generally regarded as the Magna Carta of textured vegetable protein. During the first year of certification, the schools used 23 million pounds of the stuff; this year they’re up to 40 million pounds, and with meat prices soaring, no one thinks it unreasonable to expect at

least a doubling of that amount in the next year or two.”

“The Red Owl supermarket chain, some 130 stores in the Midwest, had recently introduced ground meat extended 25 percent with textured vegetable protein, labeled ‘Juicy Blend II’ to conform with a Minnesota ban on using ‘burger’ for extended products. It sells at about 20 cents a pound below the undiluted version, and is said to be outselling the all-meat counterpart by three and four to one.”

“The old rules specified that ‘A food shall be deemed to be misbranded’ if it is an ‘imitation’ of another food and does not bear the word ‘imitation’ on the label. The new rules simply say that ‘nutritional inferiority’ shall be the only criterion for evaluating the difference between reality and verisimilitude. The man-made version, if it’s nutritionally equal, need not bear the pejorative ‘imitation,’ though it may not be labeled as the real thing either.” Address: Publisher of *Science and Government Report*, a Washington-based newsletter.

623. Lehman Brothers. 1973. Ralston Purina Company: Company & industry study. New York. 112 p. Nov. 27. [5 ref]

• **Summary:** This company study includes a study of the U.S. soybean crushing industry. Leading processors of soybeans 1972-73 (p. 71). Company (estimated million bushels crushed/percentage of total): Cargill (130 million /18.0 percent), Archer-Daniels-Midland (120/16.6), Central Soya (90/12.5), Ralston-Purina (70/9.7), Esmark (55/7.6), A.E. Staley (55/7.6), Anderson Clayton (40/5.5), Allied Mills (35/4.8), Others (127/17.6). Total bushels crushed is 722 million.

Year Total Crush Percentage crushed by 4 largest companies

1954-55 241.4 million bu 41%  
1963-64 436.8 million bu 50%  
1972-73 721.9 million bu 56%.

624. ADM–Archer Daniels Midland Company. 1973. The possibilities are infinite (Ad). *Soybean Digest*. Dec. p. 2.

• **Summary:** A full-page black-and-white ad. An illustration shows the cratered moon in the foreground with the earth rising behind it.

“The simple soybean. People never thought of it as much more than animal feed—until ADM research perfected TVP® textured vegetable protein.

“TVP® can virtually duplicate the taste, texture, appearance and nutritional values of ingredients now being used at a fraction of the cost. Amazingly versatile, low-cost TVP® is hard at work cutting costs while maintaining quality in everything from catfish stew to beef chop suey.

“Depend on ADM, over 30 years the leaders in soy protein research to continue the exploration of the soybean’s potential. After all—the possibilities are infinite. The originators of textured vegetable protein.” Address: Decatur,

Illinois. Phone: 28541.

625. **Product Name:** Arkady T.V.P. Textured Vegetable Protein (Textured Soy Flour) [TVP Mince 120, Mince 240, and Chunk 10].

**Manufacturer’s Name:** British Arkady Co. Ltd.

**Manufacturer’s Address:** Old Trafford, Manchester, M16 0NJ, England. Phone: 061-872-7161.

**Date of Introduction:** 1973.

**Nutrition:** Per 100 gm.: Protein 51.5 gm, fat 1.0 gm, moisture 6.5 gm, ash 6.0 gm, crude fibre 3.0%, total carbohydrate 32.0 gm, dietary fibre 19.0 gm, calories 250.

**New Product–Documentation:** Letter from W. Pringle of British Arkady. 1990. May 30. “British Arkady began to sell T.V.P. in 1965, but we did not produce on this site until 1973. The product we sold was ADM’s, and we were their agent in the UK.”

Manufacturer’s brochure. 1989? T.V.P. Textured Vegetable Protein: Quality, Nutrition, Economy. 4 p. Discusses: How the product is made into chunks, strips, granules, and mince. Applications: Meat products, catering, vegetarian dishes. Methods of use. Nutritional analysis. Packaging (in 5 kg and 25 kg multi-ply paper sacks) and storage.

Interview with Peter Roberts, founder of Direct Foods Ltd. 1990. Dec. 12. British Arkady had tried to sell their Arkady TVP to the retail trade through the Cash and Carry chain but had failed—at considerable expense to Arkady. In 1985 Arkady bought Direct Foods Ltd.

626. Adolphson, Vivian. 1973. Texpro cookbook (textured protein). n.p. 17 p. No index. 22 cm.

• **Summary:** Texpro, made by ADM, would later be known as TVP. Contents: Dedication. The meat that never moved a muscle: Introduction to textured proteins. Nutritional breakdown of Texpro per 100 grams: Bacon flavor, ham flavor, beef flavor, plain. Recipes: Bacon flavor, ham flavor, beef flavor, plain. Texpro meat ratios for school lunch.

The Introduction states that it “has been used for several years now by food processors and institutions such as hospitals, orphanages, and schools. However it has not been readily available to housewives except in the form of imitation bacon bits.” It is sold in three flavors: Bacon, ham, beef, plain, and U-218. Note: Vivian is the wife of L.C. Adolphson, who works for ADM. Address: USA.

627. Salsbury, Barbara G. 1973. Tasty imitations: A practical guide to meat substitutes. Bountiful, Utah: Horizon Publishers. vii + 75 p. No index. 22 cm.

• **Summary:** This is a book of TVP recipes from a Mormon perspective. Contents: Foreword. About the author (autobiographical). Protein and proper nutrition. Textured soy protein: Soybean lore, what is T.S.P., types, availability, and storage. Suggestions for cooking with T.S.P.

Ten chapters of recipes use a different flavor of T.S.P. in each chapter with either “regular grocery items” or “home storage items.” The latter are typically part of a Mormon food storage program. The T.S.P. flavors used are beef, bacon, chicken, ham, and sausage.

Chapter 14, “Legumes or dried beans,” includes recipes for cooked or dry soybeans. Address: Orem, Utah.

628. **Product Name:** Oil Roasted Soynuts.

**Manufacturer’s Name:** British Arkady Co. Ltd.

**Manufacturer’s Address:** Arkady Soya Mills, Old Trafford, Manchester, M16 0NJ, England. Phone: 061-872-7161.

**Date of Introduction:** 1973?

**How Stored:** Shelf stable.

**New Product–Documentation:** Peter Fitch. 1979. *Journal of the American Oil Chemists’ Society* 56(3):304-05. March. “Vegetable proteins in snacks.”

Shurtleff. 1981. Makers of Soynuts.

Letter from W. Pringle. 1990. May 30. “British Arkady had a patent on the production of a type of soya nuts, dating back to the early 1970s. The product was sold through various health food outlets. The most popular brand was “Noots.” It disappeared from the market about 5 years ago.”

629. American Soybean Assoc. ed. 1974. Proceedings: World Soy Protein Conference. *J. of the American Oil Chemists’ Society* 51(1):47A-216A. Jan. Held 11-14 Nov. 1973 in Munich, Germany. 28 cm. [566 ref]

• **Summary:** See next page. Contents: Session I: World protein markets. Session II: Soy protein products, their production, and properties. Session III: Legal and regulatory aspects of soy utilization in foods. Session IV: Utilization of soy proteins in foods. Session V: Utilization of soy protein in foods. Session VI: Nutritional aspects of soy protein foods. Session VII: Future developments and prospects. Round-table papers. Registration list (directory of participants). Directory of exhibitors and press.

Berwin Tilson, president of the American Soybean Assoc., notes in the introduction (inside front cover): In Oct. 1972 “It was felt that the time was right to gather together top representatives from all areas affecting the soy foods industry... 1,100 representatives from 47 countries actually attended.” This was a pioneering and very important conference. It was opened by the U.S. Secretary of Agriculture Earl L. Butz, and senator Hubert Humphrey delivered a memorable, inspirational address. Many distinguished scientists and politicians also presented papers.

Exhibitors (inside back cover): Purina Protein Europe (Brussels, Belgium). Archer Daniels Brussels S.A. (Belgium). Cargill Inc. (Minneapolis, Minnesota). McKee CTIP (Rome, Italy). Central Soya International Inc.–Chemurgy Division (Brussels, Belgium), Alfa Laval AB (Tumba, Sweden; soymilk equipment). Staley Europe

(Amsterdam, Holland). A/S N. Foss Electric (Hilleroed, Denmark). Westfalia Separator AG (Oelde, West Germany). A/S Nirg Atomizer (Soeborg/Copenhagen, Denmark). Nabisco Inc.–Protein Foods Div. (Fairlawn, New Jersey). Miles GmbH (Frankfurt am Main, Germany). Lucas Meyer und Edelsoja GmbH (Hamburg, Germany). General Mills Inc. (Minneapolis, Minnesota). Address: Hudson, Iowa.

630. Deneck, Guy. 1974. Use of soy flours in bakery products. *J. of the American Oil Chemists’ Society* 51(1):185A-86A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973.

• **Summary:** Contents: Introduction. Enzyme active and inactive soy flours. Address: Societe Industrielle des Oleagineux (SIO), Paris, France.

631. Horan, Frank E. 1974. Soy protein products and their production. *J. of the American Oil Chemists’ Society* 51(1):67A-73A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973. [12 ref]

• **Summary:** Contents: Abstract. Introduction. History of the soybean in the U.S. Economic impact. Soybean protein. Textured soy protein. References.

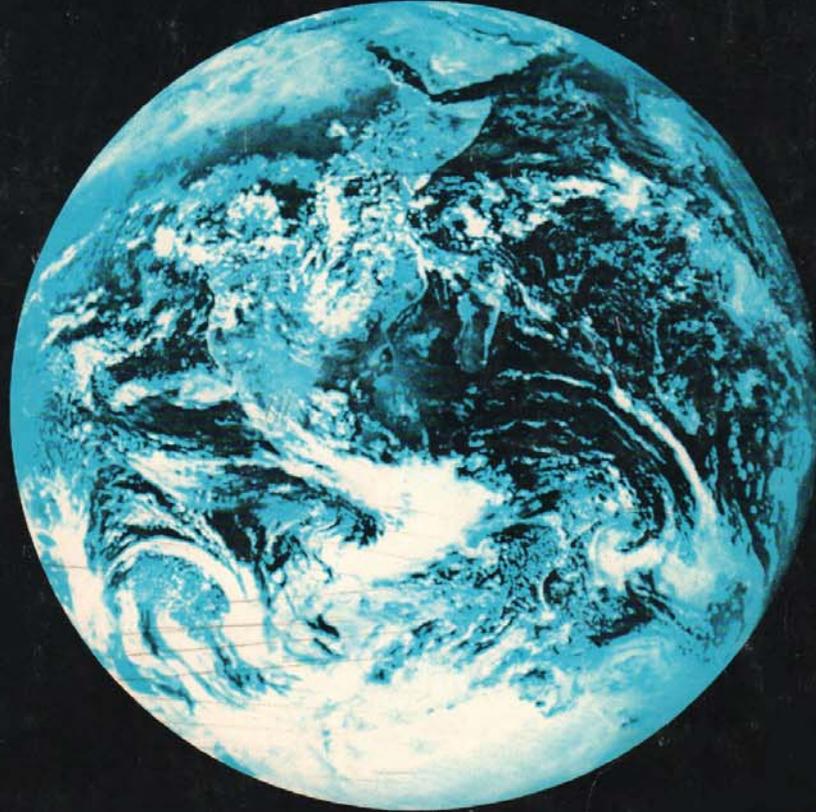
Table XII states that U.S. producers of edible soy protein products are: ADM, Cargill, Central Soya, Far-Mar-Co, General Mills, Griffith Labs, Lauhoff Grain Co., Miles Labs (Worthington), National Protein, A.E. Staley, Swift & Co. All make textured soy protein products except National Protein (which makes only grits and flours). Central Soya, Ralston Purina, and Staley make soy protein isolates. Central Soya, Far-Mar-Co, Griffith Labs, and Swift & Co. make soy protein concentrates. Address: Archer Daniels Midland Co., Decatur, Illinois.

632. McCloud, J.T. 1974. Soy protein in school feeding programs. *J. of the American Oil Chemists’ Society* 51(1):141A-142A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973.

• **Summary:** Contents: Abstract. Introduction. National school lunch program. Memphis city schools. Astrofood. Preportioned meat entrees. Textured vegetable protein.

When the U.S. Congress passed the National School Lunch Act in 1946, its declared objective was “to safeguard the health and well-being of the nation’s children and to encourage the domestic consumption of nutritious agricultural commodities and other food.” Since that time the National School Lunch Program has grown steadily. The Memphis City School System offers food service to 118,000 students but has only \$0.18 budgeted to spend for each meal. Last year the system served over 13,200,000 Type A lunches. Meanwhile the price of ground beef has skyrocketed from \$0.56/lb in Sept. 1969, to \$0.59/lb in Sept. 1970, to \$0.69/lb in Sept. 1972, to \$0.15/lb in Sept. 1973. At the same time the fat content has increased from 22% in 1969-72

# Proceedings



## World Soy Protein Conference

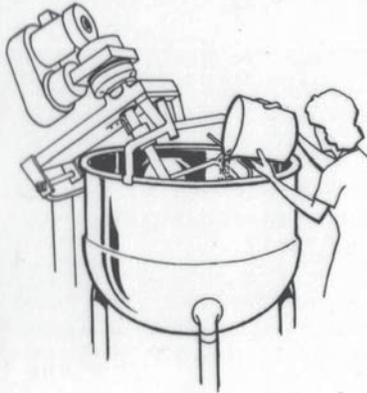
Munich, Germany

November 11-14, 1973

# AMERICAN SOYBEAN ASSOCIATION

### 3 STEP PROCEDURE FOR MIXING TVP® WITH GROUND MEAT

#### STEP 1



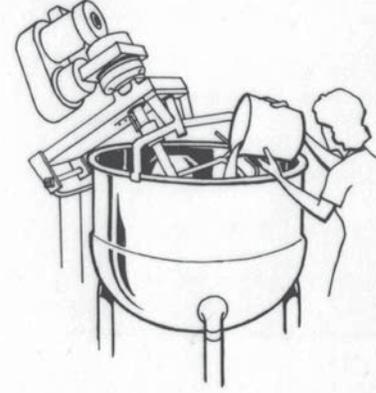
Combine ground meat and dry TVP® in mixer.

#### STEP 2



Mix for 30 seconds on low speed.

#### STEP 3



Add beef stock or water and allow to rehydrate for 5 minutes. Use in recipes as you would ground beef.

to 39% in Sept. 1973. In Feb. 1971 the USDA permitted TVP to be used in school lunches but only in a 30% or less hydrated ratio. This permits schools to mix 1 part TVP and 2 parts water with 7 parts ground beef or pork. Dry TVP costs \$0.383/lb in 30 lb cartons; rehydrated, it costs only \$0.128. Theoretically this school system could save over \$100,000 a year by using TVP with its ground beef products.

Note: This is the earliest document seen (Dec. 2015) describing the use of textured soy proteins in the National School Lunch Program. Address: Board of Education, Memphis, Tennessee.

633. Pringle, William. 1974. Full-fat soy flour. *J. of the American Oil Chemists' Society* 51(1):74A-76A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973.

• **Summary:** Contents: Abstract. Introduction. Production. Enzyme active soy flour. Heat processed full-fat soy flour. Uses. Address: The British Arkady Co. Ltd., Arkady Soya Mills, Old Trafford, Manchester M16 0NJ, England.

634. Wolf, W.J. 1974. Re: Visit by Akiva Pour-El and Peter Fitch. Letter to OC Files, Feb. 20. 1 p. Handwritten.

• **Summary:** "Nutrisoy 220 is made by steaming [soy] beans

at 2 lbs. pressure for 45 minutes, drying, dehulling and grinding to a flour. Process was developed this way because it was the easiest way to carry out cooking.

"Fitch is with The British Arkady Co., Ltd., a subsidiary of ADM."

Attached are 15 thick, glossy cards, each 5 by 8 inches, containing basic information about TVP and recipes. Across the bottom of each card is written, after the blue ADM logo:

"Archer Daniels Midland Company, Decatur, Illinois 62625

"TVP® The Original Textured Vegetable Protein "A Patented Product / U.S. Patent Number 3,488,770.

Card 1 contains 3 line drawings showing the "3 Step Procedure for Mixing TVP® with Ground Meat." The rest of the cards are bulk recipes. Address: Oilseed Crops Laboratory, USDA, NCAUR, Peoria, Illinois.

635. Gooch Foods, Inc. 1974. A new way to trim your meat bill. Red Skillet TVP Dinners (Ad). *Journal Star (Peoria, Illinois)*. Feb. 27.

• **Summary:** Note: Gooch Foods is owned by ADM, maker of TVP brand textured vegetable protein. Address: Lincoln, Nebraska.

636. Jewel Food Stores. 1974. Janie reports: How to use soy protein products! (Ad). *Chicago Tribune*. Feb. 28. p. S\_A23.  
 • **Summary:** Jane Armstrong, Jewel's home economist, begins: "In a recent column I discussed what soy protein foods are and why they are important. This week I'd like to tell you how to prepare and use them."

"There are two primary uses for textured vegetable protein: as extenders for ground meat and analogs, used as alternatives for meat, fish or poultry protein." "TVP products" include "Burger Plus, Proteinettes, Williamson, and Red Skillet Dinners."

"Meat alternatives are available in frozen forms (Morningstar Farms breakfast foods and Freezer Queen skillet dinners for example), dehydrated, and fresh forms."

You may be surprised to learn that "One acre of land produces 500 pounds of soybeans, but only 58 pounds of beef! So, you can see what future implications are with TVP... Quite a few TVP products are now available at Jewel, so why not try one this week?"

A portrait photo shows Jane Armstrong. Address: 1955 North Ave., Melrose Park, Illinois.

637. Burket, R.E. 1974. Blending animal and vegetable proteins for today's market. *Soybean Digest*. Feb. p. 16.

• **Summary:** "R.E. Burket, president, Protein Specialty Div., Archer Daniels Midland Co., discusses the use of soy protein as a food extender and additive rather than as a substitute for meat products."

"All of this talk about soy proteins, and particularly textured soy proteins, replacing meat has stirred up great interest within the livestock industry in the U.S. and frankly speaking, this interest is sometimes unnecessarily hostile."

"The discussion should center around soy proteins as meat extenders, not as 'meat substitutes.' With the exception of such items as imitation bacon bits, dry convenience dinners and the few products being sold into the vegetarian or health food fields, the bulk of the edible soy proteins produced today are used to extend meat in processed meat such as patties, loaves, sausages, chilis, etc."

"This is clearly pointed out in a marketing research report, Synthetics and Substitutes for Agricultural Products—Projections for 1980. This report, No. 947, was prepared by the Economic Research Service division of the U.S. Department of Agriculture. It was stated in this report that the market for the analog product, that is to say the one where meat is completely replaced with the substitution of a protein product, would be a minor factor even by 1980. This report did state that the use of substitute proteins in combination with meat could be as large as between 4% to 8% of the red meat production. The only fault with this report is the use of the word 'substitute.' Those of us in the industry producing soy protein products refer to our proteins as being an alternate protein or a complimentary protein to meat."

"It should also be noted that this report was careful to state that the demand for red meat would still be so great that even with the use of alternate proteins in the magnitude projected, there would still be a need to increase the production of red meat by at least 10% to meet the projected 1980 demand. What do these seemingly conflicting projections mean? Simply, that there is no serious conflict between meat and soy proteins. There is an increasing need for both."

"As we study what creates this need, we will find several factors favorable to the use of soy protein as complimentary proteins in meat products."

"The first factor is that of function. The various soy protein products being used today in combination with meat offer, in addition to their protein contribution, such things as structural integrity, binding, emulsifying and fat absorption qualities."

"Such functional properties are necessary in order to fully utilize the various cuts of the beef carcass. As an example, you are well aware that the average 1,200 lb. steer has a dressout weight of approximately 60% and provides around 720 lbs. of meat products. Of these 720 lbs., approximately 75%, or 540 lbs., are in the form of chuck, rib, loin or round."

"But approximately 25%, or 180 lbs., are in the form of such cuts as brisket, foreshank, flank, short plates and organ meats and/or suet. Quite often, in order to utilize this 25% of the carcass that has either a higher fat level than accepted by the public or a lower binding ability than necessary for incorporation into processed meat products, it is necessary to incorporate nonmeat items along with these cuts to make acceptable meat food products. Based on technology known today there is no better compliment to these meat cuts than the high protein, low fat soy protein products which are available in large quantities at reasonable prices."

"The second factor favorable to the incorporation of soy protein products into processed meat products is the economics of these proteins. The four general categories of soy proteins used in the meat industry today are soy grits, textured soy proteins, soy protein concentrates and isolated soy proteins. These products range in price from 15¢/lb for the soy grits to approximately 30¢ for the textured soy proteins and concentrates and up to approximately 60¢ for the soy isolates. When hydrated with water sufficient to bring these protein products back to the protein/moisture ratio which exists in meat, the per pound price for these products then ranges in the area from 6¢/lb-12¢/lb. Compared to meat at approximately \$1.00/lb, and please remember we have hydrated these soy proteins to a comparable protein/moisture ratio, you will see that the soy proteins offer great savings in addition to their functional properties."

"The third factor that must be present to create demand for the soy proteins is consumer acceptance. There has been much publicity regarding the success supermarkets received

in marketing the beef patty mix products. These mixes were generally composed of 75% meat and 25% hydrated textured vegetable protein. The marketing of such products to the consumer began in March 1973 in supermarkets in the Minneapolis, Minnesota area and has quickly spread to a nationwide basis. These products were clearly labeled as to their contents and carefully advertised accordingly. The consumer showed a willingness to try such products and seems to be more than satisfied for repeat sales to show that she is willing to purchase beef patty mixes at the savings offered to her over the all-meat product.

“It should be pointed out that at the same time these beef patty mixes have been increasing in sales, the consumption of meat products has continued to rise and this therefore bears out the contention of the U.S. Department of Agriculture report that there is sufficient demand for both proteins, each independently and collectively. It is obvious the American consumer has become used to feeding her family meat and would welcome the chance to continue to supply meat and extended meat products if they meet her required standards in regard to quality and price. Certainly, the use of soy proteins in combination with meat will help to keep the processed meat products in the price range the consumer can afford.

“Study 947 referred to earlier shows that just under 30% of the red meat consumed in the U.S. was consumed in the form of ground meat and/or comminuted products.

“You can see from what has been given that there is a place in the market for soy proteins and that in most applications they do compliment meat proteins. Properly utilized and labeled, these soy proteins offer the consumer a viable alternate, and it has been shown that the consumer welcomes such a choice.” Address: President, Protein Specialty Div., Archer Daniels Midland Co.

638. *Changing Times (The Kiplinger Magazine)*. 1974. Now there’s “meatless meat.” It cuts your food costs and may be healthier too. 28(2):53-54. Feb.

• **Summary:** Discusses textured vegetable proteins. “With the exception of the imitation bacon bits, such as Bac-Os from General Mills and Stripples from Worthington Foods, the textured vegetable proteins have not been available on most supermarket shelves. Now you can expect to see more of them...

“The big breakthrough for textured vegetable proteins came in February 1971 when the U.S. Department of Agriculture approved their use in the national school lunch program. Soy proteins, fortified with vitamins and minerals, can replace up to 30% of the meat in patties, stews, poultry and fish dishes served for school lunches...

When meat prices soared, soy processing companies began to market a new class of nutritious, dehydrated meat extenders in two- to three-ounce “envelopes,” similar to dry soup. They are often sold near the meat counter or with

“other semiprepared dinner mixes, such as Hamburger Helper. The packets may contain natural soy crumbles or caramel-colored granules that blend well with beef. They also come unflavored, so you can add your own seasonings, or preseasoned...”

Note: This is the earliest English-language document seen (Aug. 2011) that uses the term “soy crumbles,” probably to refer to small chunks of textured soy flour.

“Last summer, a midwestern food chain took a full-page newspaper ad to inform shoppers of the advantages of TVP, the trademark for Archer Daniels Midland’s product...

“Late last year Cargill, Inc., a large grain company, entered the consumer market in the Southwest with Burger-Plus, a lightly seasoned textured soy protein. It test-marketed three-ounce packages at two for 49 cents. Each package of mix and water stretched a pound of ground beef to a pound and a half. Other recent market entries include Grand Union’s seasoned and unseasoned ‘meat’ mixes, General Mills’s Burger Builder and A.E. Staley’s Burger Bonus. More firms plan to package soy products.”

639. Hunter, Beatrice Trum. 1974. Textured vegetable proteins: Satisfactory meat substitutes. *Consumers’ Research Magazine* 57(2):32-35. Feb. [2 ref]

• **Summary:** The author concludes that “Soy proteins are not an adequate substitute for meat, poultry, and fish.” This article focuses mostly on TVP brand textured soy protein, which has been widely promoted. TVP products are inferior in nutrient quality to traditional animal protein sources. They are indigestible for some individuals and produce flatulence. Blended with ground beef at levels up to 25%, the TVP can leave an aftertaste. “It was estimated that by the summer of 1973 one out of every four food stores across the country was selling such blends. Such sales have often outstripped sales of pure ground beef... Vegetable proteins are now said to be selling at a total rate of \$83 million annually, but the industry anticipates sales to reach \$1,500 million by the end of the present decade.

“Clearly, TVP products do not represent a move toward the rational use of plant protein in a world headed toward a serious shortage of animal protein. Rather, these products must be viewed as a new triumph of food technologists and processors who have succeeded in persuading many individuals to substitute such ‘reasonable facsimiles’ for real, natural foods.”

640. Burket, R.E. 1974. New uses of soybean products. *Tennessee Valley Authority, Bulletin* Y-69. p. 148-51. March. Soybean Production, Marketing and Use. Muscle Shoals, AL: TVA.

• **Summary:** Contents: Introduction. Add a quality factor. Functional advantages. Market acceptance. New uses for oil. Address: President, ADM Protein Specialty Div., Decatur, Illinois.

641. *Food Processing (Chicago)*. 1974. Mergers, acquisitions: Archer-Daniels Midland Co. April. p. 8.  
 • **Summary:** ... of Decatur, Illinois, agreed in principle to purchase Oliefabriek de Ploeg, B.V., of Rotterdam, Netherlands, for an undisclosed amount. ADM plants to expand the plant's capacity to 1,500 tons/day and to construct plants for making vegetable protein and soy flour on the adjacent property.

642. *Soybean Digest*. 1974. Processing plant in Australia. April. p. 34.  
 • **Summary:** "Archer Daniels Midland Co. of Illinois is building a soybean processing plant in Australia in conjunction with the Australian company, Provincial Traders. The first of its kind in Australia, the plant, slated to begin production in April 1974 is sited at Toowoomba in Queensland. The district around Toowoomba, known as the Darling Downs, produces the bulk of Australia's soybean crop. The new plant will initially handle 250 tons of seed per day, and will step up to 750 tons/day when more soybeans become available."

643. Zell, Fran. 1974. Soy moves in the market: New on the shelves. *Chicago Tribune*. May 2. p. N\_A18 or S\_A18 or W\_A18.  
 • **Summary:** The products mentioned below have been taste-tested by members of the Tribune food staff. (1) Williams Fortified Textured Vegetable Protein with Seasoning is a hamburger / ground beef extender. Seasoning flavors include hamburger, meat loaf, spaghetti, and taco. Price: \$0.39 per 4-oz. package.

(2) Park Burger Plus, formulated by Jewel Food Stores and introduced last year, is also a hamburger extender. The two varieties are seasoned (recommended for hamburger patties) and unseasoned (recommended for casseroles and other recipes). A 2-oz. packet extends ground beef 37%.

(3) Red Skillet Brand TVP dinners contain no meat at all. The textured vegetable protein (made from soybeans) comes in the form of beef or ham-like chunks. The dinners can be mixed with other dishes or sauces (such as Macaroni & Cheese Sauce).

(4) Soy Ahoy roasted salted soy nuts, made by the Malt-o-Meal Company, have been available under the Soy Town label in health food stores for several years. The two flavors are regular (the best seller of the two) and dry roasted. Now they are being test marketed in regular grocery stores.

A photo showing burgers being weighed on a beam balance bears the caption: "Textured vegetable protein gives you twice as many burgers."

644. Julien, Bruno. 1974. France's soybean imports up with growth of feed industry. *Foreign Agriculture (USDA Foreign Agricultural Service)*. June 17. p. 12-13.

• **Summary:** Reflecting the influence of the compound feed industry on protein sources, soybean meal accounted for over half of France's 2.6-million-ton protein source supply during 1970-72, followed by peanuts. The National Institute for Agronomic Research (INRA) recently confirmed the growth of protein use. For a long time there was only one soybean crusher in Northern France, the S.I.O. company [Societe Industrielle des Oléagineux], which crushed about 60,000 tons a year. Since 1970, however, Soya France has been crushing imported soybeans in a plant on the Brittany Coast. During 1974, the plant is expected to reach its full production capacity of 400,000 tons. The French Government recently authorized the construction of two new plants in the western part of France in Brest. Address: Office of U.S. Agricultural Attaché, Paris.

645. *Journal of Commerce (London)*. 1974. Netherlands to build 3 new soya factories. July 9.

• **Summary:** According to the Algemene Bank Netherlands, the factories for processing soybeans for direct human consumption will be constructed by Unilever, Archer Daniels Midland Co. (USA), and Cargill Soya Industry B.V. (a subsidiary of the American company). Two factories will be near Rotterdam and the third near Amsterdam.

Cargill Soya B.V. already crushes about 1 million tons of soybeans per year to make oil and meal; the company's new factory will make at least 15,000 tons of textured soya protein and 50,000 tons of soya flour. The Unilever plant will make about 30,000 tons/year of soy protein concentrate. ADM has recently acquired the Dutch firm Oliefabriek De Ploeg which processes about 85,000 tons of soybeans a year; this plant will be expanded.

The Netherlands is centrally located in relation to EEC product markets and Rotterdam is the center of European oilseed trading and crushing.

646. Edwards, Larry. 1974. Soy extenders remain 'food of the future' as category sales dwindle. *Advertising Age*. July 29. p. 3, 46.

• **Summary:** Sales of textured soy protein products have dropped along with the price of ground beef. "The category, which sources say peaked at about \$4,000,000, now reportedly has dipped to about \$3,000,000, with most of the products gathering dust on retail shelves."

"Last year, in response to consumer disenchantment with skyrocketing meat prices, a flood of branded consumer meat extender entries hit the market. To date only Plusmeat from Central Soya's J. H. Filbert Co. has moved into broad distribution. Among other extender entries in limited test markets: Burger Bonus and Tuna bonus from A. E. Staley's consumer products group; Betty Crocker's Burger Builder from General Mills; Armour-Dial's Burger Savor; Ac'cent ground beef extender from Ac'cent International, and Progresso Foods' Extend'n Flavor."

“Miles’ Worthington Foods unit, forerunner to its development of Morningstar Farms, already has over a 50% share of an estimated \$12,000,000 vegetable protein market for religious groups such as Seventh Day Adventists.

“According to researchers at Frost & Sullivan, New York, market research company, the total vegetable protein market jumped to about \$115,000,000 during 1973, but has since leveled off. Its size was put at \$82,000,000 for 1972, and the company predicts it will climb to \$1,500 million dollars by 1980.”

Miles Laboratories has stayed away from positioning their Morningstar Farms products as “meat substitutes.” Other products that continue to do well are Gooch Foods’ TVP Red Skillet Dinners and General Mills; Bac\*O’s, one of the original consumer vegetable protein products.

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647. *Windsor Star (Essex County, Ontario, Canada)*. 1974. Hopes for soybean plant surface. Aug. 17. p. 7.

• **Summary:** “Essex—The first signs of attempts to woo Maple Leaf Mills to locate a \$15 million soybean crushing plant in the county emerged Tuesday night. At their regular monthly meeting, the directors of the Essex County Federation of Agriculture [whose president is Peter Epp] decided to encourage the firm to move to the Windsor area. About a month ago, Maple Leaf Mills of Toronto announced it was interested in building a multi-million dollar crushing plant along the waterfront in Sarnia. The company, which is gradually phasing out its Toronto operation because the Ontario government is expropriating the land, owns elevators in Sarnia.” Railways, highways, and deep water ports are available in Sarnia. But there is opposition to the proposal because the St. Clair Parkway Commission has plans for expanding a park system along the shoreline. Note: Maple Leaf Mills later decided against buying the Sarnia site.

648. Stroud, D.H. 1974. The many faces of engineered protein products. Report to the National Livestock and Meat Board. Aug. \*

• **Summary:** The abbreviation “TVP,” which stands for “textured vegetable protein,” should be avoided as a generic term because it is a registered brand trademark of the Archer Daniels Midland Co.

649. Archer Daniels Midland Co. 1974. Fiscal 1974 annual report. 4666 Faries Parkway, Decatur, Illinois 62525.

• **Summary:** On the page titled “Major projects” we read (far right column): “Building an edible soybean concentrate plant in Decatur, Illinois.” Address: Decatur, Illinois.

650. Atkinson, William Thomas. Assignor to Archer Daniels Midland Company (Decatur, Illinois). 1974. Process for extruding oil seed protein material. *U.S. Patent* 3,845,228. Oct. 29. 3 p. Application filed 27 March 1973. [3 ref]

• **Summary:** “Process for preparing textured oil seed protein food products by extruding an oil seed protein material mixed with a small portion of lecithin to provide improved throughput in the extruder as well as a denser and tougher product.”

Soy or corn lecithin increases the capacity of an extruder for soy texturizing by up to 50%. Address: Decatur, Illinois.

651. Adolphson, L.C.; Horan, F.E. 1974. Textured vegetable protein products as meat extenders. *Cereal Science Today* 19(10):441-44, 446. Oct.

• **Summary:** “During the 1971-72 school year, about 23 million pounds of textured soy protein (hydrated) were used; in 1972-73 the amount was doubled; and during the past school year an estimate is that at least 50 million pounds (hydrated) were employed...”

“In order for the commercial manufacturers to have a common goal in the development of novel protein systems, such as textured vegetable protein products, a number of industrial companies have banded together to form the Food Protein Council (Food Protein Council, Suite 1150, 1730 Pennsylvania Ave., N.W., Washington, D.C. 20006. George M. Perrin, Executive Secretary).

“The council consists of the following regular members: Archer Daniels Midland Co.; Cargill, Inc.; Central Soya Co., Inc.; Far-Mar-Co, Inc.; General Mills, Inc.; Grain Processing Corp.; Griffith Laboratories; Lauhoff Grain Co.; Miles Laboratories, Inc.; National Protein Corp.; Procter & Gamble Co.; Ralston Purina Co.; A.E. Staley Manufacturing Co.; and Swift Edible Oil Co.”

A photo shows the two authors, with a brief biography of each. Address: Archer Daniels Midland Co., Decatur, Illinois.

652. Direct Foods Ltd. 1974. Export price list—1 October 1974. Petersfield, Hants [Hampshire], England. 1 p. 33 cm.

• **Summary:** Printed with black ink on legal-size white paper it gives details on two product lines: Protoveg and Ranch House Meals. At the top center is a circular yin-yang logo with a naked woman in the top half and a soybean plant with pods in the bottom. To its left is written: “Convenience protein direct from the plant.” Address: Petersfield, Hants [Hampshire], England. Phone: Petersfield 4911 / 2.

653. Stone, David E. 1974. Profile: Francis E. Calvert pioneer of soybean protein. *Food Engineering* 46(10):40, 42.

Oct.

• **Summary:** Francis Earle Calvert was born in 1912 in Cambridge, Massachusetts. He was selected by Henry Ford to be part of a special group attending Ford's Wayside Technical School in Sudbury, Massachusetts. There was no tuition—a Godsend during the Great Depression. Then he attended Ford's Edison Institute at Dearborn, Michigan. Calvert's introduction to the soybean came directly from Ford himself—in the early 1930s. One day the great entrepreneur dropped in lugging a 100-pound sack of soybeans, saying that there must be something valuable in them since Orientals had been using them for 4,000 years. He challenged the young students to find out how to use them.

He and his young co-workers at the Greenfield Village laboratory had developed a destructive distillation process. It decomposed the soybeans using heat in a closed container. Later Calvert helped to design a new solvent extractor for soybean built like an Archimedes screw; it removed soybean oil using a counter-current solvent. Soon Calvert, and colleague Robert Boyer, were making spun protein fibers for upholstery in Ford cars, as well as plastic car parts.

Because soybeans were hard to get, the young men had to grow their own. They planted several thousand acres of soybeans, then had to develop mechanical equipment to harvest them. Now they set out to adapt them to human consumption. In 1936 the lab delivered fortified soymilk to Dearborn families, made a soy sherbet that was sold in the Ford employee cafeteria, and canned green soybeans for use as a vegetable.

Why do soybeans have a bitter taste? Its a survival mechanism.

The Drackett Corporation hired Calvert, and shortly thereafter they purchased the Ford Textile Fiber Division. They put Calvert in charge of basic protein research. In 1949 he was appointed research director at Drackett. In 1962 Calvert joined Ralston Purina Co. in special soy products research. He retired in Aug. 1973. Address: Product Mgr., Food Protein Div., Ralston Purina Co.

654. Henry, Wayne. 1974. Re: Literature on soy grits and flour. Letter to Walter Wolf, Northern Utilization Research Lab., 1815 University, Peoria, Illinois 61601, Dec. 20. 1 p. Typed, with signature on letterhead.

• **Summary:** He encloses a technical bulletin on the company's soy flour and grits. "As of this date, we do not have any printed literature on our soy protein concentrate."

Printed across the bottom of the letterhead: "Far-Mar-Co food operations: (headquarters) Hutchinson, Kansas; Overland Park, Kansas; St. Joseph, Missouri; Shreveport, Louisiana; Seattle, Washington; Los Angeles, California."

Note: Dr. W.J. Wolf states on 17 Oct. 1974, based on information from Bert Miner of the Farmer Cooperative Service, that Far-Mar-Co is producing about 100 tons/day

of defatted edible soy flour and 30 tons/day of soy protein concentrate. However the concentrate plant is now down because of a previous explosion in the alcohol recovery unit. They also have a small pilot plant in Hutchinson, Kansas, making "TVP" [textured soy flour] in unknown amounts. Dr. Henry told Dr. Wolf on 19 Dec. 1974 that they make soy protein concentrates but have not promoted them much. They are using some of it internally and are not yet up to capacity on production. Address: Vice President, Food Operations, Far-Mar-Co, Inc., 960 North Halstead, Hutchinson, Kansas 67501. Phone: 316-663-5711.

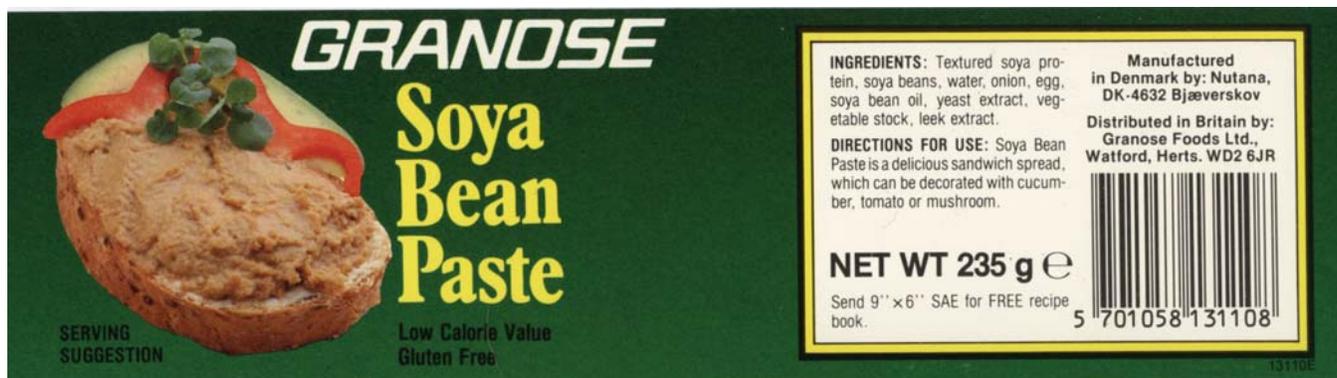
655. Predicasts, Inc. 1974. World manufactured soybean foods. Special Study No. 108. Predicasts, Inc., 200 University Circle Research Center, 11001 Cedar Ave., Cleveland, OH 44106. vi + 93 p. Dec. 24. No index. 28 cm. Research Analyst: Frederick M. Ross.

• **Summary:** Contents: 1. Introduction. 2. Summary. 3. Economics of Soybean Foods: Soybeans, soy flour, meat extenders (based on extruded textured soy flour), synthetic meat (based on spun isolates). 4. Industry structure: General, \$1,000 million food and feed giants (ADM, Cargill, Central Soya, General Mills/Takeda Chemical, Nabisco, Ralston Purina/Fuji Oil, and Esmark [Swift]), other major manufactured soy food companies (Unilever, General Host [New York], Miles Laboratories/Worthington & Kyowa Hakko Kogyo, A.E. Staley Mfg. Co., Stange [Chicago, Illinois], Chambers & Fergus [Humberside, England]), food industry structure. 5. Demand for manufactured soybean products: Demand for meat & substitutes, supply of natural meat, demand for meat substitutes, demand for soy flour. 6. North America: United States, Canada. 7. Latin America: General, Argentina, Brazil, Mexico, Other Latin America (Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay). 8. West Europe: General, France, West Germany, Italy, Spain, United Kingdom, Other West Europe. 9. East Europe: General, Hungary, Poland, USSR, Other East Europe. 10. Africa: General, Egypt, Nigeria, South Africa, Other Africa & Mideast. 11. Asia: General, China, India, Indonesia, Japan, Pakistan, Other Asia. 12. Oceania: Australia, New Zealand, Other Oceania.

Most sections contain numerous tables, mostly on meat and meat substitute consumption, and raw protein consumption, by country. Address: 200 University Circle Research Center, 11001 Cedar Ave., Cleveland, Ohio 44106. Phone: 216-795-3000.

656. Predicasts, Inc. 1974. Unilever (Document part). In: World Manufactured Soybean Foods. Special Study No. 108. 1974. Predicasts, Inc., 200 University Circle Research Center, 11001 Cedar Ave., Cleveland, OH 44106. See p. 12.

• **Summary:** "Unilever, the European manufacturing, chemicals, drugs and food conglomerate with 1973 sales of almost \$11 billion, is the largest firm in the world currently



involved with soy-derived protein foods. Unilever is the European pace setter in soy protein food research. Although proposed joint venture plans with Archer-Daniels-Midland and Cargill have been denied, Unilever is proceeding with its own plans to build a 30,000 ton-per-day soy protein food plant of its own at Zwijndrecht, Netherlands, via its Unimills subsidiary. The firm already maintains soy food research facilities in the Netherlands, the United Kingdom and elsewhere in Europe." Address: Cleveland, Ohio.

657. **Product Name:** Special X Flour.

**Manufacturer's Name:** Archer Daniels Midland Co.

**Manufacturer's Address:** Box 1470, Decatur, Illinois 62525.

**Date of Introduction:** 1974.

**New Product-Documentation:** Horan. 1974. Meat analogs. p. 380.

658. Duda, Zbigniew. 1974. Vegetable protein meat extenders and analogs; with special emphasis on proteins of soybean origin. Rome, Italy: Food and Agriculture Div. of the United Nations. Animal Production and Health Div. vii + 89 p. No index. 27 cm. [214 ref]

• **Summary:** Contents: Author's preface. Acknowledgements. Foreword. Introduction. Raw materials: Soybeans, other raw materials. Definitions: Meat extenders, meat analogues. Protein rich products originating from soybeans: Soy flour and grits, food utilization of soybean flours and grits, soy protein concentrates, soy protein isolates, texturized soy protein. Technological and functional properties of vegetable protein. Market considerations. A random selection of T.V.P. extenders and analogues with their characteristics and uses: Miles Laboratories, Inc., Marschall Division, Elkhart, Indiana, USA, Vegetable protein food products (Temptein TM spun textured vegetable protein, vegetable protein meat analogues, bacon-like flavoured chips, dehydrated ham-like flavoured cubes, R pepperoni-like flavoured links, Pro-lean 45 TM, Maxten textured vegetable protein, Morningstar Farms—breakfast links, patties, slices), Swift food protein, General Mills, Inc.—textured vegetable protein foods, Worthington Foods, Inc.—textured vegetable protein foods, Archer Daniels Midland Co.—textured vegetable

protein products, Purdy Steak Corp.—textured vegetable protein products, A.E. Staley Manufacturing Co.—textured and untextured vegetable protein products (200 series textured vegetable protein products, 400 series), Ralston Purina Company—textured soy protein products, Central Soya International Inc.—soy protein products, Nabisco, Inc. Protein Food Division—textured vegetable protein products, Lucas Meyer—soy protein products. Possible sources of meat substitutes other than soybeans: Protein from beans, from rapeseed, from sunflower seed, from cottonseed, from peanuts, other sources of proteins. General technological considerations. Projected consumption and market penetration. Cost considerations: The scale of production, the degree of processing, the price of raw materials. Conclusions. Selected Bibliography. Appendix I: USA soybean processors and products manufactured. Appendix II: Selected recipes using TVP for type A school lunches. Appendix III: Addresses of some companies making soy protein products. Appendix IV: Soybean utilization chart.

This book is compiled from a British viewpoint and cites many British journal articles, thus making it a nice complement to the American articles and bibliographies on this subject. Its bibliography is excellent. Address: Meat and Milk Service, Animal Production and Health Div., FAO, Rome, Italy.

659. **Product Name:** Granose Soya Bean Pâte (Gluten Free). Later renamed Soya Bean Paste.

**Manufacturer's Name:** Granose Foods Ltd. (Marketer). Made in Denmark by Nutana Helsekost.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1974.

**Ingredients:** Soya beans, onion, egg, textured soya protein, soya oil, yeast, salt, hydrolised vegetable protein, spices, monosodium glutamate.

**Wt/Vol., Packaging, Price:** 205 gm (7 oz) can.

**How Stored:** Shelf stable.

**New Product-Documentation:** Manufacturer's catalog. 1981. Nutana Helsekost. 19 p. Contains a photo of and detailed information about every product. Label. 1980?, undated. 9.5 by 2 inches. Green, black, yellow, and white.



Text only “Granose soya bean pate makes delicious sandwiches with mushrooms, tomato, cucumber, etc.” Labels in Danish, Dutch, and Finnish.

Form filled out and Labels sent by Granose Foods Ltd. 1990. June 13. States that the product, made by Nutana, was introduced in 1974. It is now named Soya Bean Paste. Label. 1990. 9.5 by 2.25 inches. White, yellow, and black on green. Photo of a slice of bread spread with the paste garnished with a slice of tomato, avocado and a sprig of green. “Low calorie value. Gluten free. Ingredients: Textured soya protein, soya beans, water, onion, egg, soya bean oil, yeast extract, vegetable stock, leek extract. Directions for use: Soya Bean Paste is a delicious sandwich spread, which can be decorated with cucumber, tomato or mushroom.”

660. **Product Name:** Soyapro (Canned Texturised Vegetable Protein).

**Manufacturer’s Name:** Granose Foods Ltd. (Marketer-Distributor). Made in Denmark by Nutana.

**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1974.

**Wt/Vol., Packaging, Price:** Can.

**How Stored:** Shelf stable; refrigerate after opening.

**New Product–Documentation:** Clare Bryant. 1974.

*Everyday Vegetarian and Food Reform Cooking*. p. 137. The following is included in a list of meat substitutes. “Soyapro: A tinned [canned] texturised vegetable protein. Many other brands of TVP will appear on the market in the years to come.” Neither the name or address of the maker is included.

661. **Product Name:** Sanitarium Health Foods TVP Textured Vegetable Protein [Smoked Flavour, Roast Flavour Chunky Pieces, Roast Flavour Mince Style, Savoury Flavour, Southern Flavour, and Sweet & Sour Flavour], and Unflavoured T.V.P.

**Manufacturer’s Name:** Sanitarium Health Food Co.

**Manufacturer’s Address:** 148 Fox Valley Rd., Wahroonga, Sydney 2076, NSW, Australia.

**Date of Introduction:** 1974.

**Ingredients:** Savoury: Soy flour, salt, dried yeast, vegetable oil, vegetable flavouring syrup.

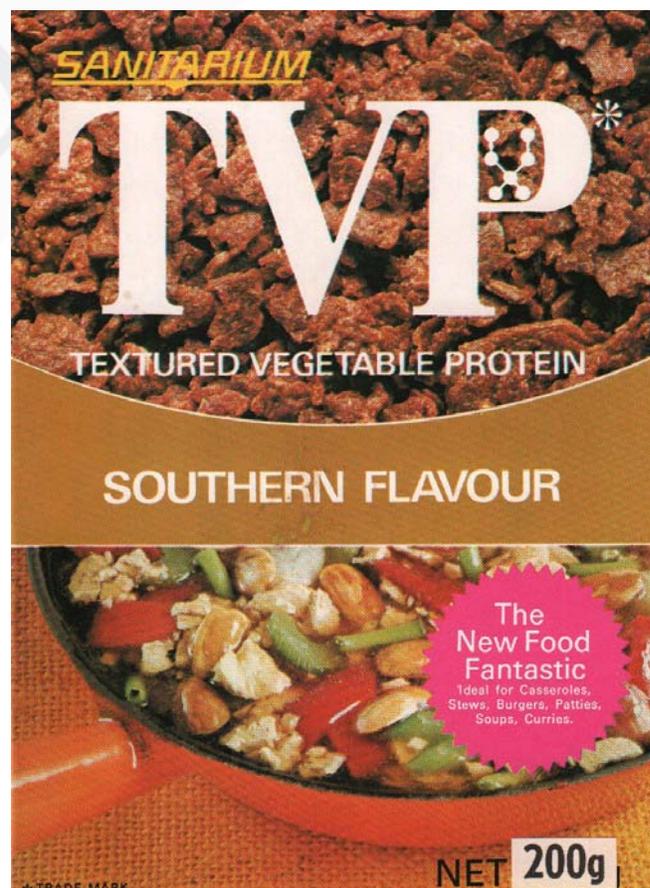
**Wt/Vol., Packaging, Price:** 300 gm box. Later canned.

**How Stored:** Shelf stable.

**Nutrition:** Savoury: Protein 35.0%, moisture 6.5%, ash 11.0%, fibre 2.5%, carbohydrate 24.0%, fat 21.0%.

**New Product–Documentation:** Label. 1980, undated.

Box. 13 by 9 inches. Full color. Photo shows TVP as is and in a skillet with rice. “The New Food Fantastic. Ideal for Casseroles, Stews, Burgers, Patties, Soups, Curries.” Letter from Sanitarium Health Food Co. 1981. Leaflet. 1981? 6 panels. Red and brown. “The new food fantastic. Sanitarium TVP Textured Vegetable Protein... From Sanitarium... The people who believe food should not only taste good, it should be good for you.” With 5 recipes. Leaflet. 1981. Full color, yellow background. “Sanitarium presents 30 exciting recipes with a difference from around the world... The difference is TVP. Textured Vegetable Protein.” Soya Bluebook. 1982. p. 61. “Canned vegetable protein foods and textured vegetable protein.” 1985. p. 86.



Letter from Sanitarium Health Food Co. 1990. June 25. Gives product introduction date as 1974.

662. Archer Daniels Midland Co. 1974. The growing challenge: Protein cereal products for world needs (Portfolio). Decatur, Illinois. 28 p.

• **Summary:** The jacket of this portfolio has color illustrations on the front, and a two-page table with 3 columns containing information about ADM's operations and plants, products, and markets. The 24-page booklet inside has a girl's face looking out through a globe-shaped hole; below that is a huge field of grain harvested by five combines.

Contents: Introduction. World population and world food supply. The protein gap. Protein calorie malnutrition—A global struggle. Early detection of PCM can save lives. Treatment of protein calorie malnutrition. Solving the protein calorie malnutrition problem. Protein quantity and protein quality are essential to good health. Wheat and soybean blends provide low cost high quality protein sources. The situation in the United States. Key nutrients. The macronutrients. Address: Box 1470, Decatur, Illinois 62525.

663. Archer-Daniels-Midland Co. 1974. In: Moody's Industrial Manual. See p. 100.

• **Summary:** Contains an excellent, detailed history of each of the company's acquisitions and sales. "Incorporated in Delaware, May 2, 1923 to acquire (1) the linseed oil plants at Minneapolis [Minnesota], St. Paul, Toledo [Ohio], Chicago, Buffalo and Edgewater (N.J.) of Archer-Daniels Linseed Co., formed in 1902 as Daniels Linseed Co. and the name changed several years later to Archer-Daniels Linseed Co. (2) the entire capital stock of The Toledo Seed & Oil Co. of Toledo, manufacturers of linseed and castor oils, and (3) the entire capital stock of The Dellwood Elevator Co., operating a 1,500,000 bushel elevator adjacent to the linseed oil plant at Buffalo.

"On July 1, 1923 acquired the properties of Midland Linseed Products Co. for \$3,175,000. This company formed in 1898 operated linseed oil mills adjoining those of Archer-Daniels Linseed Co. at Minneapolis, Toledo and Edgewater.

"On Feb. 1, 1928 acquired the entire property and assets of William O. Goodrich Co. of Milwaukee [Wisconsin], manufacturers of highly specialized and refined qualities of linseed oil."

In 1968 ADM acquired Ross & Rowe, Inc. for 6,000 shares. In Jan. 1973 [actually Jan. 15] ADM acquired 50% of British Arkady Holdings Ltd. which subsequently [actually simultaneously] acquired [its subsidiary] British Arkady Co. Ltd.

"In Jan. 1974, Co. purchased a soybean processing plant and edible oil refinery at Araraquara, State of Sao Paulo, Brazil. The purchase was from Industrias Reunidas Marilu S/A of Rio de Janeiro. Co. was to begin a major construction

and renovation program immediately to install facilities to produce textured vegetable protein, a line of full fat and defatted soy flours and specialty protein products."

Note: On 31 Dec. 1987 ADM acquired the rest of Arkady Holdings Ltd. so that it now owned 100%. Both dates (15 Jan. 1973 and 31 Dec. 1987) were confirmed by Dick Burket of ADM on 25 April 1991. Arkady Holdings Ltd. is the important company because it is the parent company for all of the different Arkady companies such as the Haldane Group, etc.

664. Briscoe, Alan K. 1974. Soybean granule recipes. Bountiful, Utah: Horizon Publishers. 24 p. 22 cm. Pamphlet No. 2 in The Storage Bin Series.

• **Summary:** Contents: Introduction. Using beef soybean granules. Using ham flavored granules. Using bacon flavored granules. Using chicken flavored granules. Using unflavored granules.

In this TVP recipe booklet, the author calls TVP "soybean granules." Address: Utah.

665. Bryant, Clare. 1974. Everyday vegetarian and food reform cooking. Shaldon, England: Keith Reid Ltd. 143 p. Illust. by Graham Searle. 23 cm. Recipe index.

• **Summary:** Soy-related recipes include: Miso soup (p. 19). Soy bean cake (made with whole soy beans, p. 45). Miso wakame soup (p. 90).

Page 137 lists "Meat Substitutes" including "Protoveg: Texturised vegetable protein made to look and taste like meat in several flavours." "Soyapro: A tinned [canned] texturised vegetable protein. Many other brands of TVP will appear on the market in the years to come."

666. Horan, F.E. 1974. Meat analogs. In: A.M. Altschul, ed. 1974. New Protein Foods. Vol. 1A. Technology. New York: Academic Press. 511 p. See p. 366-413. Chap. 8. [92 ref]

• **Summary:** Contents: Introduction: What is meat? What is a meat analog? Historical development of meat analogs: Comminuted meats [meat emulsions such as frankfurters, sausages, bologna, and meat loaves] and ground meat types [such as hamburger], gel types, spun-fiber types, other fibrous types. Commercial developments: Protein raw materials, spun-fiber types, thermoplastic-extruded types. Nutritional aspects: Soy flours, soy protein concentrate, and isolated soy protein, spun-fiber types, thermoplastic-extruded types. Marketing aspects: In combination with meat, as a complete replacement of meat, marketing considerations, marketing accomplishments. Considerations for the future: Forecasting the growth of meat analog markets, relationship of meat analogs to the meat industry, meat analogs as related to the world food problem.

Table 1B (p. 380-81) is of great interest; it shows "United States commercial soy protein products in meat applications." The 1st column is "Company name." The next

6 columns under "Trade name" are as follows: 50% protein (flours flakes or grits; or textured); Soy protein concentrates (powder; or textured). Soy protein isolates (powder; or textured). For example, under "Textured soy protein concentrates" are only two products, GL-9921 and GL-219 both made by Griffith Laboratories (Chicago, Illinois).

Note: This is the earliest English-language document seen (Nov. 2015) that contains the term "Textured soy protein concentrates." However it is part of table 1B and written on two lines, with the word "Textured" on the bottom line.

"The conversion of vegetable protein materials into food products with meat-like texture is one of the great food inventions of all time" (p. 367).

A meat analog may resemble meat "in one or more simple functional characteristics such as appearance, texture, flavor, and color.

"A meat analog might best be considered as an engineered protein food product, fabricated to offer advantages over the natural meat product in one of several ways. These plus points may be a lower unit cost for an end-use product of comparable nutritional and palatability characteristics; a designed and controlled composition related to the quantity and quality of fats employed;..."

These engineered products "may be a complete replacement of the animal protein food with vegetable protein" or "they may be a combination of meat and vegetable protein" (p. 369-70).

According to a paper presented by Horan on 5-6 Feb. 1970 at the Gottlieb-Duttweiler Inst. for Economic and Social Studies, Green Meadow Foundation, Ruschlikon-Zurich, consumption of soy protein products in human foods is as follows: Soy flours (50% protein) 400,000,000 lb. Soy protein concentrate (70% protein) 25,000,000 lb. Soy protein isolate (90% protein) 20,000,000 lb. This is the equivalent of 500,000,000 lb of 50% protein soy flakes.

In thermoplastic-extruded types of meat analogs, a mixture of soy flour and water, plus flavoring, coloring, and supplemental nutrients (if desired) is "fed to a cooker-extruder and subjected to elevated pressure and temperature whereby a plastic mass is formed and extruded through a die to a condition of lower pressure and temperature, thus forming an expanded product. Depending upon processing conditions, variations in formulations, types of dies, and the speed of the cutting knife at the face of the die, a wide range of products can be made differing in density, shape, size, color, and flavor." They generally have 8 common characteristics, which are described. Address: Archer Daniels Midland Company, Decatur, Illinois.

667. Leading processors of soybeans, 1972-73. 1974. See p. 71

• **Summary:** This two-part table is Exhibit 39 of an unknown document. The two sources of the information are Lehman

Brothers Estimates, and USDA. In 1972-72 (the crop year begins in September) an estimated 722 million bushels of soybeans were crushed in the United States. Estimates of the number of bushels crushed by major U.S. soybean crushers is as follows:

Cargill 130 million bushels. 18.0% of industry total.

Archer-Daniels- Midland 120 million bushels. 16.6% of industry total.

Central Soya 90 million bushels. 12.5% of industry total.

Ralston-Purina 70 million bushels. 9.7% of industry total.

Esmark [Swift] 55 million bushels. 7.6% of industry total.

Staley, A.E. 55 million bushels. 7.6% of industry total.

Anderson Clayton 40 million bushels. 5.5% of industry total.

Allied Mills 35 million bushels. 4.8% of industry total.

Others 127 million bushels. 17.6% of industry total.

Part II of the table shows the growing consolidation in the soybean crushing industry:

Year: 1954-55. Crushings (million bu.): 241.4. Four largest companies: 41% of total. Eight largest companies: 64%. Twenty largest companies: 89%.

Year: 1958-59. Crushings (million bu.): 398.8. Four largest companies: 40% of total. Eight largest companies: 63%. Twenty largest companies: 86%.

Year: 1963-64. Crushings (million bu.): 436.8. Four largest companies: 50% of total. Eight largest companies: 70%. Twenty largest companies: 88%.

Year: 1967-68. Crushings (million bu.): 576.4. Four largest companies: 55% of total. Eight largest companies: 76%. Twenty largest companies: 94%.

Year: 1972-73. Crushings (million bu.): 721.9. Four largest companies: 56%\* of total. Eight largest companies: 82%\*. Twenty largest companies: 97%\*. \* = Estimates.

668. Machanik, Anne; Machanik, Gerald. 1974. Nutritious dishes that replace meats and fishes. Cape Town, South Africa: Hollandsch Afrikaansche Uitgevers Maatschappij (HAUM). xi + 112 p. 22 cm.

• **Summary:** A vegetarian cookbook. Soy-related recipes include: Soyabean roast (with cooked, mashed soybeans, p. 8). Spinach stalks with Somos (Soybean protein [actually textured soy flour], p. 61). Sweet and sour potatoes with TVP (Vegetable protein, p. 68). Sweet potato and soybean casserole (p. 68-69). Tomato and soybean stew (p. 70). Address: 1. Author; 2. Formerly Senior Medical Officer, Dep. of Labour, of the Office of the Workmen's Compensation Commissioner, and Head, Industrial Health and Safety, South African Bureau of Standards.

669. Quick, Vivien; Quick, Clifford. 1974. Everywoman's wholefood cook book. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 128 p. Illust. Index. 21

cm. [16 ref]

• **Summary:** A vegetarian cookbook. The Preface contains a nice statement by Bill Pickering, one-time holder of the world swimming record for the English Channel, on the importance of a vegetarian diet.

Soy-related recipes include: Soya bean savoury (p. 52). Nut savoury (with soya flour and Nutmeat Mixture, p. 56). Soya flour noodles (p. 57). Baked soya beans (p. 58). Protoveg (TVP) and recipes for using it. "Protoveg is in our opinion one of the nicer textured protein foods on the market at the moment. It is made by Direct Foods Ltd., which is licensed for the benefit of *Compassion in World Farming* (a Public Trust). All profits will be recycled for further development of protein direct from the growing crop.

"There is an unflavoured pack and various specific flavours—all of which are of 100 per cent vegetarian origin." Note: Barmene and Vecon are used occasionally as seasonings (e.g., p. 58). Barmene is a yeast extract which, by 1976, contained vitamin B-12. Address: Elmer, Middleton-on-Sea, Sussex, England.

670. **Product Name:** Loma Linda Vitaburger, and Vitaburger Chunks (TVP-brand Textured Soy Flour).

**Manufacturer's Name:** Loma Linda Foods.

**Manufacturer's Address:** 11503 Pierce St., Riverside, CA 92515.

**Date of Introduction:** 1974?

**New Product–Documentation:** Larson. 1974. "The vegetable protein and vegetarian cookbook."

671. Andreas, Dwayne O. 1975. Presentation on ADM. Paper presented to the New York Society of Security Analysts. 11 p. Jan. 21. Unpublished manuscript.

• **Summary:** Mr. Andreas has been processing soybeans and other agricultural commodities constantly since 1938. Four of ADM's top executives come from competing companies: Mr. Walker from Ralston [Purina], Mr. Burket from Central Soya, Mr. Randall from Cargill, and Mr. Bean from Anderson-Clayton. In 1965, thanks to an entirely new technology that was developing for soybean processing, ADM was transformed from a conglomerate into a non-conglomerate focusing on food technology. "Thanks to a great job that had been done in research, ADM received basic patents on TVP (Textured Vegetable Protein; TVP is a registered trademark). This knowledge was immediately commercialized and TVP has been very successful... it is now produced by some 12-13 different companies."

"The Marshall Plan developed Western Europe and Japan into the greatest cash customers that the United States ever had... This global internationalizing of food distribution had the effect of disorienting much of the entire food processing industry. That is, a plant that was not located so that it had access to the world markets might have become worthless or obsolete overnight. And dozens did."

Currently ADM has about 17% of the soybean processing business in the U.S., 17% of the wheat milling, 25% of the barley malting, 25% of the margarine oil business, 30% of the linseed oil, and 27% of the durum flour business (the basic flour for making pasta products).

A four-horse team is pulling ADM in a certain direction for the future. "One is the edible soy business which includes our TVP and soy flours, in which we are the leaders, and will soon include our soy protein concentrates. It is inevitable that edible soy proteins will increase in use over the next 20 years by leaps and bounds on a worldwide basis. And it is for no other reason than economic compulsion. The cost of making good quality high protein edible products out of soy is so low compared to other protein sources that it is just a matter of how long it will take the food companies to learn how to use it in more ways. In the soy flour business many soy flours are now being used to replace dried milk products just as margarine once replaced butter and this use is due to grow substantially in the next few years. The soy fortified bread and roll products you saw today are examples of how protein levels can be boosted by 50% with little or no increase in cost. ADM is the largest producer in the world of soy flour.

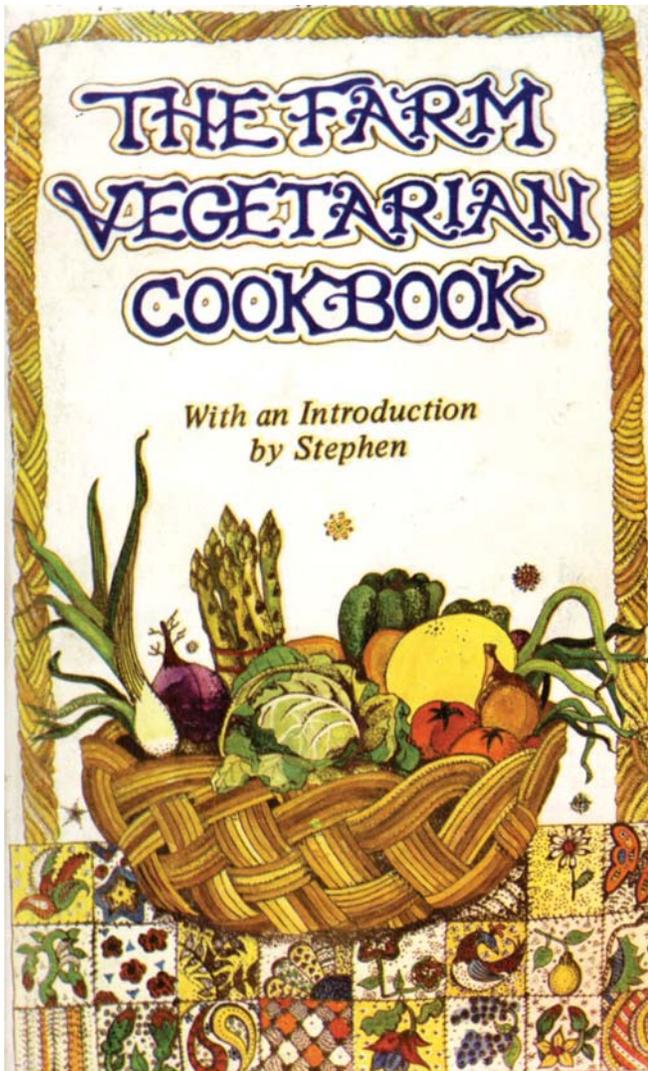
"TVP business has an enormous potential, maybe largely outside of the United States. In every country where there is a balance of payments problem, and where they are importing meat, we get a terrific tail wind from the government in selling TVP..."

"The second thing going in our favor is the continuing worldwide expansion of the margarine business. Margarine is replacing butter, and that's a trend that is unstoppable. This trend is fundamental to our business, since about eighty percent of all of our fats and oils, corn oil, soybean oil, go in margarine.

"A third part of our business which has almost unlimited future growth is the soybean meal portion, where we make a refined [dehulled] grade of soybean meal that's used by the poultry industry all over the world. Under today's technology, poultry is by far the cheapest form of meat that's commercially produced. It will expand very much faster than either pork or beef, because it's so much cheaper and so easy to produce, and that business will continue to grow enormously, worldwide.

"The fourth horse of our four-horse team is the corn refining business." We produce corn syrup and fructose [two different products], which are experiencing very rapid growth in demand. Two other very good firms, Standard Brands and the A.E. Staley Co. are now producing fructose, but suddenly most of the soft drink people have decided to use fructose, creating an enormous demand. So "we changed our plans and now plan to produce about 480 million pounds of fructose by next winter and to double that by sometime in 1976."

So the four-horse team pulling ADM into the future is edible soy products, margarine, soybean meal, and



refined corn sweeteners (corn syrup and fructose). Address: Chairman and CEO of ADM.

672. Farm, The. 1975. The Farm vegetarian cookbook. Summertown, Tennessee: The Book Publishing Co. 128 p. Illust. Index. 18 cm. Revised edition by L. Hagler. 1978. 223 p.

• **Summary:** Expanding on the pioneering “Yay Soybeans!” (Oct. 1974), this creative and creatively illustrated vegan cookbook contains many extremely innovative and original recipes including: Soybean Stroganoff. Soyburgers. Spaghetti Sauce with TVP. Soysage. Soy fritters. Indonesian fried tempeh. Soymilk. Tofu. Tofu spreads. Soy “yogurt.” Soy “cheese.” Soy “butter” (made with soy flour). “Cream cheese” (made with soymilk). Soy “mayonnaise.” Soy “whipped cream.” Soy “coffee.” “Soy ‘nuts.’” Soy pulp granola. Ice Bean [soy ice cream] (Recipes include: Pineapple “sherbet” and “Vanilla ice bean,” each made with soy milk instead of dairy milk). Mellowmeal (breakfast cereal containing soy flour). Soy “yogurt” Danish pastry. Soy

bread. Soy pulp cookies. Soy “cheese cake.” Blintzes (filled with tofu).

Gluten recipes (p. 54-59) include: Basic gluten (feeds 8 generously). Gluten roast. Gluten burritos. Chili gluten. Oven-fried gluten. Janice’s barbecue [barbecue] gluten ribs.

The back cover states: “We are a large, long-haired spiritual community in Tennessee. We came together through open meetings in San Francisco with Stephen. We have 750 people, including 250 kids, living on 1,750 acres. This cookbook is to help as many people be vegetarians as possible without turning any of them off and making them think its strange or weird and to let people know that it tastes good, is nice, graceful, and it can be a turn-on, that it’d be really neat to eat, and make you look forward to meal-times and make you really happy to eat such good food.” The Introduction, by Stephen, begins: “The thing about our cookbook is we don’t want to be faddish or cultish or scare people off. We just honestly want them to know how to make it on vegies, even somebody who doesn’t particularly have a moral reason for being a vegetarian, but just wants to eat a little cheaper, or somebody who learns to be a vegetarian to lose weight, ‘cause you maintain a really healthy natural weight on vegetables... The main thing is that we’re absolute vegetarians. We don’t do meat or milk or eggs or cheese or fish or fowl.”

“You can increase the world’s food supply by being a vegetarian. So its good for everybody else, its good for the individual for health, and its good for the soul and the spirit not to be involved in killing. And I understand that vegetables are alive, but like I’ve said before, I’ve been to pig stickings, and I’ve been to rice boilings, and rice boilings have better vibrations than pig stickings.”

Photos show: Facing title page: People planting white potatoes at the edge of a large field in front of the woods. The lady in front is Sylvia Tepper, Robert Tepper’s wife. Pages: (1) Little Susannah Frohman eating a rolled up soybean tortilla. (3) Stephen Gaskin. (18) Ruth Thomas, making lunch in the kitchen of the only house on the property when Farm folks first came here. It housed The Farm’s clinic, school, bank offices, and receptionist for a number of years until other facilities were built for these purposes. Ruth could make a mean soybean burger (which is pictured). (23) Laurie Sythe making potato soup on the other side of the same kitchen Ruth was pictured in. (35) Poblano chili plants. (60-61) Tempeh sliced to be round to fit on buns, resting on a plate (L) and a tray (R). (64). Uncle Bill (age 82, center, surrounded, from left by: Marilyn Keating, Jeffrey Keating, Ruth Thomas, Patrick Thomas, Uncle Bill, Joel Kachinsky, Roberta Kachinsky, Bruce Moore, Roslyn Moore {holding baby Sam}. All at their home on Schoolhouse Ridge. The house, named “Kissingtree,” was originally built for Stephen and family, but he declared it “too fancy” for him, and he passed it on to this group {women were mostly schoolteachers in our school}). (67) Janice Hunter

making stir fry at the Tower Road House kitchen. (68) John Hurgeton drinking a glass of soymilk on a construction site somewhere. (71) Sue Ellen, who worked in The Farm's soy dairy, holding a glass of soymilk and relaxing. (89) Sour soymilk Danish pastry. (106) Jars of canned goods stored at the Farm's canning facility. Thanks to Cynthia Holzapfel for providing photo captions.

Illustrations appear on almost every page: On the front cover is a color illustration of a basket full of vegetables on a quilt. Many of the pages have illustrated borders or unique illustrations (line drawings) (flowers, plants, leaves, a pot of steaming food, psychedelic designs, native American motifs, etc.) where there would otherwise be empty space. Pages: (10) A Farm member eating, with one hand, a tortilla wrap filled with cooked whole soybeans. (20) A young woman in a kitchen facing the stove. (28-29) Illustrations of two Farm members making pizza. (65) Uncle Bill in a kitchen stirring a pot. (81) A pitcher labeled "Soy Milk." (83) An old-fashion, hand-turned ice cream machine for making Ice Bean. (88) Sour soymilk Danish pastry. (95) A happy man and a woman eating bagels. The man's finger, pointing up, serves as a bagel holder. Yum! (100) Overhead view of a round table with ten people eating. (105) A vase full of kitchen utensils. (113) A lady holding a cake—a very favorite recipe on The Farm. (120) A lady rolling out dough on a table.

Note 1. This book played an important role in introducing soyfoods (especially tempeh and soy ice cream), as well as a vegan diet, to America.

Note 2. This is earliest publication seen by The Farm that contains a tempeh recipe.

Note 3. This is the earliest document seen (Oct. 2008) that contains the word "vegies" (one of two documents).

Note 4. This is also the earliest document seen (Oct. 2008) that uses the word "barbeque" or "barbequed" rather than the standard "barbecue."

Note 5. This is the earliest English-language document seen (Oct. 2013) that contains the term "Soy 'whipped cream' (regardless of capitalization).

Note 6. Some sources (OCLC/WorldCat) cite Stephen Gaskin as the author of this book. Others cite Louise Dotzler; her maiden name was Louise Hagler, but she was married to Thomas Dotzler in 1975. Later that decade they separated and Louise reverted to using her maiden name As "Louise Hagler," she was the editor / author of several later revised and expanded editions of *The Farm Vegetarian Cookbook* (1978, 1988) plus several outstanding books about soyfoods published at The Farm. Address: Summertown, Tennessee.

673. *Food Processing*. 1975. Plant, laboratories: Archer-Daniels-Midland,... Feb. p. 8.

• **Summary:** "... Decatur, Illinois, plans to build soy protein concentrate plant, scheduled to be in operation by March 1975. Company said expansion necessary to meet domestic and overseas demands."

674. Kies, Constance; Fox, Hazel M.; Nelson, L. 1975. Triticale, soy-TVP and millet based diets as protein suppliers for human adults. *J. of Food Science* 40(1):90-93. Jan/Feb. [12 ref]

• **Summary:** "These results suggest that triticale additions may be advantageous in the case of relatively poor quality plant protein resources such as millet and also in the case of relatively good quality sources such as soy. Additional work is needed on the effects of mixing cereal/plant protein resources in human diets." Address: Dep. of Food & Nutrition & Dep. of Agronomy, Nebraska Agric. Exp. Station & College of Home Economics, Univ. of Nebraska, Lincoln, NE 68503.

675. ADM. 1975. Technical data: Ardex 500. Ardex 700F, Ardex 700G. ADM: Box 1470, Decatur, Illinois 62525. 8 p. March 1.

• **Summary:** "Ardex is the trademark of ADM's family of soy protein concentrate products."

Ardex-500 is a full-fat soy protein concentrate

Ardex 700-F (fine) is a defatted soy protein concentrate in flour form.

Ardex 700-G (granular) is a defatted soy protein concentrate in granular form.

These products "possess a low level of the flavors usually associated with soy proteins."

"The process of manufacture (patent pending) involves the extraction of the water-soluble carbohydrates, minerals and other minor constituents, and inactivation of off-flavor-producing enzymes and anti-nutritional factors."

The composition is given in detail—minerals, amino acids, bacteriological, etc.

The product has been advertised as "TVP/2®."

676. ADM, Soybean Division. 1975. Technical data: Ardex 550. Soylec. Defatted grits, expeller grits, expeller flour for use as meat binders and extenders (Leaflet). ADM: Box 1470, Decatur, Illinois 62525. 8 p. May 1.

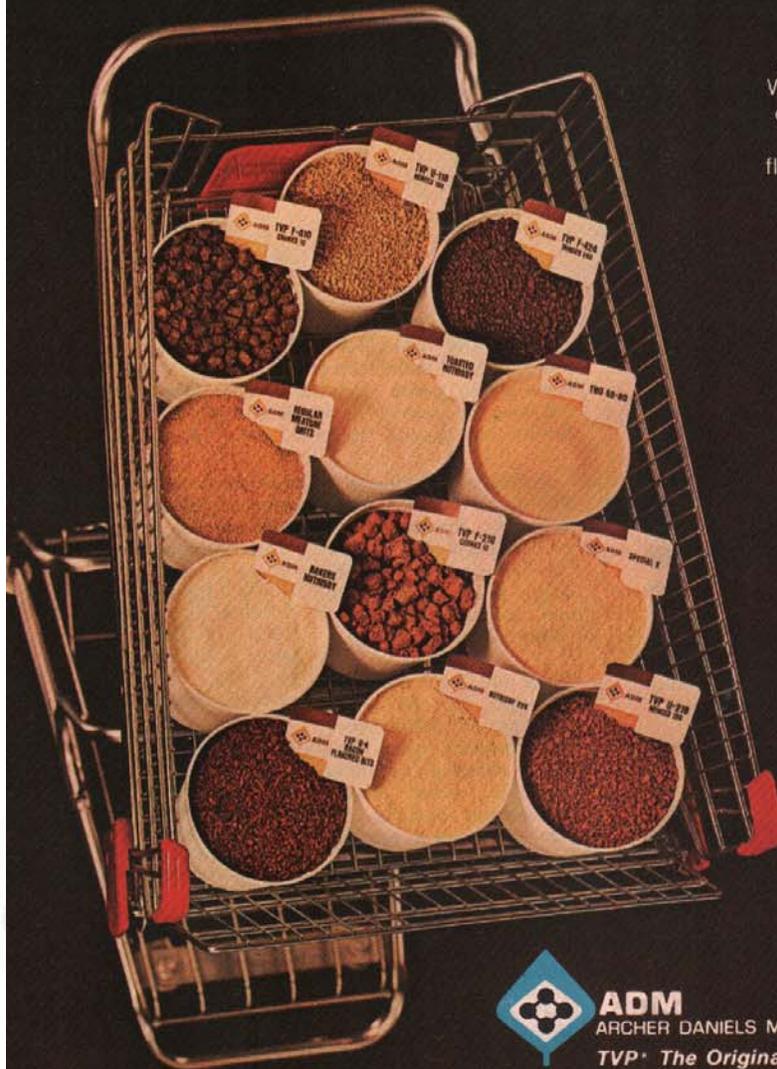
• **Summary:** Approximate composition of Ardex 550 (2 p.). Toasted Nutrisoy grits (composition) and Fine and regular Meatone grits (1 p.). Soylec: Lecithinated soy flour: Analysis of T-6 and T-15. (2 p.) Nutrisoy 220, Special X soy flour, Regular Meatone Grits. (composition) (2 p.)

677. Archer Daniels Midland Co. 1975. One stop shopping: At ADM—Where soy protein products come in the right textures, flavors, colors, sizes and types for formulations (Ad). *Food Processing (Chicago)*. June. p. 31.

• **Summary:** In a shopping cart are 12 ADM products: TVP F-410 Chunks 10, TVP U-118 Minced. TVP F-424 Minced 240. Regular Meatone Grits. Toasted Nutrisoy. TNG 40-80. Bakers Nutrisoy. TVP F-210 Chunks 10. Special K. TVP K-4 Bacon Flavored Grits. Nutrisoy 220. TVP U-210 Minced

# ONE STOP SHOPPING

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In the world of soy protein ADM can meet all your needs. We're unequalled in quality and quantity of full-fat and expeller products. Plus defatted flours, flakes and grits. And there's no wider choice of protein solubility in flour or flake form.

ADM supplies ingredients rich in protein and with excellent water and fat holding characteristics for canned and frozen foods, processed meats, bakery goods, cereals, candies, food drinks and more. ADM textured protein provides the unique combination of high quality and lowered costs in your food formulations.

ADM pioneered soybean food product development, introduced TVP® brand textured vegetable protein, has world-wide production capacity and research programs.

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**ADM**  
 ARCHER DANIELS MIDLAND COMPANY Decatur, Illinois 62525  
**TVP® The Original Textured Vegetable Protein**  
 A Patented Product/U.S. Patent Number 3,488,770

180.

678. MacMillan, Joan Bradford; Smith, Elizabeth B. 1975. Development of a lacto-ovo vegetarian food guide. *J. of the Canadian Dietetic Association* 36(2):110-17. Summer. [13 ref]

• **Summary:** Page 111: “Whether the plant-based diet is arrived at by means of simple elimination of meat, fish and poultry, or by judicious substitution of suitable high protein vegetable sources for the animal proteins, it is known that it is possible to supply a nutritionally adequate dietary by means of plant foods plus milk and eggs.” “The guide was designed for vegetarians who consume some milk and eggs.”

Page 112: Table 1. Food groups and serving sizes. “The standard serving of milk is one cup whole, 2%, skim (added Vitamins A and D).” Other dairy products, such as 4 oz. cream cheese, may be substituted. “One and a half eggs on the average are recommended by the guide. This includes those used in baked items,…”

The four food groups are: 1. Bread, cereal, pasta, and rice. 2. Vegetable protein foods, including TVP, A. Legumes: 1 cup cooked soybeans or other beans, ¼ cup peanuts or peanut butter, 6 oz. soybean curd. “Meat analogues: These are usually canned or frozen meat-like foods derived from vegetable protein (often soy, gluten or nut protein).” B. Nuts and seeds (1½ oz. or 3 tablespoons). 3. Milk and eggs. 4. Fruits and vegetables.

Note: This is the earliest document seen (Nov. 2014) that contains the term “plant-based diet” in a nutritional context. This term, which is now widely used, denotes a diet that contains a high percentage of calories from plant foods, with an optional small percentage of animal foods allowed. There is no universally agreed numeric value for the definition of high vs. small percentages in this context. The term appears to mean different things to different authors; these diets can range from strict vegan to non-vegetarian with limited consumption of flesh foods. Address: 1. Research Asst.; 2. Assoc. Prof. Both: Dep. of Foods and Nutrition, Faculty of Home Economics, Univ. of Manitoba, Winnipeg [Canada].

679. Baldwin, R.E.; Korschgen, B.M.; Vandepopuliere, J.M.; Russell, W.D. 1975. Palatability of ground turkey and beef containing soy. *Poultry Science* 54(4):1102-06. July. [8 ref]

• **Summary:** In Part 1, ground dark turkey meat was combined with 10, 20, or 30% of rehydrated unflavored textured soy protein (TSP) (Bontrae Crumbles, General Mills, Inc., Minneapolis, Minnesota 55427). In Part 2, unflavored TVP (from ADM, Decatur, Illinois 62525) was used in place of Bontrae.

“A sensory panel indicated no significant difference in flavor between the controls and ground turkey or beef patties containing 10% textured soy protein (TSP). Both of these products were rated acceptable, whereas patties containing 20 and 30% TSP ranked just below acceptable

on the rating scale... As much as 40% TSP was substituted for ground turkey in sweet-sour and chow mein entrees without significantly lowering mean scores for aroma, flavor, and general acceptability.” Address: Univ. of Missouri, Columbia, MO 65201.

680. *Food Processing (Chicago)*. 1975. Protein update: Guides to protein products and companies. Aug. p. 28, 33-34, 36, 38, 40-41, 44, 48, 50.

• **Summary:** Discusses soy protein products made by: ADM, Baltimore Spice, Cargill, Carnation Co., Central Soya Co., Custom Food Products Inc., DMI Inc., Far-Mar-Co., General Mills, Grain Processing Corp., Griffith Laboratories, Industrial Grain Products Ltd., Lauhoff Grain Co., Miles Laboratories, Nabisco, National Protein Corp., Paniplus Co., Ralson Foods, Ralston Purina, Staley (A.E.) Co. (Protein Div.), Swift & Co. Details on how each product can be used and a complete address for each company are given.

Note: A table (p. 25) shows what soy proteins are available from what companies. For example: General Mills, Inc. (Minneapolis, Minnesota): Makes spun and textured vegetable protein products. “Spun protein is produced from soy isolate base and is used in products such as frozen ham dices and frozen chicken dices and chunks.” Recently the company has developed a patented process for Steam Texturization of protein. The product has a clean taste and comes in a range of particle sizes. Its texture is very similar to that of pork, beef, poultry and seafood. “Products are available to meet specific application needs with regard to texture, flavor, color, size, and nutrition. Products can also be produced to retain many times their weight of moisture.”

Grain Processing Corp. (Muscatine, Iowa): A line of soy protein concentrates with 70% protein. Two new soy protein isolates, including high and low solubility products, with 90% protein, are spray dried, free flowing powders.

Griffith Laboratories (Chicago, Illinois): Soy protein concentrate, powdered and granular structured. The latter is recommended as a meat extender in meat patties since it imparts texture, binding characteristics, moisture retention and extra nutrition. This textured soy concentrate is also “available in any number of seasoning blends.” Address: Assoc. Editor.

681. Food Systems Branch and Research Branch, Agriculture Canada; Grain Marketing Office. Industry, Trade and Commerce. 1975. U.S. Food Protein Council (Document part). In: *Plant Proteins in Canada: Utilization for Human Food*. 1975. Canada. iii+ 163 p. See p. 50. Sept. 28 cm. [1 ref]

• **Summary:** The three objectives of the Council are listed. “Members of the Council include: Archer Daniels Midland, Cargill, Central Soya, Far-Mar-Co., General Mills, Griffith Laboratories, Lauhoff Grain, Miles Laboratories, National Protein, Ralston Purina, A.E. Staley, Swift, Honeyamead

Products, Riceland Foods, Pfizer, and Nestlé.”

Source: Grain Marketing Office, Trade Commissioner Service of I.T. & C. [Department of Industry, Trade and Commerce]. Address: Canada.

682. Food Systems Branch and Research Branch, Agriculture Canada; Grain Marketing Office. Industry, Trade and Commerce. 1975. British vegetable protein producers and distributors (Document part). In: *Plant Proteins in Canada: Utilization for Human Food*. 1975. Canada. iii+ 163 p. See p. 51. Sept. 28 cm. [1 ref]

• **Summary:** The following British companies (all but 1 of the 17 listed) make or distribute soya protein products: 1. British Soya Products Ltd., Ware, Herts. 2. Rank, Hovis McDougall Agricultural Industries Ltd., London. 3. Messrs. Courtaulds, Manchester. 5. Spillers Ltd., Liverpool. 6. Chambers & Fergus Ltd., Hull. 7. Christian Salvensen Ltd., Grimsby. 8. British Arkady Ltd., Manchester. 9. Soya Foods Ltd., Barking, Essex. 10. Amsal Ltd., London. 11. Bush Boake Allen Ltd., London. 12. Oppenheimer Casing Co. (UK) Ltd., Edinburgh. 13. Griffith Laboratories (UK) Ltd., Summercotes, Derby. 14. Miles Laboratories, Bridgend, Glamorgan. 15. Croda Premier Ltd., Hull. 16. Crosse & Blackwell Ltd., Croydon. 17. Unilever Raw Materials Ltd., London.

Source: Grain Marketing Office, Trade Commissioner Service of I.T. & C. [Department of Industry, Trade and Commerce]. Address: Canada.

683. National Soybean Processors Association. 1975. Year book and trading rules 1975-1976. Washington, DC. ii + 103 p.

• **Summary:** On the cover (but not the title page) is written: Effective October 1, 1975. Contents: The National Soybean Processors Association [Introduction and overview]. Constitution and by-laws. Officers and directors. Executive staff. Members. Standing committees. Food Protein Council. Trading rules on soybean meal. Sales contract. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}), sampling of soybean meal {automatic sampler, probe sampler}), official weighmaster application, semi-annual scale report, official referee chemists (meal). Trading rules on soybean oil. Sales contract. Definitions of grade and quality of export oils. Soybean lecithin specifications. Appendix to trading rules on soybean oil: Inspection, grading soybean oil for color (N.S.P.A. tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses; soap stock, acidulated soap stock and tank bottoms (only method numbers listed), official weighmaster application, semi-annual scale report, official referee chemists (oil). Soybean oil export trading rules. Foreign trade definitions (for information purposes only).

The page titled National Soybean Processors Association (p. ii) states: “The NSPA is the professional association of America’s soybean processors. Its members process and market more than 95 percent of all soybean crushed within the continental U.S. From nearly 85 processing centers, in every major soybean producing region of the nation, NSPA members service America’s agricultural community.

“During the past crop year about 700,000,000 bushels of soybeans moved through processing plants of NSPA’s 33 member firms. Approximately 60 percent of America’s 1.2 billion-bushel soybean crop is bought and processed by NSPA members. Exporters account for another 32 percent of the crop, and the remainder [8%] is returned to farms for seed, feed, and residuals.” Also discusses industry programs, soybean research, and international market development.

The section on officers, executive committee, and board of directors (p. 7-8) gives the name, company affiliation, and phone number of each person. Officers—President: Lowell K. Rasmussen, Honeymead Products Co. Vice President: John G. Reed, Jr., Continental Grain Co. Secretary: Stiles M. Harper, Southern Soya Corporation. Treasurer: T.J. Suelzer, Central Soya Co. Immediate past president: James R. Spicola, Cargill, Inc. Executive Committee: Donald B. Walker (‘77), ADM. James R. Spicola, Cargill. Thomas J. Suelzer, Central Soya. John G. Reed, Jr., Continental. Martin Hinby (‘76), Cook Industries.

Board of Directors (alphabetically by company; each member company has one representative on the board): Thomas H. Wolfe, Anderson, Clayton & Co. Donald B. Walker, Archer Daniels Midland Co. George H. Heinz, Buckeye Cellulose Corp. John Fallon, Bunge Corporation. James R. Spicola, Cargill, Inc. Thomas J. Suelzer, Central Soya Co., Inc. John G. Reed, Jr., Continental Grain Co., Martin Hilby, Cook Industries. Joe C. Givens, Dawson Mills. Alfred Jenkins, Delta Cotton Oil & Fertilizer Co. John A. Dotson, Far-Mar-Co., Inc. Kenneth E. Sullivan, Farmers Grain Dealers Assn. of Iowa. Donald M. Chartier, Farmland Industries, Inc. Gaylord O. Coan, Gold Kist Inc. Lowell K. Rasmussen, Honeymead Products Co. David C. Thompson, Krause Milling Co. Kenneth J. McQueen, Land O’Lakes, Inc. Floyd W. Brown, Lauhoff Grain Co. Kermit F. Head, Missouri Farmers Assn.—Grain Div. James A. Smith, National Protein Corp. Robert E. Hicks, Owensboro Grain Co., Inc. Frank P. Perdue, Perdue Incorporated. John H. Payne, Planters Manufacturing Co. William T. Melvin, Planters Oil Mill, Inc. Theodore W. Bean, Quincy Soybean Co. E.J. Cordes, Ralston Purina Co., W.L. Knoll, Riceland Foods, Inc. J.D. Morton, Sherman Oil Mill. Stiles M. Harper, Southern Soya Corp. James W. Moore, A.E. Staley Mfg. Co. W.W. Moore, Swift Edible Oil Co. Preston C. Townsend, Townsend’s Inc. Tyler Terrett, West Tennessee Soya Mill, Inc.

Executive office, Washington, DC: Executive Director, Sheldon J. Hauck. Director, Public Affairs: Jack DuVall.

Administrative Asst.: Jean N. Sullivan. National Soybean Crop Improvement Council: Robert W. Judd, Managing Director. General counsel: Edward H. Hatton, Esq., Jenner & Block, Chicago, Illinois.

Members (listed alphabetically by company; within each company, first the name of the official Association representative {who is on the Board}, followed by the other personal members listed alphabetically by surname. For example, Archer Daniels Midland Co., the company with the most personal members, has 24. After the name of each personal member is given his address and phone number. In the listing below, the number of personal members is shown in parentheses after the name of each company, followed by city and state of the various locations): Anderson, Clayton & Co. (6); Phoenix, Arizona; Osceola, Arkansas; Jackson, Mississippi; Vicksburg, Mississippi; Houston, Texas. Archer Daniels Midland Co. (24); Decatur, Illinois; Galesburg, Illinois; Granite City, Illinois; Fredonia, Kansas; Mankato, Minnesota; Red Wing, Minnesota; St. Louis, Missouri; Fremont, Nebraska; Lincoln, Nebraska; Kershaw, South Carolina. Buckeye Cellulose Corp. (8); North Little Rock, Arkansas; Augusta, Georgia; Cincinnati, Ohio; Memphis, Tennessee. Bunge Corporation (5); St. Louis, Missouri; New York City, New York; Cargill, Inc. (15); Gainesville, Georgia; Cedar Rapids, Iowa; Des Moines, Iowa; Sioux City, Iowa; Washington, Iowa; Chicago, Illinois; Wichita, Kansas; Minneapolis, Minnesota; Fayetteville, North Carolina; Memphis, Tennessee; Chesapeake, Virginia. Central Soya Co., Inc. (11); Chicago, Illinois; Gibson City, Illinois; Decatur, Indiana; Fort Wayne, Indiana; Indianapolis, Indiana; Belmond, Iowa; Marion, Ohio; Bellevue, Ohio; Delphos, Ohio; Chattanooga, Tennessee. Continental Grain Co. (8); Guntersville, Alabama; Chicago, Illinois; Taylorville, Illinois; New York City, New York; Cameron, South Carolina. Cook Industries (12); Pine Bluff, Arkansas; Emporia, Kansas; Marks, Mississippi; Memphis, Tennessee. Dawson Mills (3); Dawson, Minnesota. Delta Cotton Oil & Fertilizer Co. (1); Jackson, Mississippi. Far-Mar-Co., Inc. (1); St. Joseph, Missouri. Farmers Grain Dealers Assn. of Iowa (Cooperative), Soybean Processing Div. (1); Mason City, Iowa. Farmland Industries, Inc. (3); Van Buren, Arkansas; Sergeant Bluff, Iowa; Kansas City, Missouri. Gold Kist Inc. (3); Atlanta, Georgia. Honeyhead Products Co. (3); Mankato, Minnesota. Krause Milling Co. (2); Milwaukee, Wisconsin. Land O'Lakes, Inc. (3); Fort Dodge, Iowa; Sheldon, Iowa. Lauhoff Grain Co. (1); Danville, Illinois. Missouri Farmers Assn.—Grain Div. (4); Mexico, Missouri. National Protein Corp. (2); Champaign, Illinois; Chicago, Illinois. Owensboro Grain Co., Inc. (1); Owensboro, Kentucky. Perdue Incorporated (2); Salisbury, Maryland. Planters Manufacturing Co. (2); Clarksdale, Mississippi. Planters Oil Mill, Inc. (1); Rocky Mount, North Carolina. Quincy Soybean Co. (4); Quincy, Illinois. Ralston Purina Co. (8); Bloomington, Illinois; Lafayette, Indiana; Iowa Falls,

Iowa; Louisville, Kentucky; St. Louis, Missouri; Raleigh, North Carolina; Memphis, Tennessee. Riceland Foods, Inc. (8); Helena, Arkansas; Stuttgart, Arkansas. Sherman Oil Mill (1); Fort Worth, Texas. Southern Soya Corp. (1); Estill, South Carolina. A.E. Staley Manufacturing Co. (8); Decatur, Illinois. Swift Edible Oil Co., Div. of Swift & Co. (1); Chicago, Illinois; Townsend's Inc. (2); Millsboro, Delaware. West Tennessee Soya Mill, Inc. (1); Tiptonville, Tennessee.

Associate Members: Anderson Clayton Foods, Dallas, Texas. Best Foods Div. of CPC International Inc., Englewood Cliffs, New Jersey. Canadian Vegetable Oil Processing Co., Hamilton, Ontario, Canada. Capital City Products Co., Div. of Stokely-Van Camp, Inc., Columbus, Ohio. I.H. French & Co., Champaign, Illinois. General Mills, Inc., Minneapolis, Minnesota. Glidden-Durkee, Div. of SCM Corporation, Chicago, Illinois (Gerald J. Daleiden). Grain Processing Corp., Muscatine, Iowa (H.P. Woodstra). Hartsville Oil Mill, Hartsville, South Carolina (Richard A. Koppein). Humko Products, Memphis, Tennessee. Hunt-Wesson Foods, Inc., Fullerton, California. Kraft Foods Div. of Kraftco Corp., Chicago, Illinois. Lever Brothers Co., New York City, New York. Maple Leaf Mills Ltd., Toronto, Ontario, Canada (W.G. Milliken). Procter & Gamble Co., Cincinnati, Ohio. Quaker Oats Co. (The), Chicago, Illinois. Schouten International, Inc., Minneapolis, Minnesota. Southern Cotton Oil Co., New Orleans, Louisiana. Southern Feed Ingredients Co., Memphis, Tennessee. Wilsey Foods, Los Angeles, California.

Standing committees: For each committee, the function of the committee, the names of all members (with the chairman designated), with the company and company address of each are given—Crop Improvement Council. Meal trading rules. Oil trading rules. Safety and insurance. Soybean Research Council. Technical. Traffic and transportation. Food Protein Council (Objective and rules adopted 3 March 1971, amended 5 Nov. 1971). Address: 1800 M St., N.W., Washington, DC 20036. Phone: (202) 452-8040.

684. *Quick Frozen Foods*. 1975. \$100-million market by 1980 is foreseen for frozen soy extenders and analogues: Textured soy protein. 38:24-26. Oct.

• **Summary:** The market is growing for textured soy protein products that can “stand in” for more expensive meat, poultry and seafood in frozen usage. “Trend is toward analogues that extend animal protein to the point of replacing it” as the main component in new products entering the field. After industry consultation this magazine estimates that by 1980 these extenders and analogues combined will range from a low of \$60 million to a high of \$200 million in frozen food use.

Products discussed include: Central Soya Co.'s Response [a textured soy protein concentrate]. Ardex 700, one of the “TVP” [sic, soy protein concentrate] products

from ADM. Nabisco's VMR line with its beef, chicken, and seafood extenders. General Mills' Bontrae "no-meat meats" (beef, chicken and ham products spun from soy protein isolate) and no-tuna tuna. Most Bontrae products are sold frozen to food service people for better flavor. Mott's Soyloin entree line available from the Foodservice Division of Duffy-Mott Company, Inc., New York, NY. "These frozen, pre-cooked products include soy-analogues resembling traditional Sloppy Joe, Chili Con Carne, Chili Hot Dog Sauce with Meat, Sliced Meat Loaf in Tomato Sauce, Salisbury Steak in Gravy or in Sweet 'N' Sour Sauce, Meat Balls with or without Spaghetti Sauce."

"In the retail field, complete lines of vegetable protein analogues of animal foods are exemplified by the products of Worthington Foods, Worthington, Ohio... and the Joshua Foods Division of Food Producers, Inc., Minneapolis, Minnesota, among others... Twenty-eight of the [Worthington] items are frozen, with sales amounting to almost half of the company's total. The frozen products are predominantly spun from high-protein isolates. Their primary advantage is their well-wrought texture, and they also have shipping and storing advantages.

"The Joshua Foods products include meatless 'sausage' pizza, meatless 'meat' casseroles with noodles and macaroni, meatless lasagna, stew and barbecue cubes. All are shipped frozen. The Joshua Foods Division is in partnership with the Israeli developer of the special structurization process the company utilizes. The firm first produced its basic Joshua Filet, simulating beef, in 1973, and offered it to hospitals and other institutions. Retail product development followed success in the institutional market in the same year—initially with ground beef extender."

"General Mills is producing retail frozen soy products under the 'Betty Crocker' label in addition to 'Bontrae.' First introduced were Betty Crocker Country Cuts—textured soy protein with a flavor like ham, and Country Cuts with a flavor like chicken. The pre-cut chunks may be thawed and served in salads or added directly from the freezer and heated with various hot dishes.

"Two new Betty Crocker products, in three varieties each, are currently undergoing testing in the Fort Wayne and Tucson marketing areas—a croquette entree in ham, chicken and seafood flavors (with the seafood variety containing some real cod) and ham, chicken and barbecue beef meat sticks that blend real animal protein with vegetable protein in a potato crust. Each 1½-ounce box of Meat Sticks contains 12 sticks."

**685. Product Name:** Ardex 700 F and 700 G Soy Protein Concentrates.

**Manufacturer's Name:** Archer Daniels Midland Co.

**Manufacturer's Address:** 4666 Faries Parkway, Decatur, IL 62526.

**Date of Introduction:** 1975 November.

**How Stored:** Shelf stable.

**New Product–Documentation:** Spot in Food Processing. 1975. Nov. p. 56 "Defatted protein concentrates." Two improved soy protein concentrates are available from ADM (Decatur, Illinois). Ardex 700 F is in flour form, while 700 G is in grit form.

Archer Daniels Midland (ADM) Annual Report. 1977. "What's new: A 75 year report from Archer Daniels Midland Company." Page 8 states that cookies which are good for kids are "based on our new Ardex soy protein concentrates." The last page states that ADM Protein specialties makes "Ardex 700 soy protein concentrate."

A sell sheet from Basic Foods Company (Los Angeles) gives a nutritional analysis; both products contain 71.0% protein and 8.0% moisture. 700 F has a fine particle size that will pass through a 100 mesh screen; 700 G, grits, will pass through a 20-mesh screen.

*Soybean Digest Blue Book*. 1978. p. 34. Letter from Dick Wallace of ADM. 1981. Sept. To William Shurtleff at Soyfoods Center. ADM started producing soy protein concentrate in 1976.

**686. Product Name:** Cadbury's Soya Choice (Canned Meat Substitute) [Mince, or Casserole Chunks].

**Manufacturer's Name:** Cadbury Typhoo Ltd.

**Manufacturer's Address:** Franklin House, Bouvinville, P.O. Box 171, Birmingham B302NA, England.

**Date of Introduction:** 1975 December.

**Wt/Vol., Packaging, Price:** Can.

**New Product–Documentation:** Archer Daniels Midland (ADM) Annual Report. 1977. "What's new: A 75 year report from Archer Daniels Midland Company." p. 8. "Who needs high priced foods? Not the British. Cadbury's Soya Choice fills the bill. Based on TVP, these products are a raging success. It has the good flavor and nutrition of meat. At half the price. A color photo shows two cans of Cadbury's Soya Choice (Casserole Chunks, and Mince).

Cummings. 1979. *Food Manufacture* (London). 54(1):49-51. Jan. The product was launched in Dec. 1975.

*Food Engineering*. 1979. Jan. "Marketing Soy Products." A photo shows four cans of Cadbury's Soya Choice (Curry, Mince Italian Style, Casserole Chunks, and Mince).

Cummings. 1979. *Journal of the American Oil Chemists' Society* 56(3):400-03. March. "Launching a successful product on the consumer market." Development of the product by Cadbury Schweppes started in 1973 at a time when meat prices in the UK has started to rise and the economy was in one of its periodic downturns. "The final product was launched in December 1975. The brand name chosen was Soya Choice... We originally launched in blue cans but have since changed to discriminate between the mince and the chunk form."

Jenny Botsford. 1980. Soya. p. 50. Shows a black-and-

white photo of two cans of Cadbury's Soya Choice, one in Casserole Chunks and one in Mince texture. The photo on the can shows the product in a pie. The text on the front bottom of the can reads: "Textured soya casserole chunks (or mince) with onions in beef gravy."

R.A. Sair. 1981 (presented Aug. 1978). Marketing plant protein in Europe. p. 395-97. Shows a black-and-white photo of each product in its can. States that test marketing of the product in London began in Jan. 1976. Describes how the product and marketing strategy was developed.

W. Pringle. 1991. "Soya protein, past experience & future potential." In: Soja in Lebensmitteln: Vortraege 2. Hamburger Soja-Tagung. p. 156. Cadbury Soya Choice was launched in Jan. 1976. It consisted of extruded textured soya in gravy. There were three different products in cans. All of the meat extenders or meatlike products launched in the UK during 1975 and 1976 enjoyed real success for a period of time. "In particular Cadbury's Soya Choice sold well for about three years in every area of the U.K. Sad to relate, however, all of them quietly and gradually lost sales and finally disappeared from the market."

687. Kies, Constance. 1975. Nutritional evaluation of fabricated foods. In: G.E. Inglett, ed. 1975. Fabricated Foods. Westport, CT: AVI Publishing Co. vii + 222 p. See p. 186-95. Chap. 14. [7 ref]

• **Summary:** Contents: Introduction. Approaches to measurement of nutritive quality. Comparison of protein value of ground beef, TVP and methionine-enriched TVP at two levels of intake. Effect of varying the ratio of beef and TVP nitrogen on protein value. Comparison of protein quality of several commercially available plant protein products processed to resemble ground beef. Vitamin/protein interrelationships influencing the protein value of TVP. Conclusion. Address: Prof. Dep. of Food and Nutrition, The Univ. of Nebraska-Lincoln, Lincoln, Nebraska.

688. Silverstein, Alvin; Silverstein, Virginia B. 1975. Beans: All about them. Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 86 p. Illust. by Shirley Chan. Index. 22 cm. Summarized in Soybean Digest, Sept. 1975, p. 43. [7 ref]

• **Summary:** This excellent book for children discusses beans in legend and history, how to grow them, and their future as a low-cost protein supplement. Includes experiments, bean recipes, and games.

Contents: Beans. The story of beans. The history of beans. Beans in legend and lore. The life story of the bean. Kinds of beans. Beans in the garden and the marketplace. Beans for the future. Fun with beans. Beans for good eating.

Page 2: "Kuan Yu, a great war god in Chinese folktales, was a bean curd [tofu] seller in his youth."

Pages 12-13, a brief (and partially accurate) history of the soybean, begin: "Soybeans are native to eastern Asia. The oldest written records of them date back to 2838 B.C.

[sic], when Emperor Shen Nung of China wrote a description of the plant." Also mentions: The five sacred grains, soybean "milk," tofu, yuba, [soy] sauces, soybean paste, soybean sprouts, soybean oil, Engelbert Kaempfer, first introduced "to the United States around 1800 when a ship brought some to Philadelphia [Pennsylvania], Commodore Perry (1854), USDA tested about 10,000 different kinds. Now soybeans are the number one U.S. cash crop, accounting for more than 75% of the world's soybean supply. Soybeans are used as foods for humans (in the form of oil, flour, soy sauce, "milk substitutes, and meat substitutes and "extenders") and feeds for animals. They are also used in the manufacture of more than 250 industrial products, including paints, soaps, lubricants, adhesives, and fertilizer.

Page 16: "In China, beans were a good luck symbol. A person who wore a string of soybeans hidden around his neck was believed to possess magic powers to do amazing feats. Three dark soybeans soaked in sesame oil for three days were used to foretell the future."

The chapter "The life story of the bean" (p. 18-29) gives (with illustrations) a simple and accurate description of the bean seed and how it grows, discussing the hilum or seed scar, the micropyle or tiny hole at one end of the hilum, the seed coat, the two cotyledons in which food for the young growing plant are stored, the embryo nestled (a plant in miniature) between the cotyledons, with its two tiny leaves (the plumule), a little root (the radicle), and a stemlike part connecting them (the hypocotyl). When the seed is planted, and it germinates or sprouts, the "embryo root pokes its tip out through the micropyle and grows out into the soil. Tiny root hairs form along the growing root. They take in moisture and dissolved minerals from the soil." The hypocotyl grows until it "suddenly pushes up out of the soil—the first part of the seedling to emerge. It is bent over, for the cotyledons are still buried in the soil." The hypocotyl continues to grow. In a day or so the seed coat splits, then the top of the plant pops up out of the soil. "The empty seed coat is left behind, buried beneath the surface." Now the young bean seedling is growing straight up. The two seed leaves at the top unfold and grow quickly. Below them on the stem are the two cotyledons. As sun shines on the growing plant, its leaves, cotyledons, and stem begin to turn green—a turning point in the life of the plant.

For a while, the growing plant takes the food it needs from the reserves stored in the two cotyledons. But as these reserves are used up, they shrivel and finally fall off. Now the young plant must create its own food using chlorophyll and photosynthesis.

Chlorophyll traps energy from the sun. When examined under a magnifying glass, one can see that the surface of a plant leaf contains many tiny openings called stomates, which are usually open during the day and closed at night. "When the stomates are open, gases from the air pass freely in and out." Air is about 80% nitrogen, 20% oxygen, plus

smaller amounts of carbon dioxide, water vapors, and others gases. In the leaves, “carbon dioxide and water are combined, using the sunlight energy trapped by chlorophyll, into sugar, starches, and other complicated chemicals. Scientists call this process photosynthesis (photo means light, and synthesis means a putting together).” The by-product, oxygen, passes out into the air through the stomates; it is the gas that humans and other mammals need to breathe.

Describes the underground activities related to plant growth, nodules, bacteria that live symbiotically in the roots and fix ammonia and nitrogen. Also describes the bean flower, its parts, self-pollination, the key role of bees, and how the seeds are formed from the flower.

The chapter “The soybean–Number one” (p. 36-39) describes the current status of the soybean in the USA. The chapter “Beans for the future” discusses modern developments such as CSM, soyfoods such as sufu, tempeh, miso, spun soy protein fibers, soybean meat analogs, textured vegetable protein (TVP).

When a bean seed sprouts, how does it know which way is “up”? “Could you ever get a seedling with its roots pointing up in the air and its shoot poking down into the soil?” Supposing you cut off all sunlight? No, plants have a built-in gravity sense which scientists call “geotropism.” A plant hormone called an auxin causes the plant to bend upward—and toward the light (heliotropism). In 1888, the symbiotic partnership between legumes and nitrogen fixing bacteria was first discovered by Hellriegel and Wilfarth. There are short-day plants, long-day plants, and day-neutral plants; flowering will not begin until the length of days and nights is just right (p. 54-59). Bean recipes (p. 70-75). Address: 1. Prof. of Biology, Staten Island Community College, New York City; 2. Translator of Russian scientific materials.

689. ADM. 1975? The meat that never moved a muscle. Introduction to textured vegetable proteins (TVP). Decatur, Illinois: Archer Daniels Midland Co. 21 p. Undated.  
 • **Summary:** Contents: Introduction. Helpful hints with TVP. Recipe cards (pages 2-21, many including “lowest priced ground beef”).

“Introduction: TVP has been used commercially for several years now by food processors and institutions such as hospitals, orphanages and schools. However, it has not been readily available to housewives except in the form of imitation bacon bits.

“TVP is a meat-like product made from soy beans. It is designed to be used with other meats or by itself. Briefly, here’s how it’s made: the hulls are removed from the soy bean, then the oil, and what’s left is ground into flour. The flour is then put through a giant machine called an extruder where great heat and pressure force the flour out of the machine through various sized holes, much like your home food grinder. This causes the molecules to change, forming

chains instead of a random network. This is what gives the product its fibrous, meat-like appearance.

“TVP is currently employed in numerous packaged, canned, and frozen foods. And, many are still being developed. Some pizzas and pizza rolls contain textured protein; likewise, some canned products such as chili and sloppy joes. Every product that does contain textured protein is clearly labeled as such. It is a good idea to get into the habit of reading what the manufacturer includes as ‘ingredients’ on their label.

“I should mention one more item. Plain minced textured protein is a handy item that I keep within reach at cooking time. When using canned chicken soup, or beef vegetable soup or other soups that may be skimpy in their meat content, I add about ¼ cup of plain minced textured protein and simmer about 15 minutes. This makes for a more substantial serving and costs very little in time or money, compared with using additional real meat. Needless to say, protein consumption is thus increased.” Address: Decatur, Illinois.

690. Giovanna, Jasper Di. 1975? My recollections of I.D. [“Ike”] Sinaiko and early history of Illinois Soy Products Co. Illinois? 22 p. Undated. Unpublished typescript.

• **Summary:** In early 1935 Jasper saw a news story in the newspaper in Springfield, Illinois, stating that a man from Madison, Wisconsin, named Isaac Sinaiko had purchased an old flour mill and warehouse located near The Springfield Stock Yards. It said that Mr. Sinaiko, together with certain associates, intended to install machinery and equipment and remodel the building to accommodate a soybean processing business.

The U.S. was still in the throes of the terrible 1929 to 1937 Depression. Jasper, who had only part-time work, was looking for a better job. At the time he was doing stenographic work, light bookkeeping, and other secretarial work. Through Mr. Rankin, superintendent of the Springfield Stock Yards, he got in touch with Ike Sinaiko—who called him to say that he would soon need a stenographer-clerk-bookkeeper. They met at Jasper’s office in Springfield and Jasper began to send out letters to potential customers advising them of the new business; each contained samples of soybean meal and soybean cake.

The new company, named Illinois Soy Products Co., was incorporated under the laws of Delaware. Associated with Ike in the company were his father, Alex, and his brother, Joe. A little later an attorney, Carl Sorling, an attorney in Springfield, also joined. Carl had a very successful law firm, apparently specializing in corporate law.

The president and managing of the company was I.D. Sinaiko. His father, Alex, still lived in Madison, Wisconsin, but come to Springfield often and spent time at the plant during construction and installation. Joe Sinaiko was Ike’s elder brother. He also had a younger brother, Arlie, who

was an eye, ear, nose, and throat doctor. Joe Sinaiko lived in Cedar Rapids, Iowa, where he ran the Iowa Milling Co., a soybean processing plant which he owned. "Joe Sinaiko was one of the first soybean processors in the State of Iowa and one of the earliest in the United States." In Madison, Wisconsin, the home of the Sinaiko family, the Sinaikos had operated a feed store and feed jobbing business. But, in the early days, Joe Sinaiko was the only family member who had experience with soybeans and soybean processing. In the early days Joe had also manufactured feeds, and at times soap. "In Iowa Joe had a large recognition and enjoyed a big following. He was lovingly referred to in certain circles as 'Iowa Joe.'"

While the plant was being remodeled and the machinery installed, Alex and Joe Sinaiko spent a great deal of time in Springfield. They guided the activity and worked closely with Ike. Since Ike had little real experience with soya processing, and Jasper had absolutely none, Joe spent much time patiently teaching them. They began to order booklets, circulars, and other information on soybeans from the University of Illinois Agricultural Experiment Station, the U.S. Department of Agriculture in Washington, DC, the National Soybean Processors Association, etc.

As the plant opening approached, Ike hired a traveling salesman, Matt Carrigan, to call on the trade and also to solicit soybean meal and cake business. The machinery being installed for soybean processing was made largely by the V.D. Anderson Co. of Cleveland, Ohio. Anderson's representative in the Illinois area, John Lundberg, contributed his experience and knowledge. The original machinery included three "Duo Expellers," which each crushed or pressed 350 bushels of soybeans per day, for a total of 1,050 bushels/day.

In 1935 the soybean industry in the USA was in its infancy. Most of the soybeans were yellow, but some black or brown soybeans were grown for hay. The latter were considered inferior for processing since they contained 1-2% less oil and because the dark skins discolored the yellowish soybean meal. "Some buyers seeing the dark specks got the idea that the meal had been adulterated."

The Sinaiko's hired James Schlesinger to be plant superintendent. His son-in-law, Gordon Cruikshank, who worked for the C&IM Railway Co., gave Ike and Jasper much valuable help concerning rates and the use of "Milling in Transit" billing of soybean meal. Much money was involved in proper application of "transit billing" and rates.

"In the fall of 1935 processing started at the Illinois Soy Products Company. Prices for soybeans were between 50¢ and 60¢ per bushel. I believe our starting base wage rate for laborers was 25¢ per hour and for skilled men up to 45¢ per hour. 'Skilled' men would be maintenance men, millwright, and expeller operators.

"I soon learned that Ike Sinaiko was a man of high character, soft-spoken, keen of mind and with a friendly

disposition. He was a charitable and also religious man. He quickly made friends in business circles and also in personal activities. He became active in his church. Also, Ike's wife Ruth was very well liked and made friends readily... He was well liked by his 'peers' in the Soybean Industry.

"Inasmuch as the soybean industry was very young at the time, a good deal of effort was needed to induce farmers to plant more soybeans. We had also to disseminate information to buyers of Soybean Meal as to how to feed successfully the soybean meal to cattle, hogs, chickens, turkeys etc." (p. 5)

Ike started a plan of trading soybean meal for soybeans on a pound for pound basis. This appealed to soybean growers and helped the company, which was profitable for two or three years. However when oil prices began to increase relative to meal prices the practice was discontinued.

"I learned a lot from Ike because of the gentle way he responded to angry shippers who were disturbed by grade discounts. Ike had a pleasing manner with customers and potential customers. He was always generous, but not overly so."

"Ike had a wonderful way with children. He was very democratic with employees and soon earned their friendship and respect." A long story follows of how he helped Albert Cresswell and his family (p. 6).

Both Ike and Joe were very wise and skillful in capitalizing on the movement of markets. They had a knack of buying and selling at the right time. Ike illustrated this many times to the profit of Illinois Soy Products Co.—which was a success right from the first year. Another factor was the expanding livestock and poultry industries; demand for soybean meal in feeds was greater than the supply.

The soybean meal made by the company was sold under the brand name of "Illini," a good choice for a processor located in Illinois. "Although the Illinois Soy Products Company was the only soya processing plant in Springfield there were 3 large competitors in Decatur, Illinois: A.E. Staley Mfg. Company, Archer Daniels Midland Company, and the Shellabarger Soybean Processing Company. Allied Mills was located at Taylorville, Illinois just 26 miles away. Funk Brothers Seed Company had a soybean plant at Bloomington, Illinois. Ralston Purina Company operated at St. Louis, Missouri; Glidden in Chicago. There was also a plant in Quincy, Illinois, but I have forgotten the owners of that plant. Ike soon became on good terms with the operators of those plants and they sometimes loaned us machinery parts and gave us information regarding what to do about problems. Of course, Joe Sinaiko was daily in touch with Ike and was extremely helpful with machinery, loan of personnel, and when needed loans of money. Ike had great respect for Joe and also Love."

The company soon began to expand, adding several larger Anderson expellers. Ike and Ruth built a new, beautiful

and spacious house in southwest Springfield, adjacent to Washington Park. Ike began to travel more, both on business and for pleasure. He took his family to Israel, Europe, and Havana, Cuba—leaving Jasper in charge. Ike suffered from asthma, and all the dust around the soybean plant made it difficult for him to breathe properly. He cleared his throat frequently, and occasionally hinted that he would like to get away from the Illinois humidity. Continued.

691. Giovanna, Jasper Di. 1975? My recollections of I.D. ["Ike"] and early history of Illinois Soy Products Co. (Continued). Illinois? 22 p. Undated. Unpublished typescript. • **Summary:** Continued: At Joe's suggestion, Ike entered the Illinois Soy Products Co. into membership with the National Soybean Processors Association. He even served on some Association committees. The secretary or president of NSPA at the time was Edward J. Dies, an author of agricultural or Wall Street subjects. He wrote several books about soybeans.

In about 1937 Ike had some meetings with a representative of a German company that designed and built solvent extraction plants for soybeans. At that time most of the industry capacity was of the expeller type (or hydraulic in the southern U.S.). A number of larger companies, including ADM in Decatur, were looking at solvent extraction plants. Eventually, after serious consideration, Ike decided against such a plant, apparently for three reasons: (1) He wanted to move to a better climate; (2) Extraction plants required considerable water and sewage usage, neither of which were easily obtainable at the plant site; (3) These plants were very expensive.

Ruth Sinaiko's maiden name was Grebler. Her parents moved from Wisconsin to Springfield to be near Ruth and Ike and for new business opportunities. This made everyone happy. Ike and Ruth adopted a baby girl. "They named her Jean and gave her all their love."

As time passed, the acreage planted to soybeans in the U.S., including Illinois, increased. The country began to come out of the Depression. Irving Rosen, a brother-in-law of Ike's, together with Joe and Alex Sinaiko, bought the soybean plant at Quincy. Max Albert, another brother-in-law, also with Joe Sinaiko's help, bought property at Galesburg, Illinois and made plans for a soybean processing plant.

These plants became successful and this made Ike happy. There were good relations between the various families and many get-togethers. Frequently Ike would take Jasper to these get-togethers. "They all treated me very affectionately. Joe and Ike would advise me of the virtues of working hard and of being honest and of keeping good morals and character. This impressed me very much and had much to do with how I handled myself."

"During this time, along with the rapid expansion of the livestock and poultry feeding there was a big jump in volume of pet food business, especially the dog food business. There was a growing acceptance of dry dog food which

was relatively new in pet feeding. Soybean products were widely used in the manufacture or formulation of 'dry' dog food. Ike got the idea to make a Soya Pea-Sized Cake for use in Dog Food. This product was obtained by a screening process of the Soybean Cake after it left the Cake Crusher in our process. The Pea-Sized Cake was accepted and became a permanent part of the business of the Illinois Soy Products Company."

Ike also made a mixture of molasses with soybean cake for feeding cattle. Then he ordered and installed a "pellet machine" and made "Soybean Meal Pellets" for about a year. But neither of the two products was successful. Note: This is the earliest English-language document seen (June 2018) that contains the term "Soybean Meal Pellets" (regardless of capitalization).

Discusses Hitler's 1938 rise to power in Germany, his oppression of Jews, and the family of Eric Nadel of Hamburg. Eric and his wife came to Springfield and Ike hired him to work in the office. He also later helped Otto Langfelder.

Joe and Ike decided to start a soybean plant in Decatur, Illinois, because of the favorable freight rates and "milling in transit" privileges. Also large amounts of soybeans were grown in the surrounding area. They purchased the vacant Hight Elevator, an old concrete elevator situated on the I.C. railroad in an industrial area, and started Decatur Soy Products Co. It began production at harvest time in 1939. ADM's new solvent extraction plant was not ready until shortly afterwards.

When Germany invaded Poland and Britain [sic], and World War II began, the commodity markets exploded. The war helped the soybean industry to grow, and most processors thrived. Decatur Soy Products was a financial success its first year.

During the 1930s, the U.S. was a net importer of fats and oils. Most of the imports came from Southeast Asia. After the Japanese bombed Pearl Harbor, these imports stopped. The U.S. government took emergency action to increase our supply of oils and fats by a big increase in the planting of soybeans and other oilseeds. Their program included control of the soybean processing industry by the U.S. Commodity Credit Corporation (CCC). After many meetings, a plan was developed which put all soybean processors under contract with CCC. This contract fixed the profit margins of the processors, and controlled the prices processors could pay for soybeans or charge for products. Ike played a role in these negotiations and his views were respected. The profit margin was good and processors, with few exceptions, prospered. Through these meetings and related NSPA meetings Ike became well acquainted with the leaders of the Industry as well as the CCC and he attended many of the meetings where decisions were made. A few of these people were Soybean Johnson of Purina, Gene Funk of Funk Brothers Seed Company, Ed. Sheiter of A.E. Staley

Mfg. Company, Dwayne Andreas of Honeyamead Products, Ralph Goldseth of the Glidden Company, Clive Marshall of Allied Mills, Hank Lloyd of U.S. CCC, Ed Dies of the N.S.P.A. Mr. Shellabarger of The Shellabarger Soybean Processing Company.”

The War created a major expansion in the livestock and poultry industries, and also in the usage of fats and oils, not only in the U.S. but in countries allied with us. Therefore soybean acreage grew rapidly and processing capacity grew with it. Yes despite this expanded capacity, demand for products was greater than supply. Because of the mushrooming demand for feeds, the availability of formula feeds was limited by the feed company’s ability to buy proteins. Soybeans had become the single largest U.S. source of protein for the feed makers. Some processing firms began to hold back on selling proteins to the trade so they could increase their production of feeds, and some even used this advantage to enter the formula feed business. The feed firms that found their protein supplies completely or partially cut off were desperate to obtain supplies. Most of the processors, including Illinois Soy Products Co. and Decatur Soy Products Co. started allocation systems based on the previous year’s usage. New customers could only be given an allocation as the processor’s production expanded.

The leading U.S. grain company and exporter of grains, the Cargill Co., had recently entered the formula feed business. Since Cargill was not a soybean processor and found it difficult to buy enough soybean meal, Cargill decided to buy a going soybean processing business. Joe and Ike often visited and spoke with Julius Hendel of Cargill as well as some others prominent in Cargill’s managing team, and Cargill’s desire for a soybean plant was conveyed to Ike or Joe. After some preliminary talks, a deal was made for Cargill’s purchase of the Illinois Soy Products Company. [in early 1944] The price paid was generous and afforded Ike and the other stockholders a very good capital gain. Cargill agreed to keep Eric Nadel and the other personnel on to help run their new acquisition.

“Following the sale of Illinois Soy Products Company, Ike made plans for moving his family and home to Los Angeles, California.

“Ike did not intend to retire. He scouted around in California for a business to buy or get into. There was an expeller-type soybean plant in Norwalk, California that was owned by The Glidden Company and which was closed-down. It had not operated for a while. Ike and Joe decided they could make a go of this business and they formed The Liberty Vegetable Oil Company, following purchase of the closed plant

“In the beginning Ike processed mostly soybeans and flax at The Liberty Vegetable Oil Company, but as time went along he learned to crush profitably such oil bearing seeds as safflower, copra, and off-grade walnuts and other nuts which were in good supply in Southern California. Later, he put

in a small scale refinery and produced refined oils for the cosmetic trade... This business was a success for Ike from the first year, though it took a good deal of doing on Ike’s part.”

692. Ross & Rowe. 1975? Soybean lecithin (portfolio). Box 1409, Decatur, Illinois. Undated—but probably 1975,

• **Summary:** On the glossy cover of this portfolio is written:

“Soybean Lecithin

Yelkin T®

Yelkin TS®

Yelkin SS®

Yelkin DS®

Yelkin 1018-H®

R&R 551®

Foss & Row, Inc.

On the back cover bottom is the ADM logo inside a map of the world.

“Ross & Rowe, Inc.

“Subsidiary of Archer Daniels Midland Company

“Box 1409, Decatur, Illinois 62525

“Tel: 217/424-5805.”

Inside are many glossy inserts—most printed front and back with photos—explaining the uses and specifications of these different types of lecithin. Lecithin is an emulsifier, wetting and dispersing agent, parting agent, antioxidant, and nutritional source. For example, Yelkin T is a standard plastic (heavy-bodied) lecithin; it is not fluid and not bleached. Much lecithin is sold in food-grade 55-gallon drums. Address: Decatur, Illinois.

693. *Grocer (The) (London)*. 1976. Soya factory. 198(6218):7. Jan. 24.

• **Summary:** “The first ‘soya meat’ factory in Brazil, located at Sapucais do Sul, Rio Grande do Sul, is to commence production in January. It is expected to produce 2,000 tons per month of TVP (texturised vegetable protein). The company which owns the factory—Sarandi S/A Agro-Industria e Comercio—plans in future to export TVP to other countries in Latin America and to Africa, the Middle East and Europe.”

694. deMan, J.M. 1976. Texture-structure relationships in new protein foods. *Cereal Foods World* 21(1):10-13. Jan. [4 ref]

• **Summary:** Contents: Introduction. Spun fibers. Extruded products. Additional techniques (*kori-tofu*). Water sorption characteristics. Textural characteristics.

Photos show: (1) Scanning electron microscopy of spun soy fibers at six magnifications. (2) John M. deMan, with a brief biography. (3) Scanning electron microscopy of TVP. (4) Scanning electron microscopy of *kori-tofu*. (3) Scanning electron microscopy of structured soy protein concentrate. Address: Dep. of Food Science, Univ. of Guelph, Guelph, ONT, Canada.

695. **Product Name:** [Soycomil {Soya Protein Concentrate for Young Animals} (K is a fine powder for calf milk replacer, or P is a coarse powder for pelleted piglet feed)].

**Foreign Name:** Soycomil.

**Manufacturer's Name:** Unimills B.V. Renamed Loders Croklaan B.V. in 1986. Subsidiary of Unilever.

**Manufacturer's Address:** Lindtsedijk 8, 3336 LE Zwijndrecht, Netherlands.

**Date of Introduction:** 1976 January.

**Wt/Vol., Packaging, Price:** 25 kg valve bags and in bulk.

**How Stored:** Shelf stable.

**New Product–Documentation:** Soya Bluebook. 1980. p. 54; 1981. p. 64. This is the earliest listing seen for a soy protein concentrate outside the USA. No brand name is given. Note: This company is owned by Unilever. Soya Bluebook. 1987. p. 72. UniMills B.V., affiliate of Unilever N.V. of Rotterdam, makes Unico and Soycomil Soy Protein Concentrates, at Zwijndrecht. They contain 60.5% protein on a dry basis and come in a variety of particle sizes.

Talk with Carol Velthuis at Michigan State Univ. 1989. Aug. 9. The product, used only as a calf milk replacer, was introduced at least 10 years ago.

Spot in Feed Management (Mt. Morris, Illinois). 1989. Dec. These are two antigen-free soya protein concentrates. "As indigestible carbohydrates present in soybean meal, soya flour, and full fat soya are removed during the process, the digestibility of the protein is considerably improved... Soycomil is an ideal protein for early weaned piglets as diarrhea due to undigested proteins is prevented." The K type is for calves and the P is for piglets; the P is not a textured soy protein concentrate.

SoyaFoods (ASA, Europe). 1990. Spring/Summer. p. 2. Loders Croklaan will expand the capacity of its soy protein concentrate plant by 50% at its sister company, UniMills, in Germany.

Letter (fax) from Aat Visser of Loders Croklaan. 1990. Aug. 6 and Aug. 27. Before Nov. 1971 this company's name was Unimills B.V., based in Wormerveer, Netherlands. In Nov. 1971 Unimills was acquired by Unilever. In 1973 Unimills started to produce soya protein concentrates on a pilot plant scale. In Jan. 1976 Unimills introduced Soycomil K and P, soy protein concentrates for young animals, and Unico. Production was (and still is) at Lindtsedijk 8, 3336 LE Zwijndrecht, Netherlands. In Sept. 1986 the spelling of the name was changed from Unimills to UniMills, and the protein division was transferred to Loders Croklaan, at that time named simply Croklaan. The concentrates and flour are available in various particle sizes and degrees of functionality in 25 kg valve bags and in bulk.

Product brochure sent by Aat Visser. 1990. Aug. "Soycomil–The ideal protein for all young animals." Soycomil is a soya protein concentrate made by a special process and recommended in particular for use in feeds for

young animals. Soycomil K is a fine powder, especially suitable for use in calf milk replacer. Soycomil P is a coarse powder, particularly suitable for pelleted piglet feed. Contents: Description. Manufacture. Quality control. Antigens (Loders Croklaan has developed a manufacturing process which effectively eliminates the soya antigens). Main uses. Product characteristics. Amino acid content. Biological analysis. Packaging/keepability. The advantages of Soycomil (11 are listed). Nutritive value of Soycomil: For veal calves, rearing calves, piglets, and mink.

This product is shown in the ADM Annual Report (Sept. 1992, page 11) as now being made by ADM at Europoort in 25 kg paper sacks.

696. *USDA Farmer Cooperative Service. FCS Research Report.* 1976. Appendix–Companies producing and distributing soy products. No. 33. p. 53-82. Jan. Edible Soy Protein: Operational Aspects of Producing and Marketing. [60 ref]

• **Summary:** Part I. "Companies producing and/or distributing under private label brands of textured vegetable protein products that meet the requirements of FNS Notice 219." (Note: FNS is USDA's Food & Nutrition Service). Lists every known company making such products (as of Sept. 1974), with the company address and the full name of each product. The following companies and brands are listed; (D) = Distributors: Allen Foods (D) Lasco; Archer Daniels Midland Co. TVP; Biggers Bros. (D) Farmbest Promate; Cargill Inc. Textratein; Central Soya Co. Inc. Promosoy, Centex; Continental Coffee Co. (D) Continental; Continental Organization of Distributor Enterprises, Inc. (D) Code Fortified; Embassy Grocery Corp. (D) Lucky Boy Pro-Tenda; Far-Mar-Co, Inc. Ultra-Soy; Federated Foods, Inc. (D) Parade Promate; First Spice Mixing Co., Inc. (D) Texite; Frozen Food Forum, Inc. (D) Frosty Acres; Galanides, Inc. (D) Galanides; General Mills, Inc. Bontrae (Frozen Hydrated or Dehydrated); Griffith Laboratories Griffith's GL-219, Promate, GSVP, GSPC; B. Heller & Co. (D) Heller's; Hollymatic Corp. (D) Hollymatic; Institutional Wholesalers, Inc. (D) Saxony; Lauhoff Grain Co., Inc. Vita-Pro; Marshall Produce Co. (D) Marshall; Miles Laboratories Maxten, Temptein; Nabisco, Inc. VMR I or II; National Institutional Food Distributor Associates, Inc. (D) NIFDA Promate; National Protein Corp. Textrasoy; National School-Pak (D) Promate; Nugget Distributors, Inc. (D) Nugget Promate, Nugget Magi-Pro; Oppenheimer Casing Co. (D) Textured Oppenheimer Pro; Portland Wholesale Grocery Co. (D) Preferred Stock; Ralco Foods SPF-200; Ralston Purina Co. SUPRO; S.E. Rykoff & Co. (D) S.E.R.; John Sexton & Co. (D) Sexton Protein Plus; A.E. Staley Mfg. Co. Food Service Div. Nutra-Mate; A.E. Staley Mfg. Co. Mira-Tex; Swift Edible Oil Co. Swift's Texgran, SFP-TA, Burger-Aide I; Sysco Corp. (D) Sysco and Sysco Promate.

New additions to the list: Custom Food Products, Inc.

(D) CFP; Miles Labs. Pro-Lean; Industrial Grain Products Ltd. Perplus; General Spice, Inc. Sotex.

Part II (p. 70-81). “Companies producing and/or distributing under private label acceptable textured vegetable protein product mixes.” Alberto-Culver Co. Milani; Bernard Food Industries, Inc. Tex-Pro; Biggers Brothers Inc. Farmbest; Continental Organization of Distributor Enterprises CODE; Federated Foods, Inc. Red & White or Parade; Kraft Foods. Kraft School Lunch Chili Mix & Textured Vegetable Protein. Kraft School Lunch Sloppy Joe Mix & Textured Vegetable Protein. Footnote: The textured vegetable protein component of the Kraft mixes is Promate #500-SL or Promate #100-SL manufactured by Griffith Labs. Lawry’s Foods, Inc. Stretch; Milwaukee Seasoning Laboratories, Inc. MSL TVP, Flavormate; National Institutional Food Distributor Associates, Inc. NIFDA; National School Pak; North American Laboratory Co., Inc. Magic Menu; Nugget Distributors, Inc. Nugget; Sysco; Williams Foods, Inc. Williams Expand; The Golden Dipt Co. Golden Dipt/DCA.

Note: The above product mixes are used in the Type A school lunch. Typical mixes are for chili mix, meat loaf or meatballs, patty mix, pizza sauce, sloppy joe, spaghetti sauce, or taco filling. The name of the manufacturer of the textured soy protein ingredient is given for each. Address: Farmer Cooperative Service.

697. Woollen, Anthony. 1976. The secret of solnuts. [A nut analogue from soybeans made by Solnuts BV of Tilburg]. *Food Manufacture (London)* 54(1):55, 57. Jan. [1 ref]

• **Summary:** This “nut analogue from soybeans has tremendous possibilities in bakery and confectionery products.” The plant, very similar to one operating in the USA, was built in Tilburg under the supervision of Mr. Jim Becker and was originally scheduled to come on stream in August 1977. But initial teething troubles delayed the start and it was not until November 1978 that the plant began to produce Solnuts of the quantity required. Now, after an investment approaching £1M, the plant is producing about 1,600 tons/year. When designed capacity is eventually fully utilised, production is expected to be between 8,000 and 10,000 tons/year.

Jim Becker, an American, developed/invented a method of preparing and roasting soya beans. The company director is Mr. F. van der Marel. Several important contracts have been obtained to supply major food manufacturers in Holland, Germany, Switzerland, Austria, Spain, Greece and the UK, including in the last-named Kelloggs and Granose Foods. Holland and Germany are where the company’s main markets are at present. The final composition of the product is: fat 19%, protein 47.4%; carbohydrate 3.7%, fibre 3.6%, ash 3.6%, and moisture 2%. The big advantage of Solnuts over any other soya product is their texture. The first Solnuts became available in the course of 1978.

698. Flier, Ronald J. Assignor to Ralston Purina Company, Inc. (St. Louis, Missouri). 1976. Protein product and method for forming same. *U.S. Patent* 3,940,495. Feb. 24. 10 p. Application filed 17 Jan. 1973. [5 ref]

• **Summary:** “Related U.S. Application Data: Continuation of Serial Number 600,471, Dec. 9, 1966, abandoned, which is a continuation-in-part of Serial Number 381,853, July 10, 1964, abandoned.”

“Abstract: A method of producing an expanded product which resembles meat, directly from soybean meal itself, including the steps of utilizing soybean meal that has substantially all the fat removed to an amount of about 5% or less, and preferably 2% or less, moistening the soybean meal such as mixing the soybean meal with water to obtain a moisture content of about 20%-40% by weight, controlling the pH within the range of 5 to 12, preferably 6 to 9, preferably adding an edible pH altering electrolyte while maintaining the controlled pH, and then simultaneously, mechanically working, heating above 212°F, and pressurizing the moistened soybean meal in an extruder chamber sufficiently to cause continuous conversion of the meal to a flowable substance, and forcing the substance through and out of restricted orifice means to expand it into a lattice network structure having resilience, body strength, and appearance approaching that of meat. 52 claims, 1 drawing figure.”

Note 1. “Abandoned” means that the patent examiner probably gave the inventor a hard time on the patent application so that the inventor abandoned all or part of it.

Note 2. At the time this patent was issued, there was another rather similar U.S. patent (No. 3,488,770) that had been issued to William Atkinson of ADM on 6 Jan. 1970. The Atkinson patent, between 1970 and 1976, and played a major role in making TVP a very widely used product in the USA. However after the Flier patent was issued, a lawsuit and trial determined that the Flier patent dominated the Atkinson patent largely because it could be traced back to 1964. For more details, see the interview with Ed Meyer on 10 May 1993.

Note 3. On 6 Sept. 1989 the United States District Court—Central District of Illinois ruled in a case of Ralston Purina vs. A.E. Staley that patent No. 3,940,495 (the Flier patent) “is held to be unenforceable by virtue of inequitable conduct.” Address: Ladue, Missouri.

699. Weimer, Jon. 1976. Taste preference for hamburger containing textured vegetable protein. *USDA National Food Situation* No. 155. Feb. p. 45-46.

• **Summary:** “Abstract: Taste tests were conducted under controlled laboratory conditions to determine participants’ preferences between a regular hamburger product and three ground beef products which contained textured vegetable protein (tvp). In a test in which participants

were not informed that any of the products contained tvp, no difference in preferences resulted. In a test in which participants had prior knowledge of what products contained tvp, the regular hamburger product was significantly preferred over each of the tvp-blended products.”

“The recent period of high hamburger prices provided an opportunity for a new meat substitute to become established in the food market. This product, textured vegetable protein (tvp), was available at a substantially lower unit price than regular hamburger meat. The tvp can be blended with hamburger, resulting in a mix of animal and vegetable products with a substantially lower cost than regular hamburger. Food retailers could offer the blended product at a lower price than regular hamburger, and it was this feature that was expected to establish tvp in the market.

“However, the blended hamburger could not be advertised and labeled as a regular grade of hamburger. Consequently, food retailers offering the blended product proceeded to devise a variety of names to describe the product and differentiate it from regular hamburger. This factor certainly aided food purchasers in terms of product identification, but it may have negatively influenced their impression of the blended product compared to the regular grades of hamburger.

“A number of factors determine whether a new product will gain acceptance in a market. Two factors considered of importance for blended hamburgers were the consumer preference for the product compared to regular hamburger and the influence of prior knowledge of the product identification on such preference.

“Two experiments were conducted to determine how consumers liked the tvp blended product compared to regular hamburger. In the first experiment, knowledge of the product contents was withheld. In the second, each participant was told which sample contained tvp and which sample was regular hamburger.

“Four products were used in each of the two experiments. One product designated as A was regular ground chuck purchased at a local supermarket. The other three products designated as B, C, and D consisted of ground chuck blended with tvp, and each was purchased locally at a different supermarket.

“Participants in each experiment were employees of the Department of Agriculture. A total of 144 participants divided into two groups of 72 was selected from a group of 400 volunteers. There were 36 men and 36 women in each group, and each group participated in only one experiment.”  
Address: Social Science Analyst, National Economic Analysis Div., Economic Research Service, USDA.

700. Clayton, Hugh. 1976. Vegetable protein: A new ingredient in the British diet. *Times (London)*. March 19. p. 19, cols. 4-8.

• **Summary:** “Students of propaganda will find an interesting

field for study in the debate about the use of textured soya protein where only meat was used before. Farmers and butchers are pursuing a loud campaign against ‘moc meat’ [mock meat] and appear to be winning the argument.”

Representatives of the National Farmers’ Union (NFU) have “spoken darkly about the ‘disquieting reports’ about the long-term effects of using” textured vegetable protein (TVP). “The soya lobby is less vocal but no less influential.” Since 30% TVP is now allowed as a meat extender, some of Britain’s largest meat processors, such as Unilever and Spillers, now sell catering packs of TVP.

The retail market was harder to crack. Nestlé, the first to jump in, “used the prestigious and long-standing Crosse & Blackwell label as a vehicle for a meat extender.” A table shows companies that followed Nestlé’s lead with tinned [canned] products: Cadbury Schweppes (Cadbury’s Soya Choice, canned chunks in beef gravy, 15 oz for 30p. The product contains 6% by weight of beef fat). S. Daniels, a distributor of Danoxa hams, sausages, and tinned stew (Danoxa Kesp Curry, 15¼ oz for 30p. Based upon the Cortauld spun protein product Kesp). Spillers (Tyne, large stewed steak, 43½ p.). Unilever (Walls 15 oz stewed steak with gravy, 46 p.). RHM (Chesswood 15 oz curry with beef, 38p.). Allied Breweries (Appleford, 15 oz meatless steak, 36p.)

Two companies sell canned, precooked beans in sauce: Allied Breweries (Delicia 10 oz soya beans in tomato sauce, 24 p.). Heinz (Heinz 20 oz baked beans in tomato sauce, 19½ p.). Miles Laboratories, which markets TVP in Britain, sells an imitation bacon in the USA. Address: Agricultural correspondent.

701. Garino, David P. 1976. Foreign demand for soy protein is seen tied more to economics than nutrition. *Wall Street Journal*. May 17. p. 28 (East). Or West Coast ed. p. 22.

• **Summary:** “Foreign countries are developing quite an appetite for soy protein.”

A shortage of meat in Poland has led the government to decree that Polish sausage and other meats contain soy protein.

International demand for soy protein is growing faster than U.S. demand say experts in the field.

Although soy protein is being used in an ever increasing number of foods, its main use continues to be as a meat extender and substitute, largely for economic rather than nutritional reasons. It generally takes 2-2½ lb of feed to produce one lb of chicken (live weight), 3½-4 lb of feed for one lb of pork, and 4-5 pounds of feed for one pound of beef—all live weight. So when feed prices rise, as they have in recent years, meat production becomes more costly and soy protein extenders look more attractive. Sales of soy protein isolates climbed 60% last year, following a gain of about 40% in 1974 according to Ralston Purina. In 1976 sales of textured soy flour in Europe are growing at 15-20%

a year. West Germany doesn't permit use of soy protein in meat.

The percentage of disposable income spent on food is 18% in the USA, 25% in Western Europe, more than 25% in Eastern Europe, and about 40% in developing countries. Address: Staff Reporter.

702. Andres, Cal. 1976. 20% textured vegetable protein in meat rolls improves yield, cuts cost: 'Corned beef,' 'pastrami,' 'ham,' beef extended. *Food Processing (Chicago)*. May. p. 82.

• **Summary:** A sidebar titled "Laboratory-pilot plant available for meat formulation work" discusses ADM's new laboratory/pilot plant. Address: Assoc. Editor.

703. *Bank of London & South America Review*. 1976. An 18 million cruzeiro soy protein factory in Araraquara, Brazil, will be built jointly by Nestlé (Switzerland) and Archer Daniels Midland (U.S.). May. p. 266. \*

704. Clayton, Hugh. 1976. Acquiring a taste for meals without meat. *Times (London)*. June 11. p. 8, cols. 4-5.

• **Summary:** The article, written in a negative tone throughout, begins: "If some farmers and butchers had their way, meat-like groceries made from soya beans would be banned from shops and the catering market. They condemn such products as undesirable and possibly unsafe substitutes foisted upon the public by unscrupulous food companies that make them masquerade as meat."

"Soya flour and other derivatives" have long been used in meat products, "but products based on soya and containing little or no meat are new to shops in this country. Here is a guide to some of them:

Name, description, use, price and packaging is given for each. Crosse & Blackwell Mince Savour. Appleford's Meatless Stew, Goulash and Curry. Cadbury's Soya Choice. Danoxa Kesp Curry. Delicia Soya Beans in Tomato Sauce. Meat Extenders Coloured Mince and Coloured Flakes, from A.E. Staley (Decatur, Illinois). Unflavored soya protein supplied by The British Arkady Co. of Old Trafford.

The article concludes: "The great obstacle is flavouring. A mouthful of soya protein flakes tastes very much as this page probably would." So highly-flavoured sauces must be used. "The great advantage" is "that soya beans do not have to be slaughtered before we eat them."

705. ADM–Archer Daniels Midland Co. 1976. The processing of soybeans, corn, barley and flax... (Ad). *Soybean Digest Blue Book*. p. 51. June.

• **Summary:** In the left half of this full-page ad, an illustration shows a rayed sun shining thru several grain plants with large soybean seeds in the foreground. In the right half the text reads: "The milling of soft, hard, and durum wheat. The refining of soybean and other vegetable

oils. Soy protein research and the origination of textured vegetable protein. Production of macaroni, spaghetti and other consumer products. Blending animal feeds.

"Transporting, storing, processing and marketing a seemingly endless variety of products. Archer Daniels Midland Company—processing and marketing basic commodities derived from the Nation's harvest."

Note: This ad also appeared in this 1973 edition of this yearbook (p. 2). Address: Decatur, Illinois 62525.

706. Lachmann, Alfred. 1976. The AID program to utilize LEC's in LDC's. *LEC Report* No. 1. p. 13-17. D.E. Wilson, ed. Low-Cost Extrusion Cookers: International Workshop Proceedings. (Fort Collins, CO: Dep. of Agric. and Chemical Engineering, Colorado State Univ.).

• **Summary:** An excellent early history. "As early as 1971 a search for low-cost extrusion equipment began. One of the extruders selected for further study was the Brady Crop Cooker Model No. 206, manufactured by Koehring Farm Division..."

"Later, in 1973, another low-cost extruder was located which produced flour from full-fat soybeans for use in feed formulations. It was the Insta-Pro extruder, Model 500, manufactured by Triple 'F' Inc. Note: This is the earliest document seen (July 2006) that mentions the "Insta-Pro" extruder.

"As a consequence, experimental work was started to test the capabilities of low-cost extruders for the manufacture of human foods. Samples of experimentally extruded soy flours were tested by Northern Regional Laboratories and ADM for their physical and chemical characteristics and for the destruction of anti-physiological factors. Kansas State University evaluated the soy flours for their suitability as protein fortifiers in the manufacture of bread and found them to be suitable for this purpose..."

"The first testing of a low-cost extrusion cooker outside of the United States took place in India in 1973. In Calcutta at the United Flour Mills, a CARE-purchased Brady Crop Cooker was installed and a test program was started to look into production of foods for Asian CARE-sponsored feeding programs.

"The first AID/USDA-sponsored testing program was initiated in Guatemala. In Guatemala the machine to be tested was loaned to CARE by USDA. CARE in turn selected as its testing organization the Institute of Nutrition of Central America and Panama (INCAP)..."

"In 1974 it became clear that specific problems encountered in utilizing low-cost extrusion cookers required solutions, and that a systematic testing program to evaluate and analyze capabilities of low-cost extrusion equipment should be started. A research contract was signed between Colorado State University and the USDA. The University's Agricultural Engineering Department was given the task of determining the operational characteristics and capability of

cooker-extruders for the production of human foods...

“A year later, USDA signed a research agreement with CSU extending its role in studying low-cost extrusion cookers. In this agreement the Food Science and Nutrition Department and the Agricultural Engineering Department became involved in a new project. The general objectives of this project were to assist selected developing countries in their efforts to supplement or replace foods from international donor agencies with commodities produced locally, and to utilize food technology in related areas to improve diets of their local population...

“Another testing program was initiated at EAIRO in Nairobi, Kenya, where white maize, a special local millet, rice and soybeans were cooked successfully. During the testing program the cooker was utilized to produce enough material of a corn-soy blend to initiate a study on the acceptability of this product as a commercial weaning food in Tanzania.

“A third machine will soon be installed at the Philippine Women’s University...

“In Sri Lanka a cooker has been installed by CARE with auxiliary equipment provided through CSU which performs as a production unit. It is utilized for the cooking of dehulled sorghum to which a small quantity of soybeans has been added...

“In Costa Rica an electrically powered extrusion unit, furnished by CARE, is located at the Pronutre plant and has been used to demonstrate processing of whole soybeans and corn-soy blends.

“In Indonesia, again with CARE’s initiative, the performance of extrusion cookers will be studied at the Institut Pertanian Bogor (IPB).” Address: Nutrition and Agribusiness Group, USDA/ERS.

707. Daftary, Rasik D. Assignor to Archer Daniels Midland Company (Decatur, Illinois). 1976. Process for preparing soy protein concentrate. *U.S. Patent* 3,971,856. July 27. 6 p. Application filed 3 March 1975. [3 ref]

• **Summary:** “Process for preparing a full-fat soy protein concentrate having a bland taste and light color and substantially all of its original protein and fat by subjecting dehulled, cracked soybeans to water at 180°F to 212°F, removing the beans from the water, washing the beans in fresh water, and drying to 8-15% moisture. The product is useful as a human or animal food or it may be subjected to further processing to remove the oil to produce a defatted soy protein concentrate useful in preparing a variety of foods.” Address: Decatur, Illinois.

708. *Food Processing (Chicago)*. 1976. Liquidation: Industrial protein & soybean plant located in Chicago (Ad). July. p. 147.

• **Summary:** Although Central Soya’s name does not appear on this full-page ad, it is in fact announcing the closing of

Central Soya’s soybean plant at 1825 North Laramie Ave., Chicago, Illinois 60639. More than 150 pieces of equipment are listed (without prices) as being for sale. Note: This plant was started by The Glidden Co. The plant and equipment was soon purchased by ADM.

709. Lamm, R. McFall, Jr. 1976. The production of vegetable oil and vegetable oil products in the United States. *Virginia Polytechnic Institute, Department of Agricultural Economics, Research Division Bulletin* No. 118. 41 p. July. [17 ref]

• **Summary:** Contents: List of tables. List of figures. Introduction. The nature of production in the vegetable oil industry: Production of crude soybean oil and meal, production of refined soybean oil, production of cooking oil, production of margarine, production of shortening, production of mayonnaise and salad dressing, a note on concentration and vertical integration in the vegetable oil industry. Summary. Literature consulted.

Consolidation in the soybean crushing industry (p. 8-9): The *Census of Manufacturers* reports periodically on the number of soybean processing plants. This number grew from 26 in 1937, to 47 in 1939, to 133 in 1947. But in the early 1950s the number of plants began to decrease, though individual plants were increasing in size. There were only 117 plants in 1958, dropping to 102 in 1962 and 1967, then to only 94 in 1972.

Shortening (p. 25-26): In the late 1800s a surplus of cottonseed oil developed in the USA as a result of expansion of the cotton industry. It was discovered that this oil could be blended with lard without significantly changing the properties of the lard. The blended product, made mostly by meat packing companies, was called “compound” and was the forerunner of modern shortenings. With the introduction of the hydrogenation process in 1909, hydrogenated vegetable oil (mostly cottonseed oil) quickly replaced “compound” as the preferred type of blended shortening.

Table 2.61 (p. 28) gives statistics on per capita consumption of fats and oils products including cooking oil, margarine, shortening, mayonnaise and salad dressing, butter, and lard each decade from 1910 to 1970. Consumption in margarine increased from 1.6 lb in 1910 to 11.0 lb in 1970. Butter decreased from 18.3 lb in 1910 to 5.3 lb in 1970.

Concentration and vertical integration (p. 35-36): Many products in the vegetable oil industry are produced at processing facilities with several “plants within one plant.” The arrangement reduces transportation and management costs, but it requires that the firm be either vertically or horizontally integrated.

“In the soybean processing industry three of the five largest producers are integrated vertically in the oil products business. These three firms are Central Soya, Anderson-Clayton, and Archer-Daniels-Midland. Central Soya processes crude soybean oil, refines vegetable oil, and has

a subsidiary which produces margarine and mayonnaise. Anderson-Clayton processes crude soybean oil, refines vegetable oil, and produces cooking oil, margarine, shortening, and salad dressings. Archer-Daniels-Midland processes crude soybean oil, refines vegetable oil, and produces cooking oil, margarine, and shortening. Riceland Foods, a farmer's cooperative, although not one of the five largest soybean processors in the soybean processing industry, is probably the single most integrated vegetable oil firm in the country. This company produces soybeans, processes crude soybean oil, refines vegetable oil, and produces cooking oil and shortening." Address: Blacksburg, Virginia.

710. Rosenfield, Daniel. 1976. The changing climate for plant protein foods: 1965-1976. *Cereal Foods World* 21(7):302-03, 305-06, 338. July. [11 ref]

• **Summary:** In the author's opinion, the following are the most important milestones from 1965 to 1976 in the development of a plant protein food industry.

1965—The U.S. Agency for International Development begins to respond seriously to the world's malnutrition problems. Of special importance is its three-volume *Report on the World Food Supply*, by the specially organized President's Science Advisory Committee. It encouraged private U.S. firms to develop commercially viable protein foods for developing countries in three phases: (1) Study the food habits and nutritional needs of a particular area. (2) Product development. (3) Limited market testing. The results of phases 1 and 3 would be available to the public. AID would reimburse the company up to \$60,000 per project. Table 1 shows a listing of 10 projects authorized under the 3-year program. The 5-column table shows: Region or country, company name, date of contract (1967 or 1968), description of product, raw materials.

1966—General Mills' Bac-O's venture. That year the company announced its decision to market nationally, as part of its Bontrae line of meat alternatives made from spun protein fiber, a fried bacon bit analog. By Oct. 1966 Bac-O's were under limited test market in both retail and institutional outlets, and frozen Bontrae was under development (Odell 1967). In the summer of 1969 General Mills gave further proof of the seriousness of their commitment to Bontrae by starting construction of a large soy protein spinning plant in Cedar Falls, Iowa. By Nov. 1969 Bac-O's, still made in a pilot plant, were available nationwide except on the West Coast, and frozen Bontrae in flavors like ham, beef, and chicken was being sold to restaurants, hotels, and other institutions in New York state and adjacent areas. These pioneering moves had a tremendous effect on the thinking of other large food companies indicating, as they did, that the time for the soy protein foods of the future had arrived.

1971—Textured proteins for School Lunch Program. On 22 Feb. 1971 the USDA's Food and Nutrition Service issued

FNS Notice 219 allowing federal reimbursement credit in the School Lunch Program for textured vegetable proteins. In practice, textured soy flour (such as TVP) could be used as an extender for meat, poultry or fish up to 30% on a hydrated basis provided the soy protein ingredients were fortified to meet certain nutritional specifications. Heretofore dry beans and peanut butter had been the only plant proteins allowed as substitutes for animal proteins in the Type A Lunch. The textured soy protein was used primarily as an extender for ground meat. In the 1971-72 school year some 8-9 million lb of TSP were used, yielding three times this much weight of hydrated product at a cost of less than \$0.08 per pound hydrated.

1973—Meat-soy retail market mixtures. By 1973 U.S. meat prices had risen rapidly to all-time highs. In March 1973 Red Owl Retail Food Stores in Minneapolis, Minnesota, introduced Juicy Burger II, a blend of 25% hydrated TSP and 75% ground beef. Soon similar beef-soy blends began to appear under fanciful names such as Burger-Pro, Plus Burger, or Pro/Teen. Advertising stressed lower cost compared with all-beef products and less shrinkage in cooking. In late 1973, at the peak of interest, an estimated 30-40% of all U.S. supermarkets carried beef-soy blends. The new blends retailed for 15-25 cents a pound less than regular hamburger and from May to August 1973 they had captured about 29% of the market share for hamburger. In Sept. 1973 beef prices tumbled. By March 1974 the market share of beef-soy blends had dropped to 20%, then to 10% by Nov. 1975. Yet, as a result, millions of Americans became familiar for the first time with modern soy protein products and accepted them.

1973 Nov.—World Soy Protein Conference is held in Munich, Germany, and attended by over 1,100 delegates from 45 countries. The proceedings are published in the Jan. 1974 edition of the *Journal of the American Oil Chemists' Society*. The importance of the conference is underscored by the participation of U.S. Secretary of Agriculture Earl Butz and U.S. Senators Herbert Humphrey, Carl Curtis, and Walter Huddleston. A high point in the growing acceptance of soy proteins in foods, the conference concluded that more and more of the rising demand for protein foods would have to be met from sources such as soy that were not traditional in the West. The conference in Munich started a tradition and subsequent conferences (with much the same basic message and speakers) were held in Singapore (Jan. 1978), Amsterdam (Oct. 1978), and Acapulco (Nov. 1980).

1974—Miles Laboratories/Worthington introduced a line of meat analogs based on spun soy protein fiber and sold nationally at supermarkets under the Morningstar Farms brand. These sausage-like Breakfast Links and Patties, and ham-like Breakfast Slices represented the first attempt to market soy protein meat analog entrees (not including Bac-O's, a condiment) to mainstream America. These products were first sold commercially in limited

test markets and to the institutional trade in 1972. In the fall of 1975 bacon-like Breakfast Strips were introduced nationally. The company spent \$7.5 million on a nationwide promotion campaign in 1974 featuring prime-time television commercials emphasizing the nutritional angle. About 10 million Americans tried the Morningstar Farms breakfast line in the first 18 months, meeting the company's goal, but fewer people than expected went back for seconds. In 1973 Miles' officials predicted sales of more than \$100 million a year within the decade. But by 1977 sales were running only \$15 million a year, less than half the levels expected at that time, though still indicating a rather favorable consumer response. In 1977 Miles introduced a new improved line of the same products said to be tastier, juicier, and meatier. The marketing focus was narrowed to consumers desiring a protein source free of cholesterol and low in saturated fat. While consumers found the quality of the new line improved, sales remained slow, partially because the new line, priced the same as the old line, was 2-27% more expensive than canned ham, prepared sausage, or bacon. By 1980 the advertising budget had been cut and the products were no longer found in a growing number of supermarkets. Nevertheless the traditional Worthington line continued to be successful and popular among motivated vegetarians.

In short, the edible plant protein revolution has been won. Most nutritionists recommend that Americans eat less meat and saturated fats. Address: Dir. of Nutrition Affairs, Dep. of Nutrition, Miles Laboratories, Inc., Elkhart, Indiana 46514.

711. Rennie, Gary. 1976. Maple Leaf plant construction set for November. *Windsor Star (Essex County, Ontario, Canada)*. Aug. 4. p. 1.

• **Summary:** Construction of the \$37-million Maple Leaf Monarch vegetable oil processing plant will start in November this year, William Milliken, president of the company said today. The \$37 million includes the price of the land. It is scheduled to begin operating in September 1978.

"The plant will be the largest integrated vegetable oil processing plant of its kind in Canada. A 41-acre site in the Morton Industrial Park in Windsor's west end [on the Detroit River waterfront] has been purchased for the plant which is a joint venture of Maple Leaf Mills Ltd. and Lever Brothers Ltd., both of Toronto."

The plant, which will employ about 100 workers permanently, and will process mainly soybeans (both locally grown and imported from the USA) plus some flax, rapeseed and sunflower seeds. With a processing capacity of about 1,400 metric tons per day, it will produce about 41% of the vegetable oils and meals in Eastern Canada.

"Maple Leaf Mills has been active in oil seed processing since 1941 and its vegetable oil division will be the nucleus of the new company. Lever Brothers Ltd.,

through its subsidiary, Monarch Fine Foods Ltd., is a leading manufacturer of edible oils and margarine."

Note: This is the earliest document seen stating that Lever Bros. owns part of Maple Leaf Monarch.

712. *Food Processing (Chicago)*. 1976. 3 protein concentrates now in commercial production. Aug. p. 61.

• **Summary:** The three soy protein concentrates available from ADM are Ardex-700F (flour consistency), Ardex-700G (grits), and Ardex 500 (full-fat soy flour).

713. Andres, Cal. 1976. Soy concentrate rapidly absorbs and retains over 4 times its weight of water: Textured product actually improves on retorting. *Food Processing (Chicago)*. Sept. p. 47-48.

• **Summary:** ADM's soy concentrate line includes flour, grits, and textured products. Textured soy concentrate is a bland-flavored, practically white, retortable, textured protein product. Address: Assoc. Editor.

714. *Family Health*. 1976. Is there a TVP in your future? 8(9):52. Sept.

• **Summary:** Contains 9 recipes using textured vegetable proteins, which you can find in local supermarkets and health food stores. The ingredients include: Sausage-like breakfast links. Bacon-like breakfast strips. Ham-like breakfast slices. Refrigerated cholesterol-free egg substitute. Sausage-like breakfast patties. Vegetable protein patties. Vegetable protein links.

715. Shurtleff, William; Aoyagi, Akiko. 1976. Tofu & Miso America Tour: 29 Sept. 1976 to 3 Feb. 1977 [Itinerary with two maps]. Lafayette, California: New-Age Foods Study Center. Unpublished manuscript.

• **Summary:** On 13 Sept. 1976 the authors bought a large, white 1975 Dodge Tradesman 300 van (used, with 40,000 miles on it). On one side Akiko painted in large, bold letters "Tofu and Miso America Tour 1976-77." Their *Book of Tofu* had been published in December 1975 and *Book of Miso* on 23 Sept. 1976. On Sept. 29 they packed the van full to the ceiling with their books on tofu and miso, plus Larry Needleman's tofu kits—and departed. In the van was an itinerary of hosts and places to which they had been invited and the route drawn on a large map of the USA.

This trip had five main purposes: (1) To introduce tofu and miso to America; (2) To introduce people to the many benefits of a meatless / vegetarian diet; (3) To encourage people to start soyfoods companies, especially tofu shops; (4) To discuss the dangers of human population growth to our small planet; and (5) To promote the authors' newly-published *Book of Tofu* and *Book of Miso*.

This itinerary includes the name and address of 64 people and organizations visited. Many of these were pioneers in the soyfoods and natural foods movements:

## TOFU &amp; MISO AMERICA TOUR 1976-77



Sept. 29–David and Kathleen Sandler, Robert Dolgin, Don Wilson, Farm Food Co. (San Rafael, California; we observed and recorded in detail how Don Wilson made tempeh and tempeh starter / inoculum, and how soymilk ice cream was made at Farm Food Co.). Oct. 1–Petaluma, California. Oct. 2–Josephine County Food Center, Grants Pass, Oregon. Oct. 3. Heliotrope Natural Foods (Salem, OR). Oct. 4–West Bank Cafe (Corvallis, OR). Oct. 5. Visit Linda Shurtleff (McMinville, OR). Visit *Rain Magazine* (Portland, Oregon). They do an interview which is published in their Nov. 1976 issue. Oct. 6. Blake Rankin and Janus Natural Foods (Seattle, Washington). Oct. 7. Janus. Oct. 8–Luke Lukoskie and Sylvia Nogaki of Island Spring (Vashon, Washington). Oct. 10–Jack Grady, a macrobiotic (Spokane, WA). Oct. 13–Univ. of Minnesota. Oct. 14–Georgie Yiannias of Wedge Food Co-op and Ananda Marga (Minneapolis, Minnesota). Our largest class with 300 people. Oct. 15–Barbara (“Bobbie”) Reinhardt Shurtleff dies of colon cancer at Alta Bates Hospital, Berkeley, CA. Oct. 15. Famine Food Co-op (Winona, Minnesota). Oct. 16–Bonnie Maroney of The Wisconsin Farm (Ettrick, WI). Oct. 19–Visit George

Strayer and Larry Krueger of the American Soybean Assoc. (Hudson, Iowa). Visit David and Ann Tucker (Iowa City, Iowa). Oct. 20. Outpost Natural Foods (Milwaukee, WI). Visit Bountiful Bean Co-op. Oct. 21. Visit Dr. Danji Fukushima and Kikkoman Foods (Walworth, Wisconsin). Oct. 22–Visit Drs. Hesseltine, Wang, Wolf, Mustakas, Cowan at Northern Regional Research Center (Peoria, Illinois). Oct. 23–Morning class on commercial production for Les Karplus and 5 people at Vegetarian Incorporated (Urbana, Illinois). Oct. 23-24. Side trip to visit ADM and Staley (Decatur, IL). Oct. 24–Les and Debbie Karplus of Vegetarian Inc. (Urbana, IL). Oct. 25–Visit Dr. L.S. Wei of the Univ. of Illinois Dept. of Food Science (Urbana, Illinois). Evening program for Karplus in Urbana. Oct. 26. Purdue University (Indiana). Oct. 27–Chris Steele (Lansing, Michigan). Oct. 28–Mike Potter and Louis Howie of Eden Foods (4601 Platt Rd., Ann Arbor, Michigan). Oct. 29–Calico Market (Erie, Pennsylvania). Oct. 30–Visit Greg Weaver and Jay Thompson of Rochester Zen Center (Rochester, New York; Later Northern Soy). Visit Genesee Co-op. Oct. 31–Alternative Health Education Center (Rochester).

Nov. 1–Visit Arnold Karmody at Empty Cloud (Canandaigua, New York). Meet Dr. Keith Steinkraus (Geneva, New York). Nov. 2–Visit with Dr. Steinkraus at New York Agric. Exp. Station (Geneva, NY). Lunch together with his wife, Maxine. Nov. 3–Tom MacDonald at Hannibal, New York. Nov. 4–Ira and Kathy Leviton of Corncreek Bakery (South Deerfield, Massachusetts). Visit Laughing Grasshopper tofu shop just before it begins operation. Nov. 5–Fritz Hewitt of Common Ground Restaurant (Brattleboro, Vermont). Visit Tom Timmins of Llama, Toucan & Crow (Brattleboro). Nov. 6. Shep Erhard (Franklin, Maine). Nov. 7–Ann S. Johnson, assistant manager of dining halls, Univ. of Maine (Orono, ME). Nov. 8–Visit Marine Colloids (Rockland, Maine). Nov. 10–Drive to Boston, stay with Nahum & Beverly Stiskin (Brookline). Nov. 13–Tofu & Miso program in Boston. Visit Erewhon Natural Foods (33 Farnsworth St., Boston, Massachusetts), Martha Trundy, Jeffrey & Gretchen Broadbent. Nov. 14–Visit to shops in Boston’s Chinatown. Michio and Aveline Kushi give a big party in our honor at their home at 62 Buckminster Rd., Brookline, then take us out to dinner at the Seventh Inn. Nov. 15–Tofu-making class at a home in Boston. Nov. 17–Visit offices of *East West Journal*. Sherman Goldman conducts long interview, later published in Jan. 1977 issue. Miso-making class at home of Ken Burns. Nov. 18–Visit Joel Wollner in Cape Cod. Nov. 19–Radio show then program for Joel. Nov. 20–Peter Smith at Quaker group in Pennsylvania. Nov. 22–Visit Woods Hole, Massachusetts to study sea vegetables. Evening program at New Bedford, MA. Nov. 23–Stay with Seung Sahn, Sa Nim at Providence, Rhode Island Zen Center. Meditate and show students how to make tofu. Evening at Insight Meditation Center, Barre, MA, a Vipassana center in a former Catholic seminary, co-founded in 1976 by Jack Kornfield, Joseph Goldstein and 3 others. We have dinner, meditate with the sangha, and hear Jack talk about Vipassana. Nov. 24 Sit morning zazen with master and students at Providence zendo. Nov. 25–Thanksgiving. Akiko and I stay alone in a house near Hartford, Connecticut and taste a good tofu pumpkin pie. I read about seaweeds. We take a long walk in the countryside. Nov. 26–Program for Erewhon Natural Foods in Hartford (stay with Maria Orefice, owner of Garden of Eating restaurant in Hartford). Article in *The Hartford Courant* (Dec. 1). Nov. 27–Long River Food Coop in Connecticut. Nov. 28–Stay with Susan and Kirk Gershuny of Snowflower (Tivoli, New York). They plan to make soy ice cream soon. Nov. 29–Drive in deep snow to the New York Farm in Franklin, New York. Stay in a big house they built. Nov. 30–Carl Bethage of the East West Center in Gardiner, New York. Also did a radio program.

1976 Dec. 1–Visit Frances Moore Lappé at her upstairs office in Hudson-on-Hastings, New York. Then visit her large home on the hillside. Dec. 1–5–We missed a program for Annemarie Colbin in New York City (partly because we feared our van would be burglarized on the street) so

we stayed Dec. 1-5 at the luxurious home of Leo S. Nikora (Niki; Bobbie’s friend). I work on writing *The Book of Kudzu*. Dec. 6-7. Program for 40 people (Hosts: Nancy N. Bailey and Robert Rodale) at Rodale Press (Emmaus, Pennsylvania); I am surprised they serve white sugar on their dining tables. Dec. 8–Tim Snyder of Ecology Co-op in Philadelphia. Dec. 9–Stay at home of Sylvia Anderson in Pleasantville, New Jersey and do a program upstairs in a modern university. Study magnificent photos of Native Americans by Edward S. Curtis. Dec. 10–Visit Jay and Freya Dinshah of the North American Vegetarian Society (Malaga, New Jersey); their poor vegan child has bowed legs. Dec. 12–Cindy Blouse in Dallastown, Pennsylvania. Dec. 13–Visit Laurelbrook Foods, a natural foods distributor in Forest Hill, Maryland. We meet Rod and Margie Coates. Dec. 14–Big program hosted by Ella May Stoneburner and Seventh-day Adventists near Washington, DC. Dec. 15–Michael Rossoff (who ran the East West Center in Washington, DC) planned to host a class in a DC church. After we witness a robbery, we are afraid to leave our van on the street. So we do a scaled-down program in the home of Murray and Pam Snyder, which was the East West Center in Baltimore, Maryland. Visit Laurelbrook Foods Warehouse #2 in Durham / Chapel Hill. Dec. 16–Roanoke Food Co-op in Copper Hill, Virginia. Dec. 17-18–John Shuttleworth and Jim Morgans of *Mother Earth News* (Hendersonville, North Carolina). They do a long interview and take photos. Program at night. Note: An audio tape of Bill’s talk at this program is filed with Soyfoods Center documents for 1976. Dec. 19–Chandler Barrett in Atlanta, Georgia.

Dec. 28 & 29–Workshop on tofu and miso at East West Foundation, Coconut Grove, Florida. Not on written schedule, but shown in two published articles. Handwritten trip notes show: “Dec. 27-29. Heartsong, Miami. Bob & Toni Heartsong, 6051 S.W. 46th Terrace, Miami, FL 33155. Was this also related to Mary Pung, who flew from Florida to attend one of the programs on our tour? At the time, she invited us to come to Florida—which was not on our planned route.

Note 1. This is the earliest document seen (May 2019) concerning the work of Ira Leviton or Tom Timmins with soy. One evening, before Shurtleff was scheduled to speak at Leviton’s Corncreek Bakery, Leviton drove Shurtleff to see the Laughing Grasshopper Tofu Shop which was under construction on the second story of an old wooden building in the nearby town of Millers Falls, Massachusetts. Much of the equipment was made out of wood—including wooden curdling vats and a wooden cider press. The company opened in Jan. 1977.

Note 2. This is the earliest document seen (March 2020) concerning Llama, Toucan & Crow in Brattleboro, Vermont.

Note 3. This is the earliest document seen (March 2020) concerning the forerunners of United Natural Foods, Inc. (INFI)—in the form of Llama, Toucan & Crow. Address: 790

Los Palos Manor, Lafayette, California 94549. Phone: 283-3161.

716. Archer Daniels Midland Co. comp. 1976. Edible soy protein seminar, Moscow and Warsaw. Decatur, Illinois. 220 p. 28 cm. No index. [366 ref]

• **Summary:** See next page. Held 13-14 Oct. 1976 at Moscow, USSR and Oct. 18-19 Oct. 1976 at Warsaw, Poland. These seminars, conducted by soy protein manufacturers, were designed to educate eastern Europeans and sell products. Address: Decatur, Illinois.

717. Burket, R.E. 1976. An introduction to edible soy protein. In: Archer Daniels Midland Co., comp. 1976. Edible Soy Protein Seminar. Decatur, Illinois. 220 p. See p. 1-12. Held at Moscow, USSR and Warsaw, Poland.

• **Summary:** A good introduction to modern soy protein products.

A brief biography of Richard E. Burket is given on page 2.

“Born: Sandusky, Ohio, U.S.A., 1928

“Schools: Sandusky High School

“Oberlin College—Bachelor’s Degree—Liberal Arts, 1950

“Military Service: U.S. Army, Armor Branch, 1950-53

“Business Background: 1954-69, Central Soya

Company. Over a fifteen year period, worked in a variety of positions with Central in the areas of edible proteins, soybean processing and merchandising, grain merchandising and other related areas, including extensive work in international marketing.

“In 1967 Mr. Burket led the organization of the Edible Soy Protein Committee [within National Soybean Processors Association] and served as its first Chairman. This organization grew to become the Food Protein Council and he is again serving as Chairman.”

“1969-Present, Archer Daniels Midland Company. Joined ADM in 1969 as a corporate Vice President with responsibilities for the marketing of ADM specialty proteins.

“In 1974 was promoted to Vice President and Assistant to the President with responsibilities for the corporate research, public relations and governmental relations in addition to assigned duties in growth opportunities being investigated by ADM.” Address: Vice President and Asst. to the President, Archer Daniels Midland Co., Decatur, Illinois; and Chairman, Food Protein Council.

718. Cole, Morton S. 1976. Bakery applications for soy protein products. In: Archer Daniels Midland Co., comp. 1976. Edible Soy Protein Seminar. Decatur, Illinois. 220 p. See p. 175-87. Held at Moscow, USSR and Warsaw, Poland.

• **Summary:** Contents: Resumé. Introduction. Types of soy protein products used in bakery goods (soy flours, soy protein concentrates, soy protein isolates, enzyme-active soy flour is a source of lipoxigenase enzyme for bleaching wheat

flour, full-fat soy flour). Nutritional contribution of soy flours to bakery products. Types of bakery products supplemented with soy protein: bread and buns, high-protein breads, cakes, cookies, sweet doughs. Effects of soy flour on processing of bakery products: absorption, oxidation, fermentation (they act as a buffer), mixing and development.

Tables: (1) Functions of soy flours in bakery products. (2) Improvement of wheat flour nutritional value by addition of defatted soy flour (added at 0, 6, or 12% levels). (3) Soy flour in straight dough bread. Address: PhD, Assoc. Director of Research, Archer Daniels Midland Co., Decatur, Illinois.

719. *Times (London)*. 1976. Unilever moves into vegetable protein market. Nov. 16. p. 24, col. 2.

• **Summary:** Although Unilever is the largest food processing group in Britain, both Nestlé and Cadbury Schweppes have entered the British retail market first with “TVP foods made from north American soybeans.”

However in Holland, Unilever has already sold a rissole made from meat and TVP and in West Germany Unilever has a spaghetti sauce containing TVP.

Dr. J.G. Collingwood, Unilever’s director of research, said that in 10-20 years “between 5 and 20 per cent of the meat eaten in Britain might be replaced by vegetable protein.”

720. Archer Daniels Midland Co. 1976. For the world of foods, and foods of the world: ADM soy proteins (Ad). *Soybean Digest*. Nov. p. 76.

• **Summary:** Shows a map of the world with flags at major ADM locations. World headquarters are at Decatur, Illinois, with a plant at Fredonia, Kansas. European headquarters at 222 Ave. Louise B-1050 Brussels, Belgium, with plants at Rotterdam, Netherlands, and Manchester, England. Latin America headquarters is Nestle / ADM at Caixa Postal 632, Campinas 13.100, Sao Paulo, Brazil.

“Development of soy protein ingredients for use in foods for people has been the chief mission of ADM for more than thirty years.” TVP is The Original Textured Vegetable Protein. U.S. Patent 3,488,770. Address: Decatur, Illinois.

721. Koch, Carol. 1976. USSR, Polish seminars foundation for future contracts. *Soybean Digest*. Nov. p. 19.

• **Summary:** “‘Edible soy protein seminars being conducted in Poland and the USSR are just the foundation on which we hope to build a future for soybean market development in these countries,’ according to Dennis Blankenship, ASA director of market development.

“Conducted in late October, Blankenship remarked that these seminars marked the first time American industry could deal directly with prospective Soviet and East European customers on the topic of soy protein foods as a means of meeting world food needs. The seminars were jointly sponsored by ASA, the Food Protein Council and the Foreign

# **EDIBLE SOY PROTEIN SEMINAR**

MOSCOW, U.S.S.R. OCTOBER 13, 14 - 1976

WARSAW, POLAND OCTOBER 18, 19 - 1976



ARCHER DANIELS MIDLAND COMPANY DECATUR, ILLINOIS 62525

Agricultural Service.

“Drawing together expert technicians in the production and application of various soy protein products, the seminars briefed government and institutional feeding officials on the uses soy could have in their nutritional programs. Delegates came from the USSR, Hungary, Poland, Romania, Yugoslavia, East Germany, Czechoslovakia and Bulgaria.

“Among, the speakers at the seminars was Richard Burket, Archer Daniels Midland. According to Burket, ‘As an industry, the edible soy protein industry is rather young.’ But as a food product, it finds uses ranging ‘from basic [soy] flour to the textured products and are used in everything from bakery products to meat and dairy products.’ It looks to be a growing market on an international basis, he contends, because soy protein provides an economic protein source that is versatile. It’s biggest boost came from the U.S. Government when it’s use was approved in school lunch programs thus opening the door to the growing institutional feeding market.

“One portion of the seminar discussed the nutritional aspects of soy protein products; the general manufacturing process plus composition, function and nutritional properties of soy flour and grits; textured soy protein products, and soy concentrates and isolates. Speaking to these topics, respectively, were Dr. Irvin E. Liener, Univ. of Minnesota; Dr. Donald Quass, Dawson Mills, Minnesota; Dr. Bernard Link, Cargill Inc., Minnesota; Dr. L.D. Williams, Central Soya Co., Illinois.

“The second part of each seminar covered the various applications of soy ranging from consumer applications to bakery, meat and whipping applications plus a look at developments that may take place in the future. Chris Edwards, Ralston Purina S.A., Belgium, opened the discussion of soy applications and was followed by Robert Bartz, Nabisco Protein Foods, New Jersey; Dr. Morton S. Cole, Archer Daniels Midland, Illinois; William Readdy, Griffith Laboratories, Illinois; Jaap Van Son, A.E. Staley, The Netherlands; and Sheldon J. Hauck, Food Protein Council, Washington, D.C.

“Addressing both seminars on the future soybean supply prospects and technology available to U.S. soybean farmers were Dick Falb, ASA, and Gerald Michaelson, ASA president from Dawson, Minnesota.

Keynoting the Moscow meeting was U.S. Assistant Secretary of Agriculture Richard Bell, and U.S. Ambassador Richard T. Davies opened the Warsaw conference.

“A special 1-day seminar on soybean meal utilization followed the USSR meeting.

“Following an introduction to participants by Alan Trick, ag attache, Dick Falb, ASA, provided an overview of U.S. soybean production. Then the conferees were given the technical information for application of soybean meal in their livestock and poultry rations.

“Dr. Keith Smith, ASA animal nutritionist, discussed

the production, composition and utilization of soybean meal; and Dr. Park Waldroup, Univ. of Arkansas, delineated current trends in amino acid nutrition.

“Dr. Vaughn Speer, Iowa State Univ., addressed the use of soybean meal and amino acid requirements for pregnancy and lactation in swine. Closing out this special conference was W.W. Cravens, Central Soya, discussing soybean meal usage in U.S. feed.

“With favorable reception of these seminars, both from the soy for human nutrition standpoint and for livestock rations, Blankenship says ASA hopes to be able to expand communication channels between the U.S. and these countries.”

722. *Soybean Digest*. 1976. Fair encourages soy use as food. Nov. p. 30.

• **Summary:** “Foreign diplomats and agricultural attaches attending a special reception on Capitol Hill in September nibbled on Swedish meatballs, ‘terrific tacos,’ Polynesian tidbits and other fancy hors d’oeuvres—all made from soybeans. The buffet, designed to show the wide variety of food uses for soy protein, was a feature of the 1976 International Soybean Fair, which hosted diplomatic representatives from over 70 foreign countries. The fair was the brainchild of Representative Paul Findley (Republican from Illinois), who arranged a similar event in 1972... ASA’s [the American Soybean Association’s] Princess Soya Mary Nell Taylor was hostess for the fair... Findley said the fair’s emphasis was on ‘encouraging the use of soybeans and soy products as food to help feed the protein-deficient peoples of the world.’” A photo shows: USDA Assistant Secretary Richard Bell, Princess Soya Mary Nell Taylor, Representative John Jenrette (Democrat, South Carolina), and Richard Burket of Archer Daniels Midland Co.

723. *SoyaScan Notes*. 1976. Chronology of soybeans, soyfoods and natural foods in the United States 1976 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Feb. KQED-TV in San Francisco, California, airs a 30-minute special titled “Tofu.” It is an interview with William Shurtleff and recipe preparation by Akiko Aoyagi.

March. “The Joys of Soy” by Brenda Bortz, published in *Organic Gardening and Farming* magazine is the first major popular article on tempeh in America. In June, *Prevention* magazine runs a cover story on tempeh.

April. Soybeans: Brazil as a Competitive Force by J.M. Schultz and W.P. Mason submitted as a Harvard Business School MBA thesis. One of the best early in-depth analyses.

April. The second of the new wave of commercial Caucasian-run tofu shops is started by Peter and Judy Beane in Portland, Maine. There were at least 7 small commercial Caucasian-run tofu shops in America by the end of 1976.

May-June. *Mother Earth News* publishes the first of five

long articles on soyfoods, each excerpted from *The Book of Tofu*.

June 2-5. First International Workshop on Low-Cost Extrusion Cookers held at Colorado State University, with 51 participants. Organized by Judson Harper and Richard Jansen, with funding from USAID through USDA. The 173-page proceedings, edited by Wilson and Stumpf, are published shortly thereafter. Cereal-soy blends are seen as having great promise for production in developing countries.

This year cereal-soy blends are first produced in Third World countries using low-cost extrusion cookers: Thripocha in Sri Lanka and Maisoy in Bolivia.

July 20. What is Tofu? pamphlet by Shurtleff and Aoyagi published by Westbrae Natural Foods in Berkeley.

Aug. 6. New-Age Foods Study Center established by Shurtleff and Aoyagi in Lafayette, California. The name was changed to The Soyfoods Center in Sept. 1980.

Aug. The Learning Tree Tofu Kit, America's first widely sold and important tofu kit, is launched by Larry Needleman of Bodega, California, based on designs from *The Book of Tofu*.

Aug. Farm Food Company, a branch of The Farm in Tennessee, opens America's first soy deli, in San Rafael, California. They serve tofu sandwiches, salads, salad dressings, and cheesecakes; tempeh burgers, deep-fried tempeh cutlets, tempeh with creamy tofu topping, and Indonesian delight (tempeh strips); soymilk ice cream, shakes, yogurt, mayonnaise, and whipped creme; soybean stroganoff and burritos; and TVP chili. They essentially launched the concept of second-generation soyfood products—and many of them were made with tempeh.

Sept. 23. *The Book of Miso*, by Shurtleff and Aoyagi published by Autumn Press.

Sept. 29. Shurtleff and Aoyagi begin "Tofu and Miso America Tour." They do 70 public programs nationwide and travel 15,000 miles in their white Dodge van, continuing until 3 Feb. 1977. In the van they carry hundreds of copies of *The Book of Tofu* and *The Book of Miso* and many of Larry Needleman's tofu kits, plus little bags of natural nigari, all of which they sell at their programs. They usually have meals and spend the night with the people who have sponsored and organized their program. They also visit numerous soyfoods producers and researchers, including The Farm in Tennessee from Dec. 21 to Jan. 2. After the tour, tofu shops started in most of the areas where they spoke.

Sept. Dr. Kenneth Bader becomes executive director of the American Soybean Association. With the help of increasing funding from checkoff programs, he ushers in an era of growth, and increased activity and strength for ASA.

Oct. 13-15. Seminars on the use of soy protein for foods and meal for feeds are held in Moscow, sponsored jointly by the U.S. Foreign Agricultural Service, the American Soybean Assoc., and the Food Protein Council. More than 200 Soviet officials attended.

Oct. *The Joy of Soy*, by Sylvia E. Anderson self-published in New Jersey.

Nov. Island Spring starts making tofu in Vashon, Washington. Founded by Luke Lukoskie and Sylvia Nogaki.

Dec. The term "soyfoods" (spelled as one word) is coined by Benjamin Hills of Surata Soyfoods in Eugene, Oregon, for use in their company name. It is first used in a book (*Tofu & Soymilk Production*) by Shurtleff and Aoyagi in July 1979, and as a magazine title in July 1980.

Dec. Morinaga Milk Industry Co. in Japan is granted the world's first patent on a method for manufacturing aseptically packaged tofu (in Tetra Brik cartons), U.S. Patent 4,000,326.

\* Kibun, in Japan, introduces East Asia's first commercial fermented soymilk products, a line of acidophilus soymilk drinks brand-named Soena.

\* Beginning of the rise of the modern soymilk industry in Japan. This is the first year that a significant amount of soymilk was sold.

\* Kikkoman soy sauce passes La Choy to become America's best selling brand of soy sauce. The three major soy sauce markets are consumer retail, restaurants and other institutions, and industrial (for food processors). La Choy may still be the leader in consumer retail; Kikkoman leads in restaurants.

\* Beef consumption in America peaks at 95.4 pounds per capita. It had risen rapidly from 38.6 lb/person in 1930. After 1976 it falls steadily, hitting 75 lb/person in 1985.

\* National Soybean Research Program established in Brazil, building upon the National Soybean Project (1972) and the National Soybean Research Center (1975).

724. Anderson, Sylvia E. 1976. *The joy of soy*. Pleasantville, New Jersey: New Life Press. 48 p. Dec. Illust. Index. 23 cm. Spiral bound. Rev. ed. 1977. Spiral bound.

• **Summary:** Contents: What is the joy of soy. Whole, dry soybeans ("My favorite way to cook whole, dry soybeans is to pressure cook them"). Soymilk. Tofu. Sweet tofu. TVP. Okara. This vegan cookbook was inspired by The Farm, a large spiritual community in Tennessee, where the author and her children lived for several years. "When I arrived on The Farm, I thought I didn't like soybeans... Now I love soybeans and soymilk—not because my tastebuds have changed and I've acquired a new taste for them, but because I've learned new ways to cook soybeans so that they taste good to those same old tastebuds.

"The recipes in 'The Joy of Soy' have been developed through feedback from members of The New Life Co-op (326 S. Main St., Pleasantville, New Jersey), where products made from them have been selling rapidly for the past nine months."

Note: The author's favorite recipes are: (1) Grandma's chickenless soup with Kreplach (and tofu, p. 19). (2) "Cheezy" soybean d'lishes (p. 6). (4) Garden salad d'lishes

(with tofu, p. 21). (5) Pizza d'lishes (with tofu, p. 23). (6) Tofu cookie bars (sweet, p. 26). (7) Tofu cinnamon rolls (sweet, p. 27). (8) Tofu-filled carob cupcakes (sweet, p. 28). (9) Okara soysage (p. 40). (10) Soysage d'lishes (with TVP, p. 37). (11) Okara spice cake (sweet, p. 45). (12) Dairyless macaroni and cheese (with tofu, p. 15). Address: Pleasantville, New Jersey.

**725. Product Name:** TVP/2 Textured Vegetable Protein Concentrate (70% protein) [Flavored, or Unflavored].  
**Manufacturer's Name:** Archer Daniels Midland Co.  
**Manufacturer's Address:** 4666 Faries Parkway, Decatur, IL 62526.

**Date of Introduction:** 1976.

**How Stored:** Shelf stable.

**New Product–Documentation:** Archer Daniels Midland (ADM). 1976. "ADM Foods: Where the people who feed the world buy their groceries." On page 10 we read: "But recently, ADM introduced TVP/2, a second generation textured protein made from soy protein concentrate. This 70% protein made from soy protein concentrate can replace meat entirely in many applications with no loss of appetite appeal."

Archer Daniels Midland (ADM) Annual Report. 1977. "What's new: A 75 year report from Archer Daniels Midland Company." Page 8 states that "in 1965 ADM introduced TVP brand textured vegetable protein. Ten years later we introduced a second generation of TVP containing 70% protein, along with a new soy protein concentrate" [Ardex 700]. The last page states that ADM Protein specialties makes "TVP/2 textured vegetable protein concentrate, flavored and unflavored."

*Soybean Digest Blue Book*. 1978. p. 34. Dick Wallace. 1981. Sept. Letter to William Shurtleff at Soyfoods Center. ADM started producing textured soy protein concentrate in 1977.

**726. Product Name:** Granose Soyapro Wieners. Later renamed Soya Wieners.  
**Manufacturer's Name:** Granose Foods Ltd. (Distributor). Made in Denmark by Nutana.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1976.

**Ingredients:** 1980: Soya protein, vegetable oil, egg albumin, oats, salt, glucose syrup, vegetable stabilizer.

**Wt/Vol., Packaging, Price:** 385 gm can.

**How Stored:** Shelf stable; refrigerate after opening.

**New Product–Documentation:** Manufacturer's catalog. 1980. April. "Soya sausages. Serve as frankfurters. Can be broiled, grilled or fried."

Form filled out and Labels sent by Granose Foods Ltd. 1990. June 13. States that the product, made in Denmark by Nutana, was introduced in 1976. It is now named

Soya Wieners. Can Label. 1990. 9.5 by 4 inches. Photo of the prepared dish, three wieners on a plate with rice and vegetables against a brown background. Vegetarian.  
**Ingredients:** Water, soya bean oil, egg white powder, textured soya protein, tomato puree, onions, soya protein isolate, salt dextrose, spices, soya sauce, oatmeal, guar gum (E412), sodium alginate (E401), hydrolyzed vegetable protein, smoke flavor. Serving suggestion: Heat or roast Soya Wieners and serve with spaghetti or mashed potatoes. Sliced Soya Wieners are delicious in salads. Ideal for lunch and dinner. Dietary analysis available on request.

**727. Product Name:** Granose Soyapro {Canned Slices} [Beef Like, Chicken Like, or Ham Like].

**Manufacturer's Name:** Granose Foods Ltd. (Marketer-Distributor). Made in Denmark by Nutana.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1976.

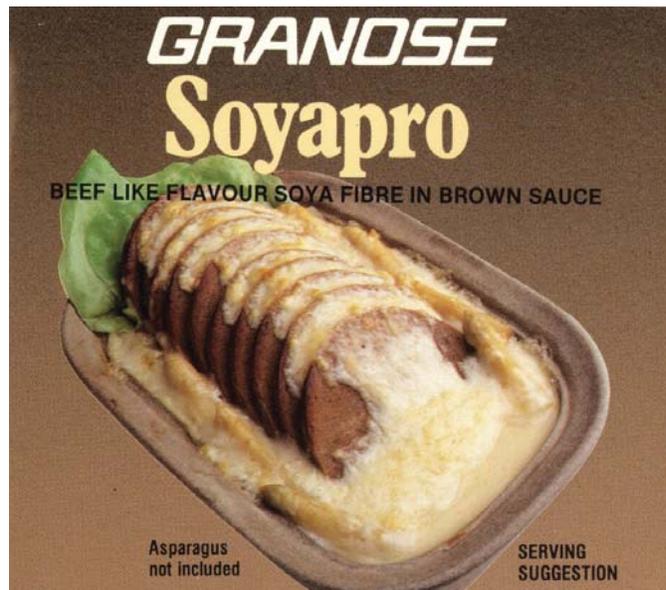
**Ingredients:** 1980: Soya protein, vegetable oil, egg albumen, hydrolysed vegetable protein, salt, flavourings.

**Wt/Vol., Packaging, Price:** 400 gm can.

**How Stored:** Shelf stable; refrigerate after opening.

**New Product–Documentation:** Manufacturer's catalog. 1980. April. "Slices of flavoured soya protein fibre canned in sauce. May be used hot or cold as slices or added in pieces to pies, casseroles, etc. Beef like flavour only contains in addition, wheat protein."

Form filled out and Labels sent by Granose Foods Ltd. 1990. June 13. States that the product was introduced in 1976. Made by Nutana. Subtitle is now, for example, "Chicken Like Flavour Soya Fibre in Brown Sauce." Can Label. 1990. 9.5 by 4 inches. Photo of the prepared dish on a plate with rice and vegetables against a brown background. "Ingredients: Water, textured soya protein, soya bean oil, egg



white powder, starch, hydrolysed vegetable protein, yeast extract, vegetable stock, wheat flour, celery powder, salt, stabilizer. Serving suggestion: Cut into shreds and place in a stew of carrots and peas, sprinkle with parsley, serve with potatoes and a salad. Ideal for lunch and dinner.”

728. **Product Name:** [Fansteco or Fan'steco (Simulated Meat Products)].

**Manufacturer's Name:** Societe Industrielle des Oleagineux (SIO).

**Manufacturer's Address:** Main Office: 30 Rue des Peupliers, 92000 Nanterre, France.

**Date of Introduction:** 1976.

**New Product–Documentation:** B. Julien. 1976. Foreign Agriculture. April 19. p. 6. Soya Bluebook. 1986. p. 92.

729. ADM Foods. 1976. Market news: Special IFT edition. Visit ADM booth 222-223, 317-318. Decatur, Illinois. 27 p. 28 cm.

• **Summary:** A similar report was published in 1976. This one seems to be focused on corn sweeteners or CornSweet™—high fructose corn syrup. James R. Randall is president of ADM. On the inside front cover is this slogan: “ADM: Where the people who feed the world buy their groceries.”

Page 8: “ADM Foods” is mentioned. “ADM, the largest domestic soybean crusher in the United States...”

Page 10: “Food ingredient production in Europe: The continuing increase in demand for proteins in the food and feed industries has prompted ADM's expansion in protein production in Europe. Double digit increases in prices of food stuffs in many European countries has created the need and demand for lower cost high protein foods and food ingredients.

“ADM currently has two plants producing soy protein products in Europe. The British Arkady Co., Ltd. in Manchester, England offers a line of full fat soy flours, defatted soy flours and soy grits, soy concentrate, soy isolates, blends and additives for the bakery industry and a complete line of textured vegetable protein products.

“ADM Netherlands has recently completed a soybean processing plant in Maassluis, Holland. This plant which serves the food industry of continental Europe, is producing a full line of textured vegetable proteins and a complete line of defatted soy flours. Refined soybean oil for the salad oil and margarine industry is also processed at this plant.”

Page 22: In Cedar Rapids, Iowa, ADM has built a new plant and now makes 4 million pounds a day of high fructose corn syrup.

Gary Null (director of the Nutrition Institute of America), writes an article in *Family Circle* magazine (Nov. 1973) ADM summarizes: “Many nutritionists now feel that you need not fear cholesterol if your diet is Lecithin rich.” Address: Box 1470, Decatur, Illinois 62525.

730. Archer Daniels Midland Co. 1976. ADM Foods: Where the people who feed the world buy their groceries. Decatur, Illinois. 17 p. 28 cm.

• **Summary:** ADM supplies basic food ingredients to food processors. This report is designed to show visually (with various captions accompanying 2-page color spreads) the huge scale of ADM's food ingredients operations. Contents: ADM Foods: 10,000,000 acres of it. “The retail value of the foods made with our ingredients exceed \$20 billion in 1975... and that's more than the sales of the top five packaged food companies in the U.S. combined. Our business is food. On a big scale.”

“ADM Foods: Enough high fructose corn sugar to make 50,000,000 12-oz. soft drinks every day.” “Corn sugars and syrups” help to cut costs. “At the world's largest, most efficient corn sugar plant located in the heart of Iowa corn country, ADM Corn Sweeteners can produce 40 tank cars of high fructose syrup a day. Another plant at Decatur will almost double that capacity.” Note 1. High fructose was first introduced in the USA in 1967. ADM soon became a leading manufacturer.

“ADM Foods: Enough bakery flour every day to make more than 300 square miles of bread (and enough margarine to spread on it). ADM Foods: Enough malt to roll our more beer every hour than 50 eight-horse hitches can haul.

“ADM Foods: Enough textured vegetable protein to top a 125 acre pizza daily.

“Textured vegetable proteins have been heralded as the meat, milk and eggs of the future. Well, the future is now! ADM Protein Specialties introduced this economical source of food protein in 1967. Today, more than 500 consumer products in your grocery stores contain our TVP® brand textured vegetable protein. TVP® has also found great acceptance in Europe and many other countries.

“So far, TVP® has been used primarily to extend meats in products such as patties, stews, tacos, pizzas, prepared dinners and casseroles. But recently, ADM introduced TVP®/2, a second generation textured protein made from soy protein concentrate. This 70% protein product can replace meat entirely in many applications, with no loss of appetite appeal.

“Our researchers also have developed luncheon meats, sausages and chops containing between 30% to 50% TVP® that maintain excellent product quality.

“Other products ADM processes from soybeans are helping to feed the world by replacing scarce and costly animal proteins in baked goods, dairy and egg replacers and highly nutritious beverages.”

Note 2. This is the earliest English-language document seen (July 2020) that uses the term “TVP/2” to refer to textured soy protein concentrate.

“ADM Foods: Enough pasta to feed 23,940,000 people every day.”

“ADM Foods: Enough [granulated white] sugar to coat a donut the size of the New Orleans Superdome every 23 minutes.”

“ADM Foods: Enough animal feed to fatten 8 turkeys a year for every American home.” Address: Box 1470, Decatur, Illinois 62525.

731. Banton, O.T. ed. 1976. *History of Macon County [Illinois]*, 1976. Decatur, Illinois: Macon County Historical Society. iv + 555 p. See p. 135-36, 223-25. Illust. Index. 23 cm.

• **Summary:** Pages 135-36: “One of the biggest shifts in farming operations in Macon and other central Illinois counties came with the start-up, on Sept. 30, 1922 by the A.E. Staley Mfg. Co., of one of the first commercial soybean processing facilities in America. Augustus E. Staley. Sr., who for more than 10 years had been convinced that soybean production and processing could become a profitable operation, took a gamble on the venture with his bean plant and started urging farmers of the region to increase their soybean acreage. More than 32,000 acres of beans were raised in Central Illinois in 1922, but prior to that their uses had been limited. The Staley plant produced soybean oil, for which there was a market, and soybean meal, which was far better livestock feed than the whole beans had been. For the first few years the Staley bean plant failed to make a profit, but that soon changed and the plant has been enlarged several times. Bean acreage likewise has expanded almost explosively, until beans have joined corn as a leading farm crop.

“In 1925 Macon County farmers harvested 2,300 acres of beans. By 1935 this had increased to 83,000 acres, yielding 21 bushels per acre, with the crop valued at \$1,185,000. By 1965, some 108,600 acres were harvested, with a yield of 32 bushels per acre. Value of the crop was \$8,814,000. Acreage has continued to increase, and the 1975 record crop was valued at \$25,093,000; the average yield was 39 bushels per acre. Yields of both beans and corn have been materially increased in recent years by farmers cutting down the space between rows—from 40 to 30 inches, which made possible the growing of many more plants per acre. The reason for the earlier 40-inch rows was that 40 inches was needed for a horse to walk between the rows at cultivating time.

“Government support programs, introduced in 1933 to protect farmers against ruinous prices in years of heavy crop yields and make farm income less susceptible to whims of the weather, have been up and down in the last 10 years. During the time of grain surpluses, acreage controls were on wheat and corn. These controls were removed in 1974, and holding acreage out of production has gone by the wayside. Today few control programs remain.”

Pages 223-25: Central Mills at Main St. and Broadway was established in 1855 and produced flour under various

trade names. It was known as Hinkle & Condell when David S. Shellabarger bought into it in 1858.

“Shellabarger had come to Decatur two years earlier from Carlyle, Pennsylvania, where his family had been millers since 1776. Selling his Hinkle firm interest in 1872, Shellabarger with three partners, Isaac Shellabarger, Benjamin Dillehunt and William Bowers, took over a larger mill, the Great Western, at Cerro Gordo and Water Streets. New machinery was installed and larger buildings added. In 1888 David Shellabarger became sole owner and was joined in the business by his three sons. As the wheat belt moved westward the Shellabargers opened flour mills in Kansas, and the Decatur mill centered on corn products. The Shellabarger family continued to be identified with the grain industry in Decatur for nearly a century after David’s arrival in 1856.

“W.H. Suffern moved his elevator to Decatur from Pierson in 1891 and in partnership with Robert I. Hunt formed Suffern, Hunt & Co. A cereal mill built in 1907 produced the first breakfast food corn flakes, which were shipped to Indianapolis and Battle Creek, Michigan, for packaging. The mill, located on the site of the Polar Ice Co., burned in 1909. Pratt Cereal Mill was the first cereal oil mill in the United States. Organized in 1895 by F.M. and R.E. Pratt, who had arrived in 1880, it was the forerunner of the A.E. Staley Mfg. Co. The plant occupied some two blocks along the Wabash tracks on the east side of Decatur. The firm brought in 100 carloads of machinery and erected large storage tanks. Ten carloads of corn were ground daily for an output of 25,000 gallons of oil which was used in soaps, paints and salad oil. Corn starch and animal feed were by-products. In 1902 the Pratt and Shellabarger mills, along with several others in the Midwest, were purchased by American Hominy Co., a trust business centered in Indianapolis [Indiana]. The Decatur units, known as the Wellington Starch Co., were bought by A. E. Staley in 1909 from American Hominy, enabling him to start his starch firm here in 1912.

“Augustus Eugene Staley, Sr., founder and chief executive of the giant soybean and corn processing firm which bears his name, was born on a farm near Julian, North Carolina in 1867. As a farm boy he grew up amid post Civil War privations of a Southern state. He had little schooling and his time was spent in farm chores. Deciding on a job as a traveling salesman at the age of 17 he peddled tobacco to country stores in the Carolinas, Virginia and Tennessee. Later he traveled for an extract firm and for Royal Baking Powder, possibly visiting Decatur.

“After 15 years of selling on the road, Staley settled in Baltimore and entered the starch business in a small way with \$1,500 in capital. He had fancy boxes imprinted ‘Cream Corn Starch,’ and filled them from bulk starch purchased in barrels. He did the packaging at night and the selling by day. The ‘Cream’ designation is still used by the company.

“Though the first years were difficult, Staley’s business began to expand so rapidly that Eastern competitors shut off

his starch supply. He turned to the Corn Belt, looking for factory space to make his own starch. He raised \$600,000 in capital by incorporating and selling stock to his many grocery store friends. A half dozen not too new buildings on 21 acres in Decatur launched the venture in a defunct corn processing plant.

“With World War I halting export business, the Staley plant had to close for 15 months. Staley mortgaged his home, borrowed on his life insurance and went back to his earlier investors who backed him with more dollars. The plant reopened and as business picked up vast expansions were undertaken. A corn syrup refinery began operating in 1920. Seeing great possibilities in the little known soybean brought from Manchuria by missionaries, Staley encouraged Midwestern farmers to grow this grain and in 1922 the company opened the nation’s first [sic] soybean processing plant, pioneering this important ‘money crop’ industry. Prices of soybean oil today are quoted FOB [f.o.b. = free on board] Decatur. One of the most recent additions to the Staley line of corn sweeteners is high fructose syrup used as a sugar substitute in food and soft drink processing.

“The A.E. Staley Mfg. Co. with its international headquarters, research center and principal grain refining facilities located in 137 buildings on a 400-acre site in Decatur has a daily processing capacity of more than 200,000 bushels of corn and soybeans. Employment averages about 3,800 in 15 U.S. plants and 12 sales offices. International activities span the globe and the company has a policy of acquiring at least one small related firm annually. A.E. Staley was frequently described as a man of confidence and vision, and the success of his Decatur venture bears out that description. He was a personal benefactor to numerous local institutions. A monument to Staley, who died in 1940 and was succeeded as company president by A.E. Staley Jr., is a 14-story company office building erected in 1929, a graceful edifice of stone and marble. As an old man looking back on his career, Staley, during an interview at the time he was given an honorary degree by Millikin University, made this comment: ‘My salesmanship built this business.’

“The Staley family has been a benefactor to local institutions. Two of the larger gifts are the Staley Pavilion, a large section of Decatur Memorial Hospital, and the Staley Library at Millikin University, the latter built in 1976. Success of the Staley company in corn and soybean processing brought other companies in the industry to Decatur, and the city earned the title ‘Soybean Capital of the World.’

“Archer-Daniels-Midland Co. which was based in Minneapolis, erected a Decatur plant in 1939 and later acquired soybean plants that had been operated by Spencer-Kellogg, Shellabarger and Ralston Purina. Other divisions moved from Minneapolis to Decatur and in time the entire international office with some 400 employees followed. A textured vegetable protein (TVP) plant and new office

building were constructed. A new \$30 million corn refinery added 300 jobs. Recently acquired by ADM was the Tabor & Co. elevator firm.”

Photos show: (1) Soybean test plot, Dane Brett Farm 1960. Signs show Clark, Shelby, Harosoy and Lindarin soybean varieties, (2) A biplane dusting a field. “Controlling the corn borer was a problem in 1951. This was the beginning of chemical pesticide use on the farm.” (3) “Augustus Eugene Staley from a portrait in the Masonic Temple. Mr. Staley contributed a large sum to the building of the temple.” (4) Staley Co. office building. (5) Aerial view of ADM Decatur East soybean processing plant.

Note: The editor, O.T. Banton, was also editor of the *Herald and Review* (Decatur, Illinois).

732. Batt, Eva. 1976. What’s cooking? A guide to good eating. Revised ed. Enfield, Middlesex, England: The Vegan Society. xxxii + 100 p. Introductions by Gordon Latto, and by Muriel Dowding. Portrait. Index. 21 cm.

• **Summary:** A vegan cookbook, the first edition of which was published in 1973. The author has been a vegan for the past 16 years. She was the secretary of the Vegan Society for 5 years and has been the vice-president for the past 7 years.

The acknowledgements contains a poem which ends with the verse: “Old Mother Hubbard’s sweet smelling cupboard, Has no meat for the doggie to chew; But he’s happy to eat Vegetarian eat, Now she puts TVP in the stew.” Page v. recommends Delice (non-dairy frozen dessert). Page x features a half-page section titled “Soya” focuses on soya flour and recommends the Soyolk brand, which has been heat treated. The section titled “Milk” (p. xv) notes that “The fortified vegetable milks such as Plamil, Granogen and Granolac are useful sources of all of these nutrients [found in cows milk] and a daily glass of one of these is a very good habit. Page xvi discusses Textured Vegetable Protein (TVP) and notes that the brands Vitpro and Protoveg also contain added vitamin B-12 in the unflavoured types. Soyanutta is a vegetable oil product that is praised for being “entirely free of any hydrogenated oils or fats.”

On pages xxix to xxxii is 4-page advertorial titled “Why Plamil?” by Leslie J. Cross [Secretary, The Plantmilk Society, Uxbridge, England]; it talks about the suffering that dairy milk consumption by humans causes to calves and cows, gives a history of the Plantmilk Society (founded in June 1956 in London as a registered charity), the company named Plantmilk Ltd. (founded in 1961), and the production of its first non-dairy milk in 1965 at Langley, Bucks. (It as initially sold under the name Plantmilk, but later for legal reasons the brand was changed to Plamil). In 1972 the plantmilk factory at Langley was closed and moved to Folkestone, Kent—the very town where the idea of making such a milk first crystallized. Plamil, sold in 2 sizes of cans, is now extracted from the soya bean and contains added vitamins, including B-12. “In addition to plantmilk, the

company also makes a non-animal replacement for dairy cream: this is sold in cans under the brand name of Plamil Delice. There is also a chocolate bar—Plamil Chocolate.

Soy-related recipes include: Junket (made with Plamil, p. 62). Frozen fruit nog (made with Granogen). Banana ice cream (with Plamil). Plamil ice cream (p. 63). Vegetable cream cheese (made with Plamil, Granogen, or Velactin, p. 82). Soya cheese (Cheddar style, made with Soyolk soy flour and margarine, p. 82). Soya compote (with Plamil and soya flakes, p. 82). Onion soup (with soya flour, p. 83).

Page 101 is about The Vegan Society, founded in 1944, and located at 47 Highlands Road, Leatherhead, Surrey, England. Mrs. K. Jannaway is Secretary. Address: England.

733. Burket, R.E. 1976. Market potentials for high protein foods and food ingredients from soybeans. In: L.D. Hill, ed. 1976. *World Soybean Research [Conference I: Proceedings]*. Danville, Illinois: Interstate Printers and Publishers, Inc. xvii + 1073 p. See p. 817-19.

• **Summary:** Soy proteins already enjoy large markets in such areas as baked goods and processed meats. Any soy protein product to be used as a food ingredient or to construct a food analog product must have three basic characteristics: It must be able to justify its use on an economic basis and on a functional basis, and it must be accepted by consumers as a quality product.

The prices and protein content of various soy protein products are as follows: Soy flour 10 cents/lb, more than 50% protein. Soy protein concentrates 25-30 cents/lb, approximately 70% protein. Isolate soy protein products 55-60 cents/lb, over 90% protein. Textured soy protein products made from soy flour 16 cents/lb. Textured soy protein concentrates just over 30 cents/lb.

Given that a dry textured soy flour product costs 16 cents/lb, when hydrated with 1½ times its weight in water, it costs only 7 cents/lb; in a wide variety of applications, it can replace commercial meat products costing up to 10 times that price.

Approximately 68% of the protein consumed by Americans is animal protein. The rising prices of animal products and the concern about problems caused by cholesterol began to create an interest in more economic and healthful foods just at the time when makers of edible soy protein products were launching new and improved products.

In Feb. 1971, USDA's Food and Nutrition Service approved the use of textured vegetable protein products as a partial meat replacer in Type A school lunches, signifying that the use of soy proteins had "come of age." It was soon demonstrated that these soy proteins could allow savings of 20-30% of the cost of meat and still maintain product quality [with less fat] and nutrition. Address: President, Protein Specialty Div., Archer Daniels Midland Co., Decatur, Illinois.

734. Horan, F.E. 1976. Use of soy protein for food. In: L.D. Hill, ed. 1976. *World Soybean Research [Conference I: Proceedings]*. Danville, Illinois: Interstate Printers and Publishers, Inc. xvii + 1073 p. See p. 775-88. [19 ref]

• **Summary:** Contents: Introduction. Protein as a nutrient. World supplies of protein. Soybean production. Adequate protein diets. Soy-cereal blends. Textured vegetable products. Soybeans as human food. References. Address: Director of Research, ADM, Decatur, Illinois.

735. Horan, F.E.; Wolff, Hans. 1976. Meat analogs—a supplement. In: Aaron M. Altschul, ed. 1976. *New Protein Foods. Vol. 2. Technology, Part B*. New York: Academic Press. xvii + 324 p. See p. 260-79. Chap. 9. [50 ref]

• **Summary:** Contents: 1. Introduction. 2. Advances in technology: Fiber-containing types, thermoplastic extrusion types, other approaches. 3. Advances in analytical methodology: Analysis of meat-soy protein blends, measurement of texture. 4. Additional information on performance: Meat patties, meat loaves, storage of frozen beef patties containing soy protein, nutrition. 5. Advances in marketing: Areas of application, the future. References. Address: 1. Archer Daniels Midland Co., Decatur, Illinois; 2. A.E. Staley Manufacturing Co., Decatur, IL.

736. Neufeld, Don F. ed. 1976. *Seventh-day Adventist encyclopedia, revised [2nd] ed.* Washington, DC: Review and Herald Publishing Assoc. 1640 p. 25 cm. Commentary Reference Series, Vol. X. First ed. published 1966.

• **Summary:** This indispensable reference work, which is about 10% longer than the original 1966 edition, contains excellent short histories with some updated or additional financial and/or production statistics for the food companies.

A complete list (with city and country) of all SDA food companies is given at "Food companies."

New entries: World Foods Service (1968): "A department of the General Conference whose director coordinates the various phases of the denominational food production and marketing activities throughout the world field. Each division (except North America) has a world food service secretary to further the development of the food ministry within his area of operation.

At the Autumn Council of 1967 a health food department at the General Conference level was created. At the Autumn Council of 1968 this department was named World Foods Service.

"Secretary (until 1974) and Director: E.W. Howse, 1969- ." Address: Washington, DC.

737. Neufeld, Don F.; et al. ed. 1976. *Seventh-day Adventist encyclopedia, 2nd ed.:* Granose Foods Limited (British Health Food Factory). Washington, DC: Review and Herald Publishing Assoc. 1640 p. See p. 527-28. Or. p. 624.

• **Summary:** "A health-food factory situated in Stanborough

Park, Watford, Hertfordshire, England, manufacturing several varieties of vegetarian protein foods and breakfast cereal biscuits, one of the latter being called Sunny Bisk. In 1973 business volume totaled £400,000, made possible by updating the processes with modern machinery.

“The SDA [Seventh-day Adventist] health food work in Great Britain was begun by a group of laymen who, under the name The London Health Food Company, purchased health foods from Dr. J.H. Kellogg, of Battle Creek, Michigan, and distributed them to the public. After a few years SDA leaders in Great Britain sent J. Heide, a master baker, to Battle Creek to learn how to make the foods. In 1899 a manufacturing company was formed under the name The International Health Association Limited, changed in 1926 to Granose Foods Limited. The company purchased a flour mill in Salford, near Redhill, Surrey, to serve as the factory... A fire burned the factory to the ground in 1900. Health foods were again temporarily imported from America, but gifts and loans from SDA’s re-established the company in Birmingham.

“In 1907 all SDA institutions in England, including the food factory, were centralized at Stanborough Park, Watford. The factory has grown until in 1973 it had a floor space of approximately 44,000 square feet, and still further extensions were planned.” Address: Washington, DC.

738. Roberts, Anna; Fevre, Jean Le. 1976. *The earth shall feed us: Cooking for the New Age using textured vegetable proteins instead of meat.* Copse House, Greatham, Liss, Hampshire, England: Published by the authors. 84 p. Illust. by Joanna Hicks. Recipe index. 20 cm.

• **Summary:** Contents: Foreword by Peter Roberts, NDA, NCA (Greatham). Notes and guidance. Editorial/biographies. Protoveg hydration times, abbreviations, measures. Analysis of Natural Protoveg, and Ranch House Foods Vegetable Stew, Vegetable Bolognese, Vegetable Curry, Vegetable Mince, and Vegetable Goulash. Recipes: Snacks ‘n starters. Supers ‘n suppers. Sweet indulgences.

All the recipes in this book (with the exception of the last section) are based on Protoveg and Ranch House Foods brands of textured vegetable proteins sold by Direct Foods Ltd. This is a vegetarian cookbook; dairy products (milk, cream cheese, double cream, evaporated milk, whipped cream, cheese, cottage cheese, butter) and Free Range eggs are included in some recipes. Photos (p. 11) show Anna Roberts and Jean Le Fevre (both authors are women), accompanied by brief biographies.

The Foreword begins: “It was during our years at Little Barnett Farm in the Hampshire village of Froxfield, when Anna and I suddenly realised, with something of a shock, the depth of that unfaltering, absolute trust which our farm animals put in us. It was a trust that in the end we knew we could not honour unless we were to turn the farm into a sanctuary, for farm animals are bred to make a living for

the farmer—in our case via their milk—and when they can no longer contribute, they must die, and the farmer must look away. In the eighth year at Little Barnett we knew we could look away no longer. It seems hard and it is hard that farming should be like this, yet it has been so for thousands of years ever since our ancestors first employed animals to convert the fibrous grasses into meat and milk. In the main, the farm animals have benefited from their association with man—that is, while they were allowed to orientate to the natural world and while farming was a way of life. The age of technology came and relentlessly pressed the animal deeper and deeper into the production-line until exploitation took over from husbandry...

“Finally, it is the health of the consumer that is the crux of the matter, and rightly so. Serious reservations arise concerning the health-risk of factory farm products due to the build-up of disease in intensive animal units and the antibiotics, growth promoters and hormones used.”

Note: See also the Wikipedia entry for “Peter Roberts (activist).” He is best known for having founded (with his wife, Anna) Compassion in World Farming, for which he was awarded an MBE in 2002. Address: Hampshire, England.

739. Zonta Club of Decatur. 1976. A.E. Staley Manufacturing Company, 2200 East Eldorado Street, 1929-1930. In: 1976. *Places & People in Decatur 1900-1929.* Decatur, Illinois. 128 p. See p. 124-127. Illust. No index. 23 cm.

• **Summary:** The “1929-30” in the title means that this book deals with structures built in Decatur between 1929 and 1930. The mission of Zonta Clubs ([www.zonta.org](http://www.zonta.org)) is advancing the status of women and girls. This book was written by Helen Beeson, Charlotte Meyer, Margaret Meyer, and Ruby Mochel. It was produced as part of the “American Revolution Bicentennial Celebration.”

“The beginning of the Staley Company dates back to the ‘gay nineties’—back to 1897 when a young man with only \$1500 in his pocket set out to make his fortune. This man was Mr. A.E. Staley, founder of the company that bears his name today. The rise of the company from a one-man concern to a multi-million dollar business is due largely to his initiative, courage and keen foresight.

“The story of Mr. Staley’s life and the development of his industry is a saga of American opportunity. Starting out as a poor farm boy in North Carolina, he left home at age seventeen. His first job was as a railroad section hand. But his ambition was to be a salesman and for fifteen years he traveled selling tobacco, groceries, flavoring extracts and baking powder. Part of his territory was Decatur, but at that time it is doubtful that he had any idea of making this his home.

“But selling on the road didn’t appeal to him as a life’s work. He wanted to settle down, hopefully with an income

of \$4000 a year. He settled in Baltimore, rented a small room for \$200 a year and began to pack starch which he bought in bulk. He called his product Cream Corn Starch. Mr. Staley stated that he nearly starved the first two years, sometimes making only \$15 to \$50 a month and having to hock his watch to meet expenses. But things changed and the third year his income improved and continued to go up from then on.

“In 1909 he learned of the financial difficulties of the Wellington Company in Decatur (formerly the Pratt Cereal Mills) which had been operating a starch plant. He came to Decatur, looked the situation over, bought the plant and by 1912 had it remodeled and reopened for business. This was the first unit in the Staley company of today and a big venture at that time.

“The company prospered and in 1919 corn syrup was added to its line. Staley was a pioneer in the soy bean industry. Their initial plant built in 1922 made them among the first industries in the nation to process soy beans. It was under Mr. Staley’s guiding hand that farmers were informed of the merits of growing the then little known soy bean and that helped to develop it into one of the nation’s major crops.

“In 1974 the field of corn sweeteners came into the limelight due to soaring sugar prices. New methods which generated an entirely new corn sweetener—high fructose syrup—were developed. At this time there are several domestic producers of this syrup of which the Staley Company is one. Leading markets for the product are food processors and soft drink bottlers.

“As the business grew, more and more buildings were erected. Today the original buildings are gone and a maze of 137 towering structures comprise the three-hundred acre Staley complex. Though its products are diversified today, the company is still basically involved in two major endeavors, corn refining and soy bean processing with 85¢ of its sales dollar derived from these sources. The industry which began with about two hundred employees now has over 3700 men and women engaged in producing and marketing its several hundred different products, has plants in ten states in the nation and operations in a number of European countries, Canada and Mexico.

“One of Mr. Staley’s dreams was to erect a building which would be a tribute to the loyalty and trust of his employees and customers. The million-dollar Staley Administration Building erected in 1929-30 was the fulfillment of that dream. This building which houses the administrative and clerical personnel stands in a landscaped five-acre park. It is fourteen-stories high with Indiana limestone facing it and is topped by a two hundred seventeen foot tower with a revolving beacon which can be seen for twenty miles. Architects for the building were Aschauer and Waggoner of Decatur. The J.L. Simmons Company was the general contractor.

“The foundation course of stone and the entrance

steps of granite are from Mt. Airy, North Carolina near Mr. Staley’s boyhood home. An elaborate system of two hundred floodlighting projectors and copper reflectors with red, blue and amber lenses furnished colored lighting and made the building stand out at night. Because of the national effort to conserve energy, this lighting has been discontinued in the past few years, however, in the earlier years it was a common summer evening pastime for families to park their cars where they could enjoy the many changing color combinations that played upon the beautiful tower. Regular passengers on Wabash trains watched for the view of the lovely building, but especially so if the lights were on.

“The building’s main entrance has lofty arched doorways with revolving bronze doors. The spacious lobby has a high ceiling of gold, blue and walnut and an interesting floor design. Walls of Roman lava rock, high-arched windows with velvet draperies and balcony arches with bronze grill work give an impressive but warm welcome to the visitor. Elevator doors have pictorial etchings in bronze and are framed in black marble. Light fixtures feature a special corn motif. Since redecorating a few years ago, lobby draperies are of gold with rugs and other furnishings in soft autumn colors.

“Executive offices are beautifully furnished but chosen so that each one maintains its individuality. Rugs from China and desk appointments from Tiffany’s are probably the most elaborate of any office building in Illinois. The executive dining room with its massive oak furnishings gives an appearance of quiet elegance. The cafeteria for administrative and clerical personnel has gay red tables and walls with interesting murals appropriately dealing with corn cultivation as begun by the American Indians.

“But beautiful furnishings are not confined to the lobby or executive quarters alone. Throughout the entire building, furnishings are carried out in keeping with the intent of the building, and have equipment that is efficient, functional and attractive.

“It was Decatur’s good fortune that Mr. Staley liked our city. Not only was his company a big industrial addition, but he was instrumental in a number of activities for the betterment of the community. It was the urgent need of the Staley Company for a more adequate water supply that brought plans for the present lake to a head. While waiting for the big impounding dam and lake to be constructed, Staleys built a temporary dam in 1920 where the Staley Bridge is now located. It was removed in 1922.

“It was largely through Mr. Staley’s financial help that the Masonic Temple was built. He was interested in Decatur’s social agencies and a generous contributor to the Community Chest (now United Fund) and to the Decatur and Macon County Hospital. In recent years environmental control activities have received high priority as part of the company’s responsibility to society.

“No history of the Staley Company would be complete

without mention of the company-sponsored athletic teams. Mr. Staley and his general superintendent, Mr. G.E. Chamberlain were both avid sports fans. In 1917 a baseball team was formed sponsored by the Staley Fellowship Club, which by the early 1920's was rated one of the top industrial teams in the country. 'Iron Man' Joe McGinnity was the manager and Charlie Dressen a player.

"In 1920 Mr. Staley hired George Halas who had been a standout athlete at the University of Illinois, to upgrade the company football team. He did this, lining up a team including top college stars from other areas. Ranny Young and Kile MacWherter from Millikin and a few of the 1917 Decatur players, among them Charlie Dressen and Jack Mintun. The Staley Starchmakers had much success but there was a question as to whether Decatur was large enough to support a professional football team. By the end of 1921 Mr. Staley withdrew his company's sponsorship and backed by a \$5000 contribution and his best wishes, the team moved to Chicago" (Continued). Address: Decatur, Illinois.

740. Zonta Club of Decatur. 1976. A.E. Staley Manufacturing Company, 2200 East Eldorado Street, 1929-1930 (Continued–Document part II). In: 1976. Places & People in Decatur, 1900-1929. Decatur, Illinois. 128 p. See p. 124-127.

• **Summary:** (Continued): "They continued to play under the Staley name until 1922 when they were christened the Chicago Bears. While Mr. Halas deserved all the credit heaped upon him, he was the first to say that without Mr. Staley and his company, there might not be a Chicago Bears team today..."

"Although Mr. Staley's formal education consisted of a few years at a small country school, he was the recipient of two honorary degrees which were among his prized possessions. In 1940 he was awarded an honorary doctor of science degree by Millikin University in recognition of his many contributions to Decatur. A doctor of laws degree was given him the previous year by High Point College, High Point, North Carolina.

"Mr. Staley's many friends and employees knew him as an amiable man, jovial and unpretentious usually with a red rose in his buttonhole. Above all he was a good citizen and a gracious gentleman. He was president of the Staley Company from its founding until 1932 when he was succeeded by his son, A.E. Staley Jr. He died in his winter home in Florida in 1940 at the age of seventy-three.

"Mr. A.E. Staley, Jr. was the company president from 1932 until 1958. He died March 19, 1975. Mr. E.K. Scheiter served as president of the company from 1958 until 1965. Mr. Donald E. Nordlund is presently the company's chairman and chief executive officer."

Photos show: (1) First Staley office building. (2) The present towering Staley administrative and office build [the Castle in the cornfields]. (3) The main entrance to the latter

building, showing the ceiling and floor design.

Note: The section on the Masonic Temple (p. 120-23) gives a brief history of the temple and its "applied modern art decoration." It was dedicated in Feb. 1929, only a matter of months before the great financial crash occurred. A portrait of A.E. Staley hangs in the temple; "the portrait was in part a memorial to Mr. Staley for his support of the building of the temple." Mr. Harry I. Kline is credited with saving the temple from foreclosure after the crash. Address: Decatur, Illinois.

741. ADM–Archer Daniels Midland Co. 1976? ADM TVP: The original textured vegetable protein. Decatur, IL 62525. 19 inserts. Undated. 23 x 15 cm.

• **Summary:** See next page. Nine of the inserts in this portfolio are data cards about TVP and 10 are bulk recipes for extending meat (such as beef patties or Sloppy Joes). Address: Box 1470, Decatur, Illinois 62525. Phone: 217 / 423-2571.

742. Food Protein Council. 1976? The protein power of soybeans. Washington, DC. 8 p. Undated. Distributed by ADM.

• **Summary:** See page after next. Contents: Protein power. Nutrition. Availability. Built-in benefits. Approved by school lunch. Acclaimed by experts. Satisfied users (four testimonials). Processing. Soy flour or grits. Soy protein concentrate (incl. granular soy protein concentrate). Isolated soy protein. Textured soy protein: Extruded soy protein (soy flour), spun soy protein (fibers). Future of soy protein. Address: 111 East Wacker Drive, Chicago, Illinois 60601.

743. Wilson, Barry. 1977. Soya meat on the threshold of a boom. *Agra Europe (London)* No. 706. p. M/3-M/8. Jan. 7.

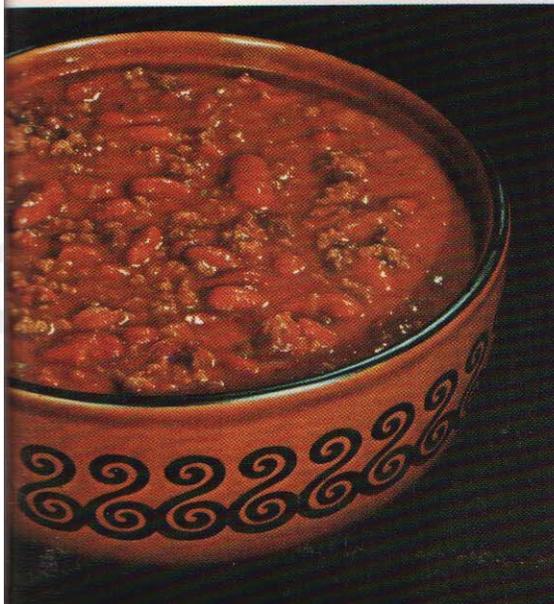
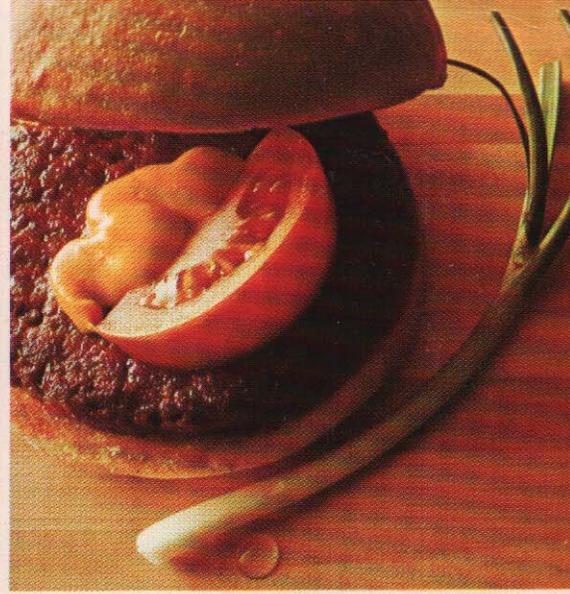
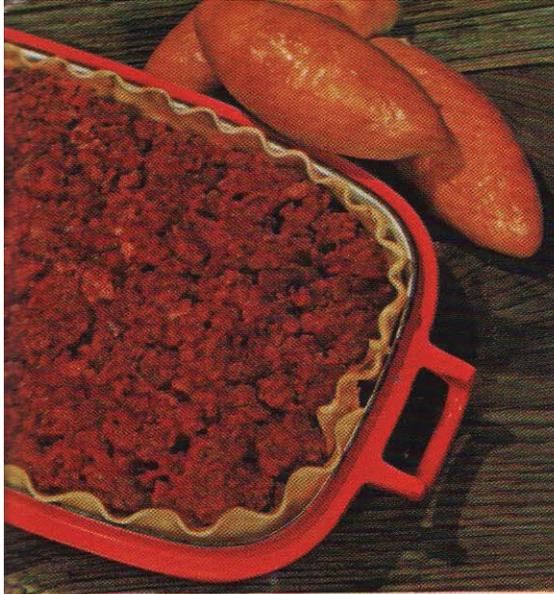
• **Summary:** By "soya meat" or "vegetable meat" the writer means "TVP (textured vegetable protein)" which is actually textured soy flour (defatted). A good history of TVP in Britain and Europe; it was launched in Britain three years ago at a time when the UK and most of western Europe was beginning an unprecedented beef glut. With beef prices low, TVP struggled.

During the second half of 1976 TVP sales began to increase and they are expected to increase even faster in 1977.

The launch of Kesp (a spun soy protein product) by Courtaulds in 1973 was a fiasco.

Manufacturers of TVP in the UK include: (1) British Arkady, Old Trafford, Manchester. (2) Spillers (Lucas & Co.), Kingswood, Bristol. (3) British Soya Products, Puckeridge, Herts. [Hertfordshire]. (4) Courtaulds, Kesp Protein Foods, Coventry. (5) GMB Proteins, Blackhorse Lane, London. (6) Miles Laboratories, Slough, Bucks.

The names of six distributors and five users are also given.



**tvp**<sup>®</sup>  
The Original  
TEXTURED  
VEGETABLE PROTEIN

® REGISTERED TRADEMARK



“There is no doubt that British Arkady has the lion’s share of the British TVP human consumption market.” The best guess is that British Arkady now has about 40-50% of the UK market, followed by Spillers, then British Soya Products.

It is clear that all the raw material for the TVP [defatted soy flour] sold in the UK is imported from the United States. Briefly describes five commercial products that are on the market. Address: London.

744. *Windsor Star (Essex County, Ontario, Canada)*. 1977. April building start for Maple Leaf plant. Feb. 11.

• **Summary:** “Construction of Maple Leaf Mills’ \$37 million soybean crushing and processing plant could start in April but some delays are holding up a separate project for federal grain elevators. Mayor Bert Weeks said today.”

745. *Minneapolis Star (Minnesota)*. 1977. Hayward. Feb. 26.

p. 17, col. 1.

• **Summary:** “Dr. James W., age 78, of Hopkins Nursing Home, formerly of 4545 Valley View Road, Edina. Survived by wife, Maude; daughters, Mrs. John (Mary) Huff, Medina, Mrs. Andrew (Barbara) Slater, New Richmond, Wisconsin; son John, New Brighton; nephew, Harold S. Keefe, Minneapolis; 14 grandchildren. Services Monday 10:30 am Werness Brothers, Chapel, West 50th St. & Beard Ave. S. Interment Sunset Memorial Park. Friends may call at Chapel Sunday, beginning 4 pm. If so desired memorials may be given to Mayflower Congregational Church or School of Public Health, Heart Disease Prevention Program, Univ. of Minnesota, 55455.”

746. **Product Name:** Itona T.V.P. Food Mix: Tonabanga Sausage Style (Meatless Sausage Mix).

**Manufacturer’s Name:** Itona Products Ltd.

**Manufacturer’s Address:** Itona Works, Leyland Mill Lane, Wigan, Lancashire, WN1 2SB, England.

**Date of Introduction:** 1977 February.

**Ingredients:** TVP, vegetable fat, rusk, binder, salt, dextrose, spices, permitted coloring, vitamins and minerals.

**New Product–Documentation:** Ad in *New Vegetarian* magazine (UK). 1977. Feb. p. 26. A full-page ad. “Banga or Burga? Itona do both! Tonabanga and Tonaburga.”

“Tonabanga is an exciting new TVP Food Mix from Itona. Made from textured vegetable protein (without Monosodium Glutamate) and flavoured specially with selected spices it is a completely vegetarian replacement for sausages and sausage meat.” A photo shows a woman holding up a meatless burger in a bun and a sausage (banga) on a fork.

Ad in *Alive* magazine (UK). 1978. May. p. 2. “Banga or Burga? Itona do both! Tonabanga and Tonaburga.”

“Tonabanga is an exciting new TVP Food Mix from Itona. Made from textured vegetable protein (without Monosodium Glutamate) and flavoured specially with selected spices it is a completely vegetarian replacement for sausages and sausage meat.” A photo shows a woman holding up a meatless burger in a bun and a sausage (banga) on a fork.

Itona Products Ltd. retail price list. 1980-81. Add water, allow to stand for 10 minutes. Shape, grill or fry.

747. **Product Name:** Itona T.V.P. Food Mix: Tonaburga Sausage Style (Meatless Burger Mix).

**Manufacturer’s Name:** Itona Products Ltd.

**Manufacturer’s Address:** Itona Works, Leyland Mill Lane, Wigan, Lancashire, WN1 2SB, England.

**Date of Introduction:** 1977 February.

**Ingredients:** TVP, vegetable fat, rusk, binder, salt, dextrose, spices, permitted coloring, vitamins and minerals.

**Wt/Vol., Packaging, Price:** Each pack makes 1 lb.

**New Product–Documentation:** Ad in *New Vegetarian* magazine (UK). 1977. Feb. p. 26. A full-page ad. “Banga or Burga? Itona do both! Tonabanga and Tonaburga.”

“Tonabanga is an exciting new TVP Food Mix from Itona. Made from textured vegetable protein (without Monosodium Glutamate) and flavoured specially with selected spices it is a completely vegetarian replacement for sausages and sausage meat.” A photo shows a woman holding up a meatless burger in a bun and a sausage (banga) on a fork.

Ad in *Alive* magazine (UK). 1978. May. p. 2. Itona Products Ltd. retail price list. 1980-81. Add water, allow to stand for 10 minutes. Shape, grill or fry.

748. *Soybean Digest*. 1977. Soy meat makes new inroads in U.K. and parts of Europe. Feb. p. 45.

• **Summary:** “Sales of soy meat, or textured vegetable protein (TVP), are making new inroads in the United Kingdom (U.K.) and parts of Europe with U.K. sales growing 30% in the last quarter of 1976 and a further increase of 50% expected in 1977 and 1978. TVP use has been boosted as red meat prices surged late last year. Further consumption may be encouraged by expanded school lunch programs in view of government expenditure cuts in the U.K. and new official rules on the use of TVP. It was noted that the meat market situation has changed since TVP hit the European market 3 years ago. At that time beef prices were low and the market glutted with red meat.”

749. Associated Press (AP). 1977. A note for the future: cup of soybean coffee? *Detroit News*. March 18. p. C-5, col. 3.

• **Summary:** As the price of coffee soars to near \$5 per pound, Archer Daniels Midland Co. (ADM, Decatur, Illinois), a major soybean processor, announced yesterday that it is “resuming research on using soy products as a substitute or extender for coffee.” Soybeans now cost about \$0.13 per pound (\$8/bushel).

750. *J. of the American Oil Chemists’ Society*. 1977. Continuous solvent extraction... The early beginnings of a giant industry. 54(3):202A-204A. March.

• **Summary:** The origins of solvent extraction: On 13 Nov. 1855 a patent to extract fat from bones and wool using carbon bisulphide was issued in France to E. Deiss. On 3 Dec. 1856 additional patents were issued to the same inventor covering extraction of oil from oil-bearing seeds.

In the USA a batch solvent extraction plant at Southport Mills, New Orleans, Louisiana, ran in 1917-1919 on aviation-type gasoline and later on benzene to remove oil from cottonseed cake, copra, palm kernel, and other oleaginous material. The experiment ended when business conditions returned to normal in the USA after World War I.

The origins of continuous solvent extraction are integrally linked with soybeans, largely because soybeans contain less oil than most oilseeds. “The end of World War I left Germany with a shortage of fats and oils as well as animal feedstuffs. The Germans began to seek better ways to get the most out of their imported Manchurian soybeans.

Two continuous solvent extractors using countercurrent principles were developed. The Bollman [Bollmann], or basket, extractor, was patented in Germany in 1919 and 1920; the Hildebrandt, or U-tube, extractor, was patented in 1934.

“Solvent extraction also was being tried in the United States. In Monticello, Illinois, the Piatt County Soybean Cooperative Company operated a batch plant in 1923-24; Eastern Cotton Oil Company operated a Bollman extractor from Germany, at Norfolk, Virginia, in 1924-25. Both ventures proved unprofitable.”

“Proscio Oil Co. in Norfolk, Virginia, ran a solvent extraction operation for several years in the 1920s. A relatively small quantity of soybeans was processed. “Most early efforts at solvent extraction failed at least partially because of a lack of sufficient volume of soybeans.

“The best publicized effort in the United States was part of Henry Ford’s soybean research plant at the Edison Institute (see accompanying article). Ford perceived farmers as his prime customers for his Model T automobile and decided if he wanted farmers for customers, he would have to find a new way for industry to become a customer for farmers.

“ADM and Glidden initiated large-scale solvent extraction of soybeans (in the United States) in 1934,’ John Cowan recently wrote in an introduction for a forthcoming volume on soybean oil. ‘By importing equipment from Germany for the manufacture of oil, meal, and phosphatides. The plants processed 100 tons a day.’

“The ADM and Glidden plants were both in Chicago and both utilized Hildebrandt, or U-tube, extractors, with a petroleum of the hexane-type as a solvent. The ADM plant went on stream in March 1934, A.E. MacGee says [in a 1947 article for *Oil Mill Gazetteer*], with the Glidden plant following about November 1934.

“On Oct. 7, 1935, the Glidden plant at 1845 N. Laramie Ave. reopened after being shut down for five weeks. At 11:40 that morning the plant was destroyed in an explosion that shattered windows as far as a mile away and rained bricks on nearby structures. Eleven persons died and 43 were injured... The explosion apparently was triggered by a solvent leak... Cowan says the plant was immediately rebuilt at double its original capacity.

“In those early 1930s while Ford was looking for industrial uses for soybeans and the first large-scale plants were rising in Chicago, Proctor & Gamble in Cincinnati had set Norman F. Kruse to work on soybean oil research. P&G was examining soybean oil for use in Crisco [shortening] and salad oils. In January 1933, P&G shifted a recent Purdue graduate, R.P. Hutchins, to the project as Kruse’s assistant. Kruse and Hutchins became friends, a friendship that would endure corporate animosity more than a decade later when each was with a different firm.

“‘Kruse was a wonderful man,’ Hutchins recalls. ‘He set

about to teach me everything he knew. He was completely unselfish.’ Kruse directed lab work with Hutchins, letting Hutchins write the reports so Kruse could spend more time working with the pilot plant crew.

“In September 1936, Kruse left P&G for Central Soya and Hutchins became head of P&G’s soybean research efforts. Hutchins says Kruse left because he wanted to work on soybean oil extraction on a larger scale. If so, Kruse went to the right place. In 1936, the two-year-old Central Soya firm sent Kruse and Harry C. Offutt to Germany to study continuous extractors. Kruse and Offutt recommended that Central Soya buy a Bollman (basket) extractor.” In Jan. 1937, during a trans-Atlantic phone call, Dale W. McMillen, Central Soya’s founder, to buy the largest extractor available.

Years later, in 1966, Harold W. McMillen, Dale’s son, told a dinner audience in Indiana that this decision came in the midst of the Great Depression, when solvent extraction was a new process, “and the future of the soybean was still regarded with skepticism by many.”

In Nov. 1937 the plant went on stream in a five-story structure beside a cluster of tall (110 feet) silos that increased Central Soya storage capacity by 1 million bushels. With a capacity of 275 tons/day of soybeans, the plant was the largest of its time in the USA.

In the fall of 1936 Honeymead Products Co. of Cedar Rapids, Iowa, opened a plant, based on the German process, with a capacity of 100 tons/day of soybeans.

“Kruse’s former employer, Proctor & Gamble, had a subsidiary firm in Louisville [Kentucky] that produced cottonseed oil for P&G products, Hutchins says. Cotton acreage around Louisville was declining, soybean acreage was increasing. P&G decided to buy a Bollman extractor for a new plant in Louisville.

“In September 1939 with ground broken and foundations started in Louisville, and the extractor sitting on the Hamburg docks for imminent shipment to the United States, England declared war on Germany and a blockade of her ports. Hutchins recalls the German manufacturer said the extractor could be delivered via overland routes to Italy, still neutral at the time, for shipment to the United States. P&G, perhaps mindful that its English operations depended on government allocation of scarce raw materials, decided not to try to circumvent the English blockade. Instead, P&G turned to Piqua, Ohio where French Oil Mill’s C.B. Upton recently had hired Harry Robinson as solvent plant superintendent. Robinson had been with Central Soya when the Decatur, Indiana, plant was built, but apparently he and Kruse had clashed. Robinson left and brought his know-how to French Oil.

“French Oil told P&G it could produce a virtual copy of the Hansa-Muhle V. Bollman unit stranded on the Hamburg docks. Allis-Chalmers preparation equipment was to be used, but the extractor was the first one to be built in the United States by French Oil. The extractor based on Central Soya’s

unit, went into operation during February 1941.” Continued.

**751. Product Name:** Ranch House Sizzleberg, Savoury Macaroni with TVP (Mix), Soysage, Seasavour.

**Manufacturer’s Name:** Direct Foods Ltd.

**Manufacturer’s Address:** Bedford Rd., Petersfield, Hampshire, GU32 3EW, England. Phone: Petersfield 4911/2.

**Date of Introduction:** 1977 April.

**Ingredients:** Macaroni Mix: Wholemeal macaroni, textured soya protein, dehydrated onions, green bell peppers, peas, mushrooms, vegetable oil, sea salt, corn flour, raw sugar, yeast extract, spices, herbs.

**Wt/Vol., Packaging, Price:** Macaroni: 141 gm plastic bags for ½ pound.

**How Stored:** Shelf stable.

**New Product–Documentation:** Trade catalog and price list from Direct Foods Ltd. 1977. April 25. The product line is the same as in 1974 except for the addition of: 10 lb sizes for each flavor, Sizzleberg (1 lb yields 2 lbs), and New Savoury Macaroni with TVP.

Food Report (Lehmann). 1982. Jan. Talk with Peter Roberts. 1990. Dec. 12. In about 1970, Direct Foods Ltd. introduced a line of about 20 vegetarian protein products, all replacements for meat and all sold under the Ranch House brand.

**752.** Shields, Bill. 1977. Vegetable oil plant to begin production in fall of ‘78. *Windsor Star (Essex County, Ontario, Canada)*. June 29. p. 3-4.

• **Summary:** William G. Milliken, president of Maple Leaf Monarch Company, said his vegetable oil processing plant and refinery now under construction on 40 waterfront acres, is scheduled to begin production in the fall of 1978. It will be the largest integrated vegetable oil plant in Canada, and is expected to stimulate Ontario soybean production. Lever Brothers is the largest margarine manufacturer in Canada. The deodorized and hardened oils and fats from the Windsor plant will be used in the production of margarine, shortening, salad and cooking oils. Refined technical oils will be used in the manufacture of paints and varnishes, printing inks, plastics and caulking compounds.

An illustration (architectural drawing) shows Maple Leaf Monarch’s vegetable oil mill and refinery. Address: Star’s Business Editor.

**753.** ADM–Archer Daniels Midland Co. 1977. Top bean (Ad). *Soybean Digest Blue Book*. p. 113. June.

• **Summary:** In the top half of this full-page ad, an illustration shows a pile of soybeans with an ADM flag (with logo) flying from the top. The tag-line at the bottom of the page: “Where the people who feed the world buy their groceries.”

The text: “As the leading domestic processor of soybeans, ADM sits high atop the pile... Now ADM is

acknowledged around the world as the leader in the edible soy processing field and the largest producer of upgraded soy protein products. Such as TVP, the original textured vegetable protein which began the revolution of soy products in foods. And our most recent development, Ardex 700 [textured] soy protein concentrate, an outgrowth of ADM’s soy process engineering group.”

Note: The exact same ad appears in the *Blue Book* in 1978 (p. 113). In the 1979 *Blue Book* (p. 71) it is almost identical except that a plant in North Kansas City, Missouri, has been added to the previous year’s list. In 1980 (p. 3) it is exactly the same as in 1979. Address: World Headquarters: Decatur, Illinois 62525. Phone: 217-424-5422.

**754. Product Name:** Untoasted Soy Flour, Toasted Soy Flakes, and Soy Grits (Bulk and Bagged).

**Manufacturer’s Name:** Honeymead Products Co.

**Manufacturer’s Address:** P.O. Box 29, Mankato, MN 56001.

**Date of Introduction:** 1977 June.

**New Product–Documentation:** *Soybean Digest Blue Book*. 1977. p. 33.

**755.** Honeymead Products Co. 1977. Honeymead Products [Golden Glow Soybean Meal; Linseed meal and sunflower meal] (Ad). *Soybean Digest Blue Book*. p. 117. June.

• **Summary:** Golden Glow soybean meal comes in high-energy (47.5%) and regular (44%) protein. Available bulk or sacked. 100 lb burlap or 50 lb paper. Address: P.O. Box 29, Mankato, Minnesota.

**756.** Pomeranz, Y.; Shogren, M.D.; Finney, K.F. 1977. Flour from germinated soybeans in high-protein bread. *J. of Food Science* 42(3):824-27, 842. May/June. [21 ref]

• **Summary:** Fascinating scanning electron micrographs (photos) show: (1) Soy milk. (2) Germinated soy flour. (3) High temperature soy flour. (4) Ardex 550 (soy flour from ADM). Address: U.S. Grain Marketing Research Center, USDA ARS, Manhattan, Kansas 66502.

**757.** Vandenoever, Randae; Yaiko, Len. 1977. Engineered pork chops made with pork trimmings and soy protein. *Food Engineering* 49(6):ef-28 to ef-30. June. In special section on Engineered Foods.

• **Summary:** Based on market prices in Feb. 1977, a fabricated pork chop with 25% Ardex 700G can offer an approximate 25% savings in raw material costs. The concentrate is hydrated with a 3:1 ratio of water to soy when used to extend pork chops. Address: Research Div., Archer Daniels Midland Co., Decatur, Illinois.

**758.** Harland, B.F.; Oberleas, D. 1977. A modified method for phytate analysis using an ion-exchange procedure: Application to textured vegetable proteins. *Cereal Chemistry*

54(4):827-32. July/Aug. [13 ref]

• **Summary:** Gives the phytate content of 8 meat analogs and alternatives made by General Mills and ADM. The amount of phytate per serving ranges from 31 mg to 354 mg. The phytate content per 100 gm edible portion (EP) ranges from 112 to 1,321 mg. Address: 1. Div. of Nutrition, Food and Drug Administration, Washington, DC 20204; 2. Dep. of Nutrition and Food Science, Univ. of Kentucky, Lexington, Kentucky 40506.

759. Archer Daniels Midland Co. 1977. Annual report. Decatur, Illinois. 33 p. 27 cm.

• **Summary:** Net sales in 1977 were \$2,114 million, up from \$1,647 million in 1976. Net earnings in 1977 were \$61.4 million, down from \$65.2 million in 1976. ADM's protein specialty division successfully introduced Ardex 700, a new soy protein concentrate, and Nutrisoy Fiber. A new light colored TVP was developed for extending fish. The company's TVP brand of textured vegetable proteins remains the largest selling textured product, both in the USA and worldwide (p. 5).

Textured soy protein concentrate products are called TVP/2. A new class of products designated as a soy beverage base are now being evaluated in dairy-type applications, such as milk replacers, cheese, and dessert bases (p. 11).

British Arkady Co.: Sales of TVP, now in its second full year of manufacture in Manchester, England, were up.

Page 13: "In memoriam (full page):

"Thomas L. Daniels, Director Emeritus, died May 23, 1977. The son of John W. Daniels who founded Daniels Linseed Company in 1902, Mr. Daniels started with the Company in 1914, and was first elected a Director in 1915. After service with the Diplomatic Corps he rejoined the Company in 1929 as the Assistant Treasurer and a Director. In 1933 Mr. Daniels was elected a Vice President and in 1947 President. Under his direction the Company established a central research laboratory and stressed the requirements of long-range planning, research and more advanced and specialized products.

"Mr. Daniels retired as President in 1958 but continued to serve as Chairman of the Board until his retirement in 1964. He was named Director Emeritus at that time."

A half-page portrait photo shows Thomas L. Daniels. Address: P.O. Box 1470, Decatur, Illinois 62525.

760. Lublin, Joann S. 1977. Soybean saga: Revival is attempted for meat substitutes that flopped after '73. But new line of Miles Labs is still facing resistance to the taste and the price. Pitch to the health-conscious. *Wall Street Journal*. Oct. 26. p. 1, 27.

• **Summary:** Miles Laboratories Inc. is coming out with new versions of its meatless products "that it says taste, feel and smell more like the real thing. A sampling of the new Morningstar Farms line of vegetable-protein products,

just now starting to be marketed, largely supports Miles's claim. The products are tastier and juicier, they feel meatier and smell less spicy than earlier versions. But the bacon substitute in particular falls short of the real thing. In the words of one impartial taster, it looks and tastes more like painted cardboard than real bacon."

"When Miles offered its original meat substitutes in 1973, officials predicted sales of more than \$100 million a year within the decade. Now, 4 years later, Morningstar Farms sales are running around \$15 million a year, less than half the levels expected by now. The products, moreover, have registered pretax losses of \$33 million since their development. Others in the food business were similarly overoptimistic. Industry-wide sales of soy protein products last year totaled about \$120 million, up from \$75 million in 1972 but far short of forecasts of \$1.5 billion by 1980... When the original products were offered, meat prices were soaring to 1973 peaks and the public was eager for alternatives."

"Miles Laboratories, best known for its Alka-Seltzer antacid, had great expectations for meat substitutes in 1970 when it bought Worthington Foods Inc., a pioneer in textured-vegetable-protein technology. Miles reformulated several Worthington products and began test-marketing sausage-like links and patties, ham-like slices and bacon-like strips in 1972.

"Consumer surveys at the time showed that more than half of all U.S. households had at least one member concerned about heart-disease risks from excessive cholesterol in his diet. Miles marketers reasoned that many of the 40 million concerned families would welcome cholesterol-free replacements for their breakfast protein. The company spent \$7.5 million on a nationwide promotion campaign in 1974, featuring prime-time television commercials emphasizing the nutrition angle.

"About 10 million American families tried the Morningstar Farms breakfast line in the first 18 months, meeting the company's goal. But fewer people than expected came back for seconds, and outside analysts suggest the current sales are half the anticipated volume."

**761. Product Name:** Nutrisoy Fiber (Soy Bran).

**Manufacturer's Name:** Archer Daniels Midland Co.

**Manufacturer's Address:** ADM, Box 1470, Decatur, Illinois 62525. Phone: 1-800-637-5850.

**Date of Introduction:** 1977 October.

**Nutrition:** Moisture 7%, protein 12%, fat 2%, ash 5%, crude fiber 34%, other carbohydrates 40%, calories/100 gm 70.

**New Product-Documentation:** ADM Annual Report.

1977. The company now makes Nutrisoy fiber (a soy bran). Frank French. 1977. Baker's Digest. Oct. p. 102.

"Bakery uses of soy products." "Nutrisoy fiber is the toasted ground cotyledon of the soybean and at 40 per cent crude



## NUTRISOY FIBER SOY BRAN

This is a soy bran product completely derived from the soybean and is produced from the seed coat portion of the soybean.

Nutrisoy Fiber with a crude fiber content of approximately 38% offers one of the highest fiber sources among commercially available vegetable products. Most of the carbohydrate content is non-digestible and although there presently is no standard method for determination of dietary fiber the non-digestibles which should approximate dietary fiber will approach 76% (crude fiber plus carbohydrates).

Composition	Typical Analysis
Moisture	9%
Protein (N x 6.25)	10%
Fat	1%
Ash	4%
Crude Fiber	38%
Carbohydrates (by difference)	38%

### Granulation (typical)

- through US 40 – 100%
- through US 60 – 95%
- through US 100 – 75%

### Microbiological (typical)

Standard Plate Count – 25,000 per gram

### Packaging

Packaged in valve type 50 lb. net weight multiwall paper bags

### Storage

Best storage stability is realized at dry, cool conditions. At least one year storage stability can be expected at conditions of 50% relative humidity and 75 degrees F.

### Applications

Some applications are bread, crackers, cookies, muffins, cereals, dry mixes and snacks. Levels of addition are variable but generally range from 5 to 50%.

For further information, samples or technical assistance, call 1-800-637-5850.

The information contained herein is correct to the best of our knowledge. The recommendations or suggestions contained in this bulletin are made without guarantee or representation as to results. We suggest that you evaluate these recommendations and suggestions in your own laboratory prior to use. Our responsibility for claims arising from breach of warranty, negligence, or otherwise is limited to the purchase price of the material. Freedom to use any patent owned by ADM or others is not to be inferred from any statement contained herein.

# ADM

Protein Specialty Division  
Archer Daniels Midland Company  
Box 1470, Decatur, Illinois 62525



fiber is highest in fiber among natural fiber materials.” Manufacturer’s leaflet. 1979. 1 p. “Nutrisoy Fiber soy bran.” This high fiber product is derived from the seed coat portion of the soybean. The crude fiber content is approximately 38%. Most of the carbohydrate content is non-digestible. For use in breads, crackers, cookies, muffins, cereals, dry mixes, snacks.

ADM. 1987. “Look Where Soybeans Go.” p. 18. Called Nutrisoy Fiber E. Characteristics: Total dietary fiber 72-75%, neutral detergent fiber 55-60%. Applications: Breads, crackers, muffins, cereals, dry mixes, snacks.

762. French, Frank. 1977. Bakery uses of soy products. *Baker’s Digest* 51(5):98-103. Oct. [7 ref]

• **Summary:** Contents: Introduction. Production of soy products. Use in bread production. Use of other soy products: Lecithin, cakes and doughnuts, sweet goods, variety breads, fiber breads. Conclusion.

The use of soy flour in making white bread has several significant advantages: Moisture retention, bleaching and oxidation using an enzyme active soy flour, crust color improvement, improved nutritional profile.

Fig. 3 (p. 100) is a bar chart showing the cost per pound of protein from various sources. The three least expensive sources are “lowfat soybean flour, granular soybean concentrate, and extruded soybean flour;” the three most expensive are beef (about 15 times as expensive as soy flour), pork, and tuna fish.

Fig. 4 shows the improvements in protein quantity realized from fortifying white bread with 12% soy flour: (1) It raises the protein quantity by 50% from 8.0% to 12.0% protein; (2) It raises the protein quality by 95% from 1.00 to 1.95—compared with 2.50 for casein.

“Nutrisoy fiber is the toasted ground cotyledon of the soybean and at 40 per cent crude fiber is highest in fiber among natural fiber materials.” Table V gives a nutritional analysis of Nutrisoy fiber, which contains: Protein 10%, moisture 9%, fat 1%, crude fiber 40%, minerals 4%, carbohydrates 36%. Address: Archer Daniels Midland Co., Decatur, Illinois.

763. **Product Name:** [GranoVita Seasoned Patty Mixture with TVP].

**Foreign Name:** GranoVita Soja-vita.

**Manufacturer’s Name:** DE-VAU-GE Gesundkostwerk GmbH.

**Manufacturer’s Address:** Luener Rennbahn 18, Postfach 1660, D-2120 Lueneburg (near Hamburg), West Germany. Phone: (04131)-303-145.

**Date of Introduction:** 1977.

**Ingredients:** Soya protein, bread crumbs, wheat gluten, wheat flakes, glucose, egg protein, yeast, potato starch, onion, spices, sea salt, celery, parsley.

**Wt/Vol., Packaging, Price:** 200 gm box retails for DM 5.

**How Stored:** Shelf stable.

**Nutrition:** Protein content: 36% protein.

**New Product–Documentation:** Full-page ad for 8 granoVita soy products in the book by Manfred Heide. 1977. *Vegetarische Ernährung: 193 Rezeptvorschläge und Speisepläne für ein Vierteljahr* [Vegetarian nutrition and food: 193 recipe suggestions and meal plans for a quarter of a year]. Stuttgart, West Germany: Paracelsus Verlag. “This product is named “Soja-vita” (Fertig gewuerzte Bratlings-Mischung).”

DE-VAU-GE leaflet. 1980? *Rezepte aus der GranoVita Versuchskueche*. DVMC. Manufacturer’s catalog. 1983. GranoVita. Health-food & natural food from Germany. 6 p. plus 3-page price list. With color photos and ingredients for all products.

764. **Product Name:** Good for Ya Textured Vegetable Protein (TVP brand Textured Soy Flour).

**Manufacturer’s Name:** Farm Foods.

**Manufacturer’s Address:** 156 Drakes Lane, Summertown, TN 38483.

**Date of Introduction:** 1977.

**Ingredients:** Defatted soy flour, vitamin enriched.

**Wt/Vol., Packaging, Price:** 1.5 lb, 5 lb., 10 lb., 25 lb., 100 lb.

**How Stored:** Shelf stable.

**New Product–Documentation:** See next page. Label.

1977, dated. 4 by 9.5 inches. “Made from defatted soy flour. Vitamin enriched.” A color logo, in a vertical rectangle with rounded corners, shows rows of crops (soybeans) in a field converging in the distance at the foot of three mountains—over which arches a 6-color rainbow. Printed in *Fermentation Funnies*. Farm Foods Products Catalog. 1978. p. 2.

Ad in Tom Riker and Richard Roberts. 1979. *The Directory of Natural & Health Foods*. p. 189. A photo shows the label and a nutritional analysis is given. The product “is a high-protein, granular, hydrateable [sic, hydratable] food prepared from defatted soyflour. Fortified with vitamins and minerals, including vitamin B-12, it meets the Federal School Lunch Program standards. This all vegetable product is also cholesterol free.”

765. **Product Name:** Granolac Infant Soya Milk (Powdered).

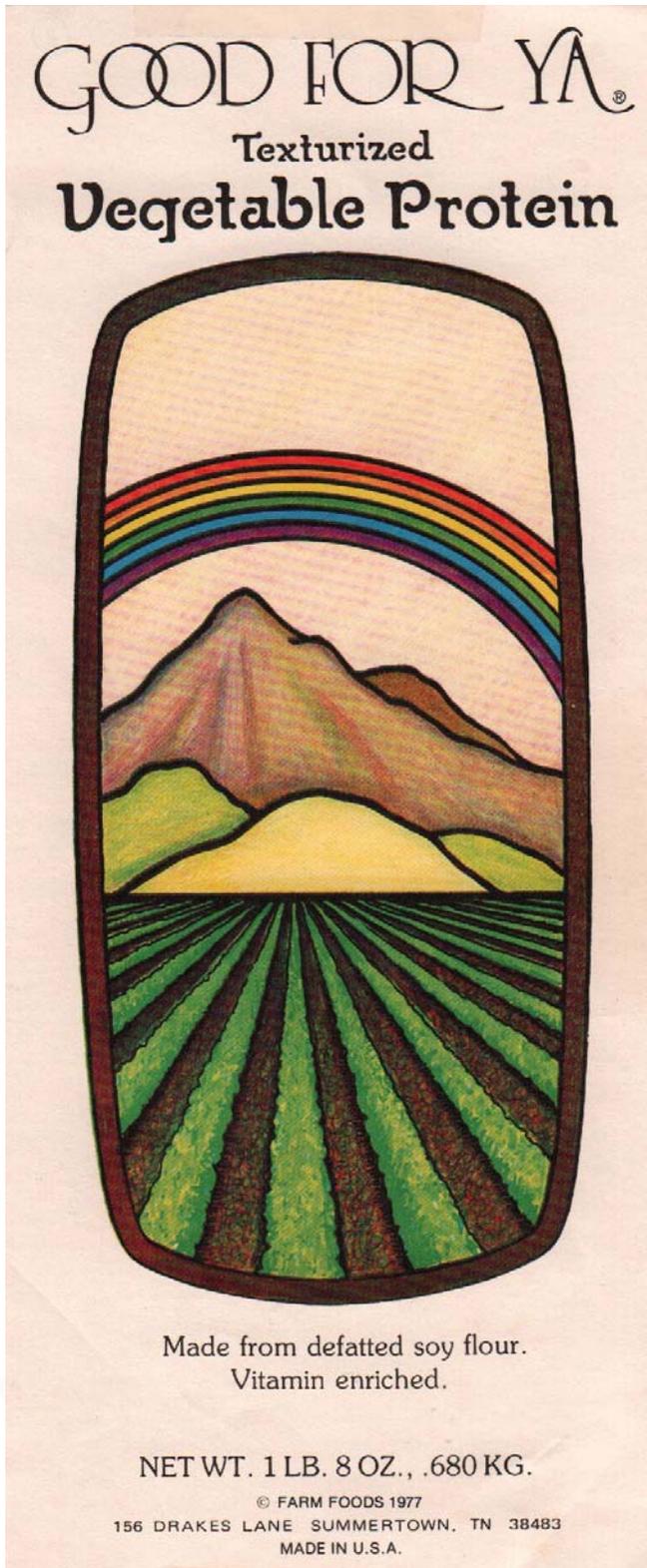
**Manufacturer’s Name:** Granose Health Foods Ltd. (Marketer). Made in the USA by Loma Linda Foods.

**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1977.

**Ingredients:** Soya bean solids, corn syrup, soya oil, sugar, salt, lecithin, vitamins.

**New Product–Documentation:** *The British Vegetarian*. 1961. March/April. p. 93. “Soya milk for household use.” Granose Foods will soon be in a position to supply two



varieties of spray-dried soya milk, Soyalac and Soyagen, made by one of their associated companies, Loma Linda Food Company in Arlington, California. Soyalac is specially prepared for infants, whereas Soyagen is for general use.

A table compares the nutritional composition of the two products.

Listing in International Vegetarian Health Food Handbook (UK). 1977-78. p. 189. "Granolac Infant Soya Milk by Granose Health Foods Ltd." Manufacturer's catalog. 1980. April. "Infant formula soya milk. As near to the taste, texture and nutritional value of mother's milk as is possible. Basic ingredients similar to Granogen, with modifications. Full analysis available."

Dorothy E.M. Francis. 1984. "Alternatives to Cow's Milk: Comparisons." p. 147-48. In: David L.J. Freed, ed. Health Hazards of Milk. London, Philadelphia, Toronto, etc.: Ballière Tindall. Granolac Infant, from Granose, is for infants older than 3 months.

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product was introduced in 1980. It is no longer on the market, and no label is available.

766. ADM Milling Co. 1977. The growing challenge. Shawnee Mission, KS 66207. 28 p.

• **Summary:** This booklet is about world hunger, and ADM's involvement in the U.S. government's attempts to solve it

The color cover shows the sun, low in the sky, shining behind heads of wheat growing in a field. Describes ADM's involvement in the P.L. 480 Food for Peace program and the company's product of what are called "protein cereal grain blends."

Contents: Nutrition, infant survival, and family planning (The four countries adding the most people to the annual world population increase are China (13.3 million), India (12.8), Indonesia (3.4), and Brazil (2.8)). Supplemental food: A vehicle to good health and national development (P.L. 480 foods fight protein-calorie malnutrition). Deficient diet: What is a food supplement (Protein-cereal food products are ideal food supplements). Pregnancy. Lactation. Children: Their special needs. WPC-Soy. Health: Good health and the school age child. Adult health and productivity. Energy requirements by year and age. Emergencies and national disaster relief. Key nutrients: Protein, amino acids, protein content, PER and NPU for protein cereal grain blends and other protein sources. PCM: Protein calorie malnutrition, marasmus and kwashiorkor. Treatment of PCM. Micronutrients. U.S. Recommended Daily Dietary Allowances.

The back flap contains product description sheets. In Oct. 1989 there were sheets for SFCM: Soy fortified cornmeal, 12% soy-fortified wheat flour, WSB: Wheat Soy Blend, CSM: Corn Soy Milk, WPC-Soy, SFB: Soy fortified bulghur, and ICSM: Instant Corn Soy Milk. Address: Shawnee Mission, Kansas.

767. Anderson, Eugene N., Jr.; Anderson, Marja L. 1977. [Food in] Modern China: South. In: K.C. Chang, ed. 1977. Food in Chinese Culture. New Haven, CT, and London: Yale Univ. Press. 429 p. See p. 317-382.

• **Summary:** Page 326 states: Soybeans—the fifth of the classic Five Staples (or Five Grains)—are usually the most important, although other legumes make a surprisingly good showing in south China, no doubt because soybeans grow better in the north. The soybean “produces more protein per acre and per pound than any other common humanly edible crop, plant, or animal. This has caused them to become more important than any animal food as a protein provider in China. The Chinese have long recognized their similarity to animal products and, indeed, have built up a huge cluster of imitation-meat foods (probably developed originally by, and certainly now associated with, vegetarian Buddhists). The Chinese lack of interest in dairy products is almost certainly, in part, a result of the fact that the soybean provides the same sorts of nutrition more economically—though a desire to differentiate themselves from the border nomads and to be independent of them in food economy must also be taken seriously as an explanation. (It is the classic Chinese explanation of the phenomenon but has been dismissed by those moderns who believe that all traditional explanations must necessarily be wrong.)

“Further discourse on the soybean belongs properly in the following section on food processing, for the soybean is used neither in its raw state nor, usually, in a simple boiled or roasted form. There are good reasons for this. The soybean, being so nutritious and succulent, has been faced with intense natural selection pressure by seed-eating insects and other animals; surviving soybean strains contain whole galleries of poisons and other unfortunate chemicals, which protect the seeds against destruction but make them dangerous food in the uncooked and unprotected state (Committee on Food Protection 1973). Simply prepared soybeans are not very digestible, since heat bonds some of the nutrients into hard-to-digest form in the intact bean. Thus almost all soybeans consumed in China are fermented, ground into flour, and then processed, sprouted, or otherwise milled.”

“The soybean is so famous that one is surprised to discover from Buck that the broad bean outranks it in some parts of south China.” However in genetically susceptible individuals, *Vicia faba* produces favism, a condition characterized by acute anemia and other unpleasant symptoms. Other important sources of protein are black soybeans (a variety of soybean mentioned by Buck) and sprouts from mung beans and soybeans (*tou ya*). Bean sprouts bridge the gap between grains and vegetables (*ts'ai*) (p. 326-27).

“A huge bowl of rice, a good mass of bean curd, and a dish of cabbages—fresh in season, otherwise pickled—is the classic fare of the everyday south Chinese world.”

“The New World vegetables stand out as a special class because of their common and recent origin in China and their extreme importance. The white and sweet potatoes have become staples, as has corn. In addition to these, the

peanut (*Arachis hypogaea*) has become the most important oilseed through much of south China, as well as a much used food” (p. 328). The peanut came from South America. Today, peanuts have become more important in areas where they are grown than rapeseed. Peanut and rapeseed oils are polyunsaturated and contain plenty of linoleic acid, a dietary requirement (p. 333, 343, 348). Mushrooms and their relatives are widely used in vegetarian dishes (p. 332).

The section on food processing (p. 337-41) notes that tragic practice of polishing rice, which removes most of the nutrients including fiber. There are many questions about the origins of pasta. Egg noodles probably originated in China. Italian spaghetti is similar to Chinese *mien* and ravioli to *chiao-tzu*, but they may have existed elsewhere before Marco Polo brought them to Italy from China. The technology of soybean process is too complex to discuss except briefly in this chapter. Most important is the production of bean curd or *tou-fu* (Cantonese *tau-fu*, Hokkien *tau-hu*). Hokkien cooks prefer a drier, firmer bean curd. Bean curd is often sold fried. The skin resulting from boiling soymilk [yuba] is skimmed off, dried, and widely used. “Other closely related processes produce the range of imitation meats developed by vegetarians, specifically Mahayana Buddhists. Credible imitations... are made for chicken, abalone, and other white meats, and even beef and pork. The West has picked up the idea and developed it much further, climaxing in the production of textured vegetable protein (TVP), but has—characteristically!—ignored the problem of making the result taste good. The ideal in the West seems to be to make it tasteless” (p. 339).

Concerning fish farming (p. 334-35): “Some fish, however, a pond-reared. Those that have been effectively domesticated are carps. These have several advantages: they produce vast amounts of protein per acre; they do not have to be specially fed since they eat algae and weedy grass and small animals of the ponds and pond fringes; they can live in foul water, and thus in stagnant ponds and market fish barrels; they are efficient converters, putting a large percentage of their feed into growth; and relative to other fish, they are easy to breed in captivity. The first fish farmed in the world were probably the Chinese carps.” However, no mention is made of soybeans being fed to the fish.

On the origin of chop suey (p. 355-56): “Cantonese: To non-Cantonese, or, perhaps better, to non-initiates into this style of cooking, Cantonese food means chop suey and sweet-sour pork. Chop suey is not a typical Cantonese dish, as everyone knows who has much sophistication in Chinese food,... Much more characteristic of Cantonese cooking are stir-fried dishes often flavored with black beans (salted, strongly fermented soybeans);... fish with black beans;...”

“Like all Chinese cuisines, Cantonese is subject to many regional variations. A distinctive one is that of Toisan [Toishan, Taishan], the area of Canton from which about half of all American Chinese trace their ancestry. Its main

claim to fame is that it gave the world chop suey (Cantonese *tsap sui*, ‘miscellaneous things’ or, at worst, ‘miscellaneous slops’). Typically a sort of hash of leftovers warmed up with bean sprouts, a very folklike dish, this food now has a widely known origin myth:... Its origin in old Toisan was traced down by the indefatigable hunter (of big game and food) Li Shu-fan (1964).”

Note: In discussing the origin of “chop suey,” Li Shu-fan (1964, p. 211-12) does not mention *tsap sui*. Address: 1. Assoc. Prof. of Anthropology, Univ. of California at Riverside; 2. Riverside, California.

768. Archer-Daniels-Midland. 1977. What’s new: A 75 year report from Archer Daniels Midland Company. Decatur, Illinois. 12 p.

• **Summary:** See next page. Contents: We’ve come a long way. And we’re still making news in milling. The vegetable protein explosion (p. 8). The high fructose story keeps getting sweeter (ADM launched CornSweet in 1973). Beer or cocktails with your pasta dinner? ADM today: Where the people who feed the world buy their groceries.

A photo facing page 8 shows a man—perhaps William T. Atkinson—making TVP.

“Our forerunner started in 1902 with a single mill and soon became a leading crusher of flaxseed... 75 years ago, ADM was strictly in the business of crushing flax for its oil, which was used primarily as a drying oil in paint... Today ADM is the bridge between two giant industries, agriculture and food... Total commitment to the baking industry has led us to add vital wheat gluten to our line of specialties recently. Gluten is the non-soluble protein in wheat. It is the part of wheat flour that makes it possible to make an elastic, cohesive dough from wheat flour. Adding vital wheat gluten enables bakers to use less expensive flours, it improves bread features such as loaf volume, flavor, softness. It’s a necessary ingredient in the popular new variety breads.”

In “1965 ADM introduced TVP brand textured vegetable protein. Ten years later we introduced a second generation of TVP containing 70% protein, along with a new soy protein concentrate. Today you’ll find ADM’s soy proteins in more than 600 brands of prepared foods on the grocer’s shelves. Soups, chili, frozen dinners, pizza, gravies. You’ll find other forms of soy protein in everything from beverages and baked goods to pet foods.” Some of the most recent developments include: New soy variety breads, sweets that are good for kids (cookies based on the new Ardex soy protein concentrates), a new soy beverage based on new technology that tastes great and has the quality of nutrition needed by growing children, and Nutrisoy fiber (a soy bran). “Who needs high priced foods? Not the British. Cadbury’s Soya Choice fills the bill. Based on TVP, these products are a raging success. It as the good flavor and nutrition of meat. At half the price.” A color photo shows two cans of Cadbury’s Soya Choice (Casserole Chunks, and Mince). A full-page

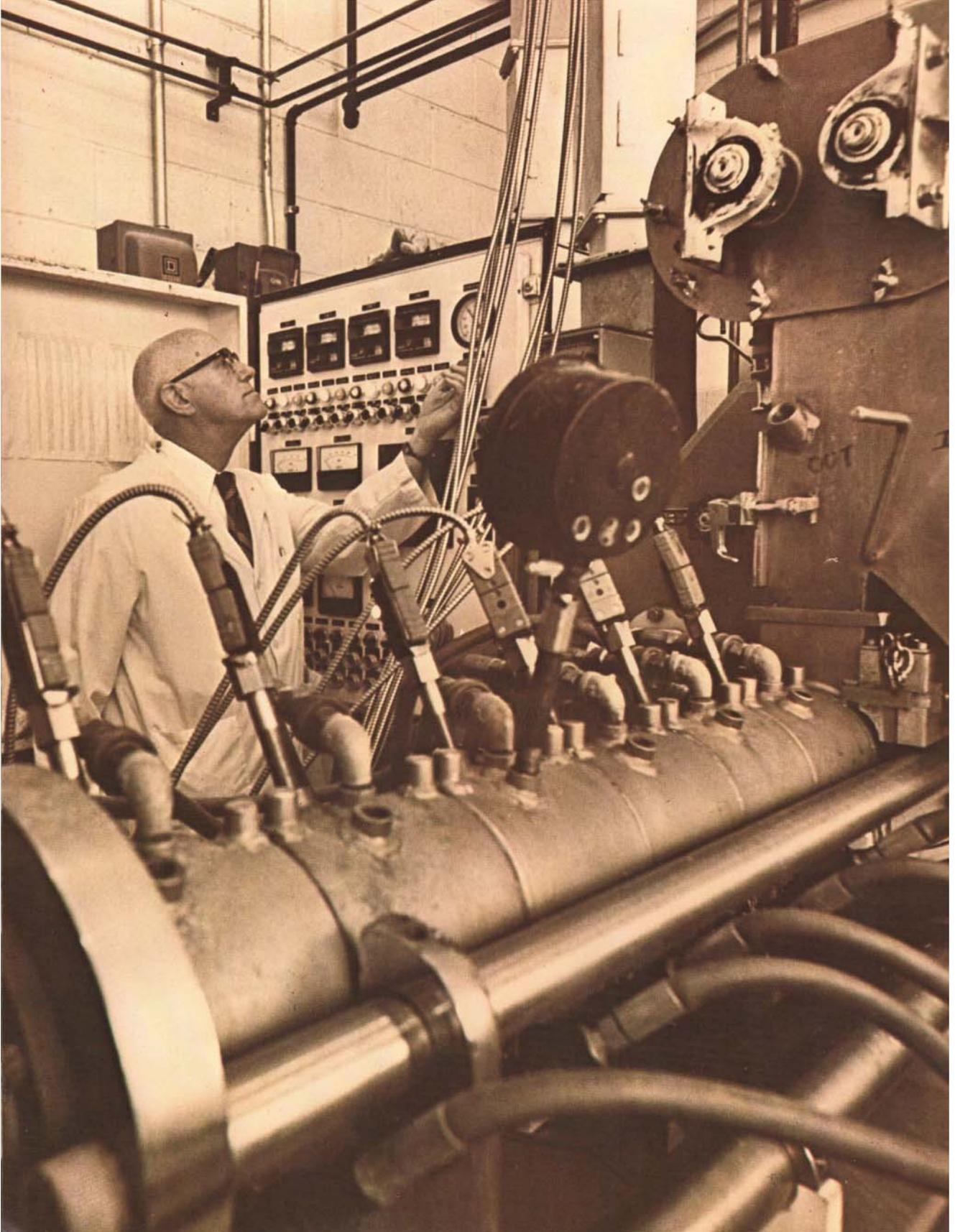
black-and white photo on the facing page shows a person (perhaps William Atkinson) running a large extrusion cooker.

The last page is titled: “ADM Today: Where the people who feed the world buy their groceries.” ADM Refined Oils makes Yelkin lecithins, margarine and shortening oils, and cooking oils. ADM Milling makes wheat gluten. ADM Protein Specialties makes: TVP textured vegetable protein (flavored and unflavored), TVP/2 textured vegetable protein concentrate (flavored and unflavored), Ardex 700 soy protein concentrate, Nutrisoy low and full fat soy flours, and Nutrisoy defatted soy flours and grits. Address: Archer Daniels Midland Company, Box 1470, Decatur, Illinois 62525.

769. George, Susan. 1977. How the other half dies: The real reasons for world hunger. Montclair, New Jersey: Allanheld, Osmun & Co. xxix + 308 p. Index. 21 cm. [500+\* ref]

• **Summary:** Soybeans are discussed in several places: Between 1972 and 1973 U.S. soybean production increased by 25% (p. 9).

Chapter 4, titled “Technology: Now who pays to do what to whom?” shows that no new technology, not even a new crop is neutral in the effects it has on different classes of people. A report on soybeans in Brazil commissioned by the French Government Center for External Trade showed that they are becoming an increasingly important crop there. Since Brazil can produce and sell its crop between the two U.S. soybean harvests, the government’s official agricultural policy encourages Brazilian farmers to grow more soybeans since they are a profitable export crop. The price of soybeans is attractive, so farmers have abandoned corn, a traditional crop, as well as wheat (to a lesser extent) because soybeans demand less fertilizer. Since soybean production is easily mechanized, fewer Brazilians need be employed. Soybeans are usually crushed to make oil and meal. This complex processing technology is being taken over by the world’s most competent processors—large multinational agribusiness firms, such as Cargill and Bunge. Small Brazilian processors are going bankrupt. Since Brazil’s infrastructure for transporting and loading the soybeans is substandard, the World Bank has been kind enough to contribute half the price of new private export corridors to the seaports, which the Brazilian government has kindly declared necessary for the multinationals. No doubt the Brazilian soybean industry will be profitable for multinational agribusiness, but what will be the consequences for ordinary Brazilians. From 1970 to 1972, the price of corn, a traditional staple food and feed, has risen 60%, while the price of chicken has gone up 33%. Soybeans have drastically decreased the amount of land previously used for growing the *feijao* or black bean—another staple crop and key human protein source; during this period its price jumped by 275%. Rice production also suffered from the soybean competition. All of these developments hurt average Brazilians, and especially the poor.



In addition, real estate prices in areas best suited to soybean production have risen dramatically; one hectare in Rio Grande do Sul, which sold for 1,500 cruzeiros in 1972, sold for less than 10,000 cruzeiros less than a year later. Thus, smaller farmers with less mechanization are losing out to those who can afford to buy more than and agricultural equipment. Soybean production in Brazil directly counteracts the efforts of the Brazilian government to limit inflation (p. 67-69).

Chapter 6, titled "Planned scarcity," notes that in the USA, one acre in 6.5 is now planted to soybeans. Europe is only 2% self-sufficient in plant protein production. After World War II, Europe introduced American hybrid corn to replace local varieties; though the yield was higher, the protein content was lower. Thus a new protein source had to be found for feeding livestock, and U.S. soybean meal seemed to be the most rational and inexpensive solution. Export of soybean meal from the U.S. to Europe jumped from only 47,000 tons in 1949 to nearly 5 million tons in 1972-73. Major U.S. processors set up crushing mills in Europe. In short, the entire post-war European livestock industry has been developed on the basis of extensive use of low-price soybean meal. The U.S. established a "near-monopoly position for supply not only of Europe but of Japan and other nations."

Discusses the 1973 U.S. soybean export embargo, which began in June and sent prices soaring to \$12 a bushel, from \$2. The embargo was removed 3 months later and at year's end it became clear that the scare over shortages was unwarranted. The Food for Peace program introduced soya oil into countries like Spain and Tunisia that had never before tasted anything but their own olive oil. Even the butter-rich Netherlands now consumes more imported soy margarine than butter. "Far be it from me to suggest collusion I can't prove, but it is at least evident who profits from higher prices and who suffers. A futures market in soya meal was opened in London in April 1975 as a measure that might check price fluctuations." Yet the key fact is that European countries do not produce soybeans, nor any alternative protein crop.

Discusses the new effort to extend the use of soya beyond feeding animals by promoting TVP, and the international conference held at Munich, Germany, in Nov. 1973. Earl Butz (U.S. Secretary of Agriculture) led the American delegation; Hubert Humphrey stated: "Food is a new form of power. Food is wealth. Food is an extra dimension in our [U.S.] diplomacy." "Americans presented 24 out of the 38 papers (including 13 by agribusiness representatives and 10 by USDA people). Only one was by a nutritionist. "One sees absolutely no alternative to continued US MNC (multinational corporation) control of the world plant-protein production and prices." "The only rational way to offset price and foodstock manipulation by the giant traders would be to have grain stocks held in government

hands, to be released or held back as the market situation demanded." The grain traders are "frantically opposed to any reserve system..." (p. 122-25).

Chapter 8, titled "Food aid?... Or weapon," discusses: Importance of feedgrains exports, Soybean Council of America, American Soybean Association, PL 480, promotion of soybean exports to Spain, Iran, and Korea, Ralston Purina and Cargill, Food for Peace counterpart funds used to finance research in recipient countries, "common defense" military expenditures (p. 172, 176).

Chapter 11, titled "What can 'they' do?" discusses alternative food sources, single-cell protein (SCP), America's energy-devouring food-production system which could exhaust U.S. fossil fuel reserves within 25 years, research by DuPont showing that when soybeans are experimentally flooded by carbon dioxide, they quadruple yields and fix more nitrogen (p. 239-40). Address: A Smith College graduate now studying at the Sorbonne. Fellow of the Transnational Inst.

770. Horan, F.E. 1977. Protein texturization. In: J.R. Whitaker and S.R. Tannenbaum, eds. 1977. *Food Proteins*. Westport, CT: AVI Publishing Co. xi + 602 p. See p. 484-515. [75 ref]

• **Summary:** Contents: Introduction. Emphasis is on foods. Meaning of texture. Why Protein Foods? Evolution of textured protein foods: The first protein food—human milk, Early achievements with textured protein products, More recent achievements with textured protein products. Assessment of textured protein foods: Scientific and technological aspects, Marketing aspects. Outlook for the future.

Tables: (1) Protein supplies throughout the world. (2) Proteins available for U.S. civilian consumption. (3) Annual U.S. per capita consumption of some meats. (4) Disposable income spent for beef. (5) Proximate composition of milks and soybeans. (6) Lysine and methionine plus cystine in wheat and soy. (7) Composition of bacon analog. (8) Consumer's cost comparison of meat and meat-soy blend. (9) Fat and water relationships in extended beef patties. (10) Economic basis for TVP in frankfurters.

Figures: (1) Sources of protein. (2) Income and expenditures. (3) Commercial cereal-soy blended products. (4) Diagram of a typical cooker-extruder. (5) Productivity as a function of an extruder pump zone. (6) Some types of extruder screws. (7) Instron measurements on textured soy flour and textured soy protein concentrate. (8) Instron measurements on textured soy products and meat. (9) Scanning electron microscope photographs. (10) Textured soy flour before and after hydration. (11) Institutional and retail applications of textured soy protein. Address: ADM, Decatur, Illinois.

771. Johns, Warren L.; Utt, R.H. eds. 1977. *The vision*

bold: An illustrated history of the Seventh-day Adventist philosophy on health. Washington, DC: Review and Herald Publishing Assoc. vii + 208 p. Illust. Index. 29 cm.

• **Summary:** An excellent book, loaded with old photos, cartoons, illustrations, and other graphics. Contains a colorful and accurate history of the subject. Contents: Elmshaven: The little elderly lady of Elmshaven (Ellen G. White). Pills, potions, purges, and prussic acid [hydrocyanic acid]. Battle Creek: Will success spoil John Kellogg? (Dr. John Harvey Kellogg). Granola, Postum, Corn Flakes, and peanut butter (W.K. Kellogg, C.W. Post). That's a wonderful bargain, but we haven't a cent (David and Mary Paulson). Westward: Another Kellogg, another San (Saint Helena Sanitarium). Where koala bears munched gum tree leaves: Health reform leaps the Pacific (Work in Australia and New Zealand, Sanitarium Health Food Co. makes Granose Biscuits and Weet Bix). God will give the thirsty elephant a drink (Paradise Valley Sanitarium). What makes Burden borrow? (Glendale Sanitarium and John Burden in Southern California). Ernest Lloyd remembers: Present at the purchase of Glendale Sanitarium (J.H. Kellogg, Harry Miller, David Paulson). Loma Linda: The resurrection of Lonesome Linda: New medical center gets off to a very shaky start (Loma Linda Sanitarium and College of Medical Evangelists). "They have gone and done what I told them not to" (American Medical Assoc., Percy Magan and Sutherland).

Photos show: Ellen G. White (p. 8, 11, 14). Ann Stanley Kellogg and John Preston Kellogg, the parents of John Harvey and Will K. Kellogg (p. 23). John H. Kellogg (p. 36, 38, 48, 52, 60, 68-71). Dr. James Caleb Jackson and Dr. Russell T. Trall (p. 40). The Western Health Reform Institute (p. 46, 49). Battle Creek Sanitarium (p. 56). Graph showing yearly patronage of the Battle Creek Sanitarium, 1866-1939. It grew from 53 patients in 1866 to a peak of 7,462 in 1926, then fell to 3,283 in 1935, and rose back to 3,691 in 1939. W.K. Kellogg (p. 74-80). Sydney, Australia, Sanitarium (p. 126). Sanitarium Foods Labels (Australia) including Gluten Meal (p. 142-43). Paradise Valley Sanitarium (California, p. 158-59). Percy Magan (p. 188, 201).

A bar chart (p. 73) shows yearly patronage of the Battle Creek Sanitarium from 53 people in 1866, to 1,174 in 1886, to a local peak of 7,034 in 1916, to an all-time peak of 7,462 in 1926; by 1939 yearly patronage had declined to 3,691. In "1933 the institution went into receivership. The Federal Government eventually turned it into an army hospital." Address: 2. Freelance writer and editor, Wrightwood, California.

772. Edwards, R.A. 1978. Social and legislative constraints [on soy protein foods]: The Australian situation. In: American Soybean Assoc., ed. 1978. International Soya Protein Food Conference, Proceedings. Hudson, Iowa: ASA. 136 p. See p. 12-13.

• **Summary:** There are somewhat less than 200,000

vegetarians in Australia, mostly Seventh-day Adventists, Hindus, and Jains. Their dietary needs have been met for the last 40 years by the Sanitarium Health Food Company, which is owned by the Adventist Church. Their meatlike products include Nutmeat, Rediburgers, Vegecuts, and Vegelinks. Initially the protein in these foods came exclusively from nuts, then wheat gluten was added, and more recently they have also included low-fat soy flour imported from the USA. The company imports texturized soy protein products and also makes their own, but they have found that their traditional untexturized vegetable protein foods outsell TVP by a factor of 50 to 1. Sanitarium appears to be the only supplier of non-meat protein foods to Australian and New Zealand consumers, presumably because the market is not big enough to attract a second company of the type.

As far as the author knows, the only Australian manufacturer of TVP other than Sanitarium is Griffith Laboratories, which makes an unflavored TVP for the very large and lucrative pet food market; they also make a low-fat soy flour.

In Australia, heart disease is the most serious disease, accounting for more than 30% of all deaths. With health professionals advocating a reduction in animal products, total fats, saturated fats, and cholesterol, and with the increasing awareness during the last few years of the relation between nutrition and health, "it would seem to me to be an opportune time to give the marketing of soy bean products a deeper and more searching examination than the superficial approaches that have been taken in the past." Address: Prof., School of Food Technology, Univ. of New South Wales, P.O. Box 1, Kensington 2033, Australia.

773. Archer Daniels Midland Co. 1978. Vegetarian cookbooks: A selected bibliography. Decatur, Illinois: ADM. 3 p. Feb. 2. Unpublished typescript. 28 cm. [36 ref]

• **Summary:** Many of these 36 vegetarian cookbooks focus on soybeans or soyfoods. Address: P.O. Box 170, Decatur, Illinois 62525. Phone: 217/424-5200.

774. **Product Name:** Nutrisoy 101.

**Manufacturer's Name:** Archer Daniels Midland Co.

**Manufacturer's Address:** Decatur, Illinois.

**Date of Introduction:** 1978 March.

**Ingredients:** Defatted soy flour (2 parts), partially hydrogenated soybean oil (1 part), and sodium phosphate.

**How Stored:** Shelf stable.

**New Product-Documentation:** ADM Technical data for Nutrisoy Formula 101. Dated March 1978.

Spot in Processed Prepared Food. 1979. Jan. "A recipe for scallops." Nutrisoy 101 is a textured vegetable protein.

Food Engineering International. 1979. June. p. 36-37. "Emulsifier based on soy protein."

Food Product Development. 1979. 13(10):52. "Improved soy flour-oil blend answers beverage base needs."

775. *Food Engineering*. 1978. Soy stroganoff: Soy protein provides the total basis—both beef and dairy replacement—for a highly palatable stroganoff. 50(3):ef-28. March.

• **Summary:** Developed in the ADM test kitchens, this formula contains TVP Strip S (caramel colored).

776. Munoz, Juan M.; Sandstead, H.H.; Jacob, R.A.; Logan, G.M., Jr.; Klevay, L.M. 1978. Improvement of oral glucose tolerance test and peripheral insulin activity by dietary fiber. *Clinical Research* 26(3):584A. April.

• **Summary:** Types of fiber consumed were “soybean hulls (SH; 86.7% dietary fiber), textured vegetable protein (TVP),” soft white wheat bran (SWW), corn bran (CB), or hard red spring wheat bran (HRS). The oral glucose tolerance was improved in healthy subjects by the consumption of SH, CB, and HRS. Address: USDA, Agricultural Research Service, Human Nutrition Lab., Grand Forks, North Dakota.

777. Munoz, Juan M.; Sandstead, H.H.; Jacob, R.A.; Logan, G.M. Jr.; Klevay, L.M. 1978. Effects of dietary fiber on plasma lipids of normal men. *Clinical Research* 26(3):584A. April.

• **Summary:** Types of fiber consumed were “soybean hulls (SH; 86.7% dietary fiber), textured vegetable protein (TVP),” soft white wheat bran (SWW), corn bran (CB), or hard red spring wheat brans (HRS). Total plasma cholesterol decreased 14.0% with soybean hulls, and 17.56% with HRS.

Note: This is the earliest document seen (Aug. 2001) containing experimental evidence that soy fiber lowers blood cholesterol. Address: USDA, Agricultural Research Service, Human Nutrition Lab., Grand Forks, North Dakota.

778. Ward, A.G. 1978. Commercial development of soya bean protein products in the EEC. In: Commission of the European Communities. Agriculture. 1978. Report of the Study Group on Vegetable Proteins in Foodstuffs for Human Consumption, in Particular in Meat Products. See p. 83-85. Appendix IV. April.

• **Summary:** “The soya bean is the main source of specialized vegetable protein products for human consumption within the EEC. Wheat gluten is also used but only to a very limited extent.” It is difficult to estimate the current scale of usage for human consumption.

“Belgium: N.V. Vamo Mills produces toasted defatted flour and grits. No extruders known to occur in Belgium. Production of isolates being undertaken by Purina Protein Europe (associate of Ralston Purina Company USA).

“Denmark: Aarhus Oliefabrik A/S produces defatted flour, soya concentrate (Danpro) and textured soya concentrate. The company operates the only extruder in Denmark. Dansk Sojakagefabrik A/S produces defatted soya flour and grits as well as full fat soya flour.

“France: Société Industrielle des Oléagineux

produces defatted soya flour and grits as well as full fat soya flour. Rhône Poulenc is reported to be working with an experimental soya protein spinning plant (not yet commercial). No information has been received about extruders functioning in France.

“Germany: Ölwerke Noury and Van Der Lande, Ölmühle Hamburg A.G. and Holtz and Willemsen all produce defatted soya flour and grits and the first two also produce full fat soya flour and grits. No information has been received about extruders functioning in Germany.

“Netherlands: Cargill Soja Industrie B.V. (associated with Cargill Inc., USA) produces defatted flour and grits. The company has three extruders for textured soya products, each with a capacity of about 7,000 to 10,000 tons per annum. These are not thought yet to be working to capacity. Unimills B.V. produces defatted soya flour, soya concentrate and products textured by extrusion with a single extruder. ADM-De Ploeg B.V. produces defatted soya flour and grits and also textured soya flour. The company has a single extruder of capacity 7,000 to 10,000 tons per annum, and is an associate of Archer Daniels Midland Co., USA.

“United Kingdom: British Soya Products produces defatted soya flour and grits as well as full fat flour. The company also produces by its own techniques (not conventional extrusion) the “Bespro” range of textured products. These may include gluten with the soya material. Spillers Ltd (Soya Food Ltd and Lucas Ltd) produces defatted flour and grits as well as full fat flour. Soya concentrate (Newpro) and textured soya flour are also produced. It is believed that the company now has the production capacity of two extruders (14,000 to 20,000 tons per annum). GMB (Proteins) Limited (jointly owned by General Mills Inc., USA and Bush, Boake Allen Ltd) produces a textured soya product (“Bontrae”), not by conventional extrusion. It is thought the current production capacity is a few thousand tons per annum. Miles Laboratories (U.K.) is linked to Miles Laboratories Inc., USA. Information is lacking as to whether the company has production capacity in the U.K. for textured products, as well as importing U.S. products. Courtaulds Limited produces a range of spun soya protein products (Kesp), some of which may incorporate gluten. Annual production is not known. The British Arkady Co. Ltd is associated with Archer Daniels Midland Co., USA. Defatted soya flour and grits, full fat soya flour and textured soya products (by extrusion) are produced. The single extruder has a capacity of 7,000 to 10,000 tons per annum. Extensive research and development has been carried out by Unilever Ltd. (in close association with Unilever in the Netherlands) to develop the “mesophase” process for the preparation of soya protein products and to utilize them in foods. The processes have not yet been commercially exploited.

“No information has been received concerning the production of soya protein products for human consumption

and in particular textured products from Ireland, Italy and Luxembourg but Italy has very substantial capacity for the production of oil and meal from soya beans.” Address: Procter Dep. of Food and Leather Science, Univ. of Leeds, Leeds.

779. *Cereal Industry Newsletter*. 1978. High fiber/low cholesterol. High fiber bread diets have lowered blood serum cholesterol levels by 12 to 17%. 8(5):1. May.

• **Summary:** High fiber bread diets have been found to lower serum cholesterol levels by 12-17% in 15 male volunteers. This preliminary human nutrition study was conducted by USDA’s Science and Education Administration (SEA). Speaking before FASEB, SEA medical officer Juan M. Munoz said the volunteers were fed bread supplemented with finely ground soybean hulls and other substances. “Serum cholesterol levels were lowered significantly in the six males eating diets with soybean-hull supplemented bread.

Typed note attached to the article by ADM: “Dr. Munoz has indicated to us his conclusion that soy bran is the ‘best’ overall performer of this research. Soy bran had the most significant effect in lowering cholesterol of all items tested. Soy bran was the only fiber product tested to show significant reduction of LDL [bad] cholesterol *and* significant increase in glucose tolerance.”

780. **Product Name:** Granose Sausfry: Seasoned Soya Protein Sausage Like Mix.

**Manufacturer’s Name:** Granose Foods Ltd. (Marketer-Distributor). Made in the UK by British Arkady.

**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1978 May.

**Ingredients:** 1980: Vegetable fat, textured soya protein [textured soy flour], rusk, glucose, stabiliser, salt, herbs, spices, colouring, added vitamins.

**Wt/Vol., Packaging, Price:** 500 gm (1.1 lb) bag.

**How Stored:** Shelf stable.

**New Product–Documentation:** Ad in *Alive* magazine (UK). 1978. May. p. 28. “Now our range is even more wholesome.” “Sausfry, the versatile soya-based sausage mix.”

Manufacturer’s catalog. 1980. April. “Textured soya protein in a beef sausage like flavour which only requires the addition of water to make it usable in any of the ways in which sausage meat can be used.”

Form filled out and Label sent by Granose Foods Ltd. 1990. June 13. States that the product, made by British Arkady, was introduced in 1980. Address on bag is now Newport Pagnell. Label. 1990. 3.5 by 8 by 2 inch white coated paper bag. Red, yellow, brown, and black on white. An illustration (line drawing) on front panel shows a woman standing behind a table of baked goods. “Healthier wholesome food.” Pack panel: “Make it plain... Add 750 ml

(1.33 pints) of cold water to contents and leave the mixture for five minutes. Divide and form into sausage shapes, fry gently until golden brown.

“Make it fancy... Cook Sausfry shapes in hot batter for a tasty toad-in-the-hole or wrap in pastry to make savoury Sausfry rolls. Add onion, tomato, sage—any of your favourite flavours—and create exciting new ways to serve Sausfry.

“Note: Sausfry contains no animal matter and no Monosodium Glutamate.

“Ingredients: Textured defatted soya flour (defatted soya flour, iron, thiamin, riboflavin, vitamin B-12), hydrogenated vegetable oil, rusk, stabiliser (Methyl Cellulose, of plant origin), sea salt, hydrolysed vegetable protein, herbs, spices, colour (beetroot red).”

Color photo of package in *Linda McCartney’s Home Cooking*. 1990. p. 18.

781. Montgomery, Marlowe. 1978. Selected bibliography on the U.S. soybean industry. Decatur, Illinois: Archer Daniels Midland Library. 7 p. May. Unpublished manuscript. [94 ref] Address: ADM.

782. Granose Foods Ltd. 1978. The Granose grain harvest (Ad). *Alive (England)*. June. p. 36-37.

• **Summary:** Products (non-soy) include Sunnybisk (crispy whole wheat cereal biscuit made since 1895), Muesli, Fruit Bran (breakfast laxative food), Bran, Stabilised Wheatgerm, Swiss-Cup (Coffee Substitute). Granose products “also include exciting soya-based foods... Granose is a member of the worldwide organization, World Food Services, itself a division of the Seventh-day Adventist Church.” The Services own over 30 other health food factories. Address: Stanborough Park, Watford, Herts. WD2 6JR, England.

783. LeMaire, W.H. 1978. Bacon analogs... Exciting possibilities. *Food Engineering* 50(6):ef-14, 15. June.

• **Summary:** Breakfast muffins, pancakes, and omelets represent three different—yet practical—applications for bacon analogs. Bacon replacers have an image problem—how to get food processors to think of them other than as a garnish for salads. Major suppliers, such as ADM, Far-Mar-Co, and Cargill either have or are close to introducing cheese, pepperoni, and ham as well as improved bacon analogs. It is known that Central Soya, since purchasing General Mills’ steam texturization process for texturizing soy, is considering the flavored, textured analog market. General Mills and McCormicks are busy developing the retail market with national brands. Durkee’s and other suppliers pursue regional markets with their brands. Most of these retail products are simply bought from the three major suppliers and re-packed. Altogether the market for bacon analogs is today a 10 million pound market, roughly divided between food service and retail at 4 million pounds each with over 1 million pounds in other processed foods. Address: Midwest editor.

784. *Food Processing (Chicago)*. 1978. Functional soy protein: Permits salad dressings with 50% less oil/calories. July.

• **Summary:** Nutrisoy 101 is a soy protein powder containing about 34% protein and 32% fat. It can be used to make pourable or spoonable salad dressings; three recipes are given. Soylec Special, a lecithinated soy protein, contains 37% soy lecithin in a dry, free-flowing form.

785. **Product Name:** Granose Curry Sauce.

**Manufacturer's Name:** Granose Foods Ltd.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1978 July.

**Ingredients:** Textured soya protein, sultanas, wheat flour, starch, salt, pineapple, onion, sugar, tomato powder, apple flake, coconut, spices, herbs.

**New Product–Documentation:** Manufacturer's catalog. 1980. April. "Spiced curry sauce with textured soya protein and fruit. Serve with rice."

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by Granose, was introduced in July 1978. It has been discontinued.

786. Robin, Mike. 1978. The reign in the U.S. lies mainly in the grain. *Lincoln Gazette (Nebraska)*. Sept. 20. [7 ref]

• **Summary:** Contents: Introduction. The Soviet wheat deal. Cargill and the state. Tradax. And back home. Food for Peace in Korea. Soybeans in Brazil.

This 4-page report shows how Cargill has grown through efficiency, predicting the future, taking advantage of every opportunity, and—whenever possible—using public monies and subsidies to finance its operation

The Soviet wheat deal: "Because farmers had no advance knowledge of the Russian sales, they sold their grains at prices ranging from \$1.25 to \$1.50 a bushel. The grain companies scurried about trying to buy these cheap grains from farmers, co-ops, and government-held reserves all through the early part of the summer of 1972. Several months later, when the Soviet sales were announced and the price of wheat rose as much as 50 percent, farmers realized the extent of the beating they had taken on what came to be known as the 'Great American Grain Robbery'. Agriculture Department officials claimed that even they had no knowledge of how much wheat had been sold to the Russians. Then Agriculture Secretary Earl Butz stated at a press conference, 'Farmers knew precisely as much as the grain companies. Some money has been made in the deal. Some trading companies made it. But it's the name of the game.'"

Although Cargill is adamant about the merits of free trade and looks askance at government regulation of the grain trade, the company nevertheless has many friends and

employees in high government positions.

"Tradax: In order to market and export its grain, Cargill set up a new corporate entity, Tradax International, in Panama. Vice President Walter Saunders explained: 'Organizing the new company in Panama enabled us to conduct our trading activities in the international grain market on the same tax footing available to our major competitors.'"

"Finding that Panama was less than ideal for doing business, Cargill then set up a Swiss Company called Tradax Geneva. Tradax is so large that by itself it ranks as one of the world's largest grain traders. Cargill Chairman Erwin Kelm told the U.S. Senate subcommittee on multinationals that Cargill sells as much as 50 percent .of its grain yearly to its own subsidiaries abroad. Now, when the Soviets buy U.S. grain, they no longer go to Cargill in the U.S. as they did in 1972. Instead, they buy from Tradax Geneva, which makes it difficult to monitor Soviet purchases—U.S. law doesn't require Tradax to report its sales,—and, additionally, Cargill does not pay U.S. taxes on its sales through Tradax."

"Soybeans in Brazil: Again in Brazil, Cargill was successful in using public monies to finance its operations. In 1972 Cargill received a loan of \$25 million from OPIC, a semi-public agency, to build a soy-bean crushing plant in Brazil. The Export-Import Bank also helped by underwriting loans of more than \$1 million. Soybean prices were skyrocketing in the early 1970s, and Brazil had already emerged as one of the world's largest soybean producers, second only to the U.S. Cargill jumped at the opportunity to get a foothold in the Brazilian market and its potential large profits.

"What both of these lending agencies and Cargill chose to overlook is the fact that much of Brazilian soybean production is for export and would be competing with United States-grown soybeans in world markets, thus undercutting the position of U.S. soybean farmers in the international market.

"As Verl Loyland of the Finley Farmer Grain and Elevator Company of North Dakota told the Senate Committee on Multinationals in 1976, 'I think the big problem, the way we look at it, is that these few [grain] companies are multinational companies. They are really not our salesmen. The multinational companies can pick up grain in any country they so desire, at whatever price advantage, or what have you. Just because a big sale is made to Russia doesn't necessarily mean they are going to buy from the U.S.'"

"To underline this point, in 1976 Cargill's European subsidiary, Tradax, sold 37 million bushels of soybeans to the Soviets. Terms of the sale allowed the beans to originate anywhere.

"Dennis Blankenship, director of market development for the American Soybean Association, claims that the soy processing boom in Brazil accounts in part for the recent

drop in volume of American meal shipped to Western Europe. The Brazilian government heavily subsidizes its soybean exports and ships abroad as much as 70 percent of its soy production, most of which is processed by subsidiaries of the grain giants, such as Cargill Agricola, Dreyfus, Bunge, and Archer-Daniels-Midland.

“While there appears to be little question that American agribusiness promotion of soybeans in Brazil has had harmful effects for U.S. producers, the expansion of soybeans has been far more deleterious to Brazil farmers and consumers alike. *How The Other Half Dies*, by Susan George [1977], summarizes a French government report on the introduction of soybeans to Brazil. Much of what follows is drawn from that study.

“The authors of the report are certain that soybeans have drastically reduced the amount of land previously devoted to staple crops, particularly the feijao or black bean... [see Susan George]

“In this article I have tried to break the veil of secrecy that has shrouded Cargill and its activities from public view. Cargill’s influence on our lives is profound, and demands much more study...”

787. Cole, Morton S. 1978. Extending muscle proteins. *Cereal Foods World* 23(9):535-538. Sept.

• **Summary:** Recent estimates of soy protein production are: Soy flour: 730 million lb. Isolated soy protein: 51 million lb. Soy protein concentrate: 8 million lb. Textured soy protein: 204 million lb. Address: Archer Daniels Midland Co., Decatur, Illinois, 62521.

788. *Food Product Development*. 1978. Meat plus vegetable protein—Opportunities for growth. 12(8):36, 39, 42, 46, 50. Sept. [1 ref]

• **Summary:** Discusses soy-based meat extenders made by Central Soya, A.E. Staley, Griffith Labs, ADM, and Grain Processing Corp., plus a new labeling regulation for the products that will take effect on 1 July 1979. It will require use of the term “vegetable protein product” on the label. At that time, if you remember, beef prices headed skyward and consumers decided that the prices were unwarranted and started cutting beef purchases. Then the Fed slapped price controls on beef, and grocery operators discovered vegetable protein. Many combination products were introduced, some of them badly formulated, mishandled and overextended. As a result, consumer rejected the products, and most of the new combos died on the vine when beef prices started to recede.

Products are simply a lot better than they were in 1973-74. Advances in processing technology of the vegetable products have produced a blander, more functional product. Steam introduced into the system at various points during extrusion is used to “blast off” undesirable flavor notes. Discusses Central Soya, Staley, Griffith Laboratories, Archer Daniels Midland, and Grain Processing Corporation.

789. *Trend (Austria)*. 1978. Agraraffaere: Das Sojawunder vom Marchfeld [An agricultural affair: The soya wonder from Marchfeld]. 9(9):42-51. Sept. [Ger]

• **Summary:** Discusses the achievements Anton Wolf has made in adapting soybeans to Steiermark, Austria. His yields have averaged 3000 kg/ha, higher than the U.S. average. The U.S. is actively trying to kill soybean production in Austria, so that the country will have to buy U.S. soybeans. But Austria also grows rapeseed, which has a higher oil content than soybeans.

Of the 62.2 million metric tons of soybeans produced worldwide in 1976, the U.S. produced 34.4 million. China 12 million, but uses them all within the country. So the USA is the main soybean exporter worldwide (Brazil sold a meager 330,000 metric tons in 1976). U.S. exports are controlled by a small “soya clique” (*Soja-clique*) consisting of firms, such as Cargill, Continental Grain, ADM, Central Soya, and Bunge—all of which are owned by eight Jewish families [sic, not true!]. A photo shows soybean breeder Anton Wolf.

790. National Soybean Processors Association. 1978. Year book and trading rules 1978-1979. Washington, DC. ii + 106 p.

• **Summary:** On the cover (but not the title page) is written: Effective October 1, 1978. This is the 50th anniversary issue. Contents: The National Soybean Processors Association [Introduction and overview]. Constitution and by-laws. Officers and directors. Executive office. Members. Standing committees. Food Protein Council. Trading rules on soybean meal. Sales contract. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}), sampling of soybean meal (automatic sampler, probe sampler), official weighmaster application, semi-annual scale report, official referee chemists (meal). Trading rules on soybean oil. Sales contract. Definitions of grade and quality of export oils. Soybean lecithin specifications. Appendix to trading rules on soybean oil: Inspection, grading soybean oil for color (N.S.P.A. tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses; soap stock, acidulated soap stock and tank bottoms (only method numbers listed), official weighmaster application, semi-annual scale report, official referee chemists (oil). Soybean oil export trading rules. Foreign trade definitions (for information purposes only).

The page titled National Soybean Processors Association (p. ii) states: “During the past crop year about 900,000,000 bushels of soybeans moved through processing plants of NSPA’s 29 member firms. Approximately 55 percent of America’s 1.7 billion-bushel soybean crop is bought and processed by NSPA members. Exporters account for another 41 percent of the crop, and the remainder [4%] is returned to

farms for seed, feed, and residuals.” Also discusses industry programs, soybean research, and international market development.”

The section on officers, executive committee, and board of directors (p. 7-8) gives the name, company affiliation, and phone number of each person. Officers—Chairman: John G. Reed, Jr., Continental Grain Co. Vice Chairman: C. Lockwood Marine, Central Soya Co., Inc. President: Sheldon J. Hauck. Secretary: A.E. Idleman, A.E. Staley Manufacturing Co., Inc. Treasurer: Edward J. Cordes, Ralston Purina Co. Immediate past chairman: Lowell K. Rasmussen, Honeymead Products Co.

Executive Committee: Gorge A. Heinz ('79), Buckeye Cellulose Corp. Donald H. Leavenworth ('79), Spicola, Cargill, Inc. C. Lockwood Marine, Central Soya Co. Inc. John G. Reed, Jr., Continental Grain Co. Gaylord O. Coan ('80), Gold Kist, Inc. Lowell K. Rasmussen, Honeymead Products Co. William T. Melvin ('80). Planters Oil Mill, Inc. Theodore W. Bean ('79), Quincy Soybean Co. Edward J. Cordes, Ralston Purina Co. Richard E. Bell ('80), Riceland Foods, Inc. Austin E. Idleman, A.E. Staley Mfg. Co.

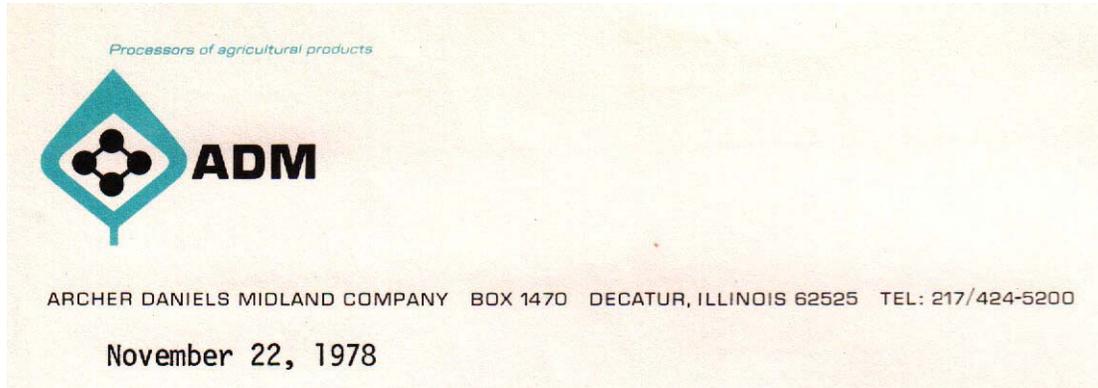
Board of Directors (alphabetically by company; each member company has one representative on the board): Thomas H. Wolfe, Anderson, Clayton & Co. Charles Bayless, Archer Daniels Midland Co. Keith Voight, Boone Valley Coop. Processing Assn. George H. Heinz, Buckeye Cellulose Corp. David C. Thompson, Bunge Corporation. Donald H. Leavenworth, Cargill, Inc. C. Lockwood Marine, Central Soya Co., Inc. John G. Reed, Jr., Continental Grain Co. Joe C. Givens, Dawson Mills. Alfred Jenkins, Delta Cotton Oil & Fertilizer Co. Kenneth E. Sullivan, Farmers Grain Dealers Assn. of Iowa. Donald M. Chartier, Farmland Industries, Inc. Gaylord O. Coan, Gold Kist Inc. Lowell K. Rasmussen, Honeymead Products Co. Kenneth J. McQueen, Land O'Lakes, Inc. Floyd W. Brown, Lauhoff Grain Co. Kermit F. Head, Missouri Farmers Assn.—Grain Div. Robert E. Hicks, Owensboro Grain Co., Inc. Sewell L. Spedden, Perdue Incorporated. John H. Payne, Planters Manufacturing Co. William T. Melvin, Planters Oil Mill, Inc. Theodore W. Bean, Quincy Soybean Co. Edward J. Cordes, Ralston Purina Co. Richard E. Bell, Riceland Foods, Inc. J.D. Morton, Sherman Oil Mill. Stiles M. Harper, Southern Soya Corp. Austin E. Idleman, A.E. Staley Mfg. Co. Preston C. Townsend, Townsend's Inc. Tyler Terrett, West Tennessee Soya Mill, Inc.

Executive office, Washington, DC: Executive Director, Sheldon J. Hauck. Director, Public Affairs: Jack DuVall. Director, Regulatory Affairs: William F. Sullivan. Administrative Asst.: Helen Miller. National Soybean Crop Improvement Council: Robert W. Judd, Managing Director.

Members (listed alphabetically by company; within each company, first the name of the official Association representative {who is on the Board}, followed by the other personal members listed alphabetically by surname.

For example, Archer Daniels Midland Co., the company with the most personal members, has 26. After the name of each personal member is given with his address and phone number. In the listing below, the number of personal members is shown in parentheses after the name of each company, followed by city and state of the various locations): Anderson, Clayton & Co. (6); Phoenix, Arizona; Jackson, Mississippi; Houston, Texas. Archer Daniels Midland Co. (26); Decatur, Illinois; Galesburg, Illinois; Granite City, Illinois; Fredonia, Kansas; Mankato, Minnesota; Red Wing, Minnesota; Fremont, Nebraska; Lincoln, Nebraska; Kershaw, South Carolina. Boone Valley Coop. Processing Assn., Eagle Grove, Iowa. Buckeye Cellulose Corp. (8); North Little Rock, Arkansas; Augusta, Georgia; Cincinnati, Ohio; Memphis, Tennessee. Bunge Corporation (6); Cairo, Illinois; Logansport, Indiana; Emporia, Kansas; New York City, New York; Cargill, Inc. (18); Osceola, Arkansas; Gainesville, Georgia; Cedar Rapids, Iowa; Des Moines, Iowa; Sioux City, Iowa; Washington, Iowa; Chicago, Illinois; Wichita, Kansas; Minneapolis, Minnesota; Fayetteville, North Carolina; Sidney, Ohio; Memphis, Tennessee; Chesapeake, Virginia. Central Soya Co., Inc. (11); Gibson City, Illinois; Decatur, Indiana; Fort Wayne, Indiana; Indianapolis, Indiana; Belmond, Iowa; Marion, Ohio; Bellevue, Ohio; Delphos, Ohio; Chattanooga, Tennessee. Continental Grain Co. (6); Guntersville, Alabama; Chicago, Illinois; Taylorville, Illinois; New York City, New York; Cameron, South Carolina. Dawson Mills (3); Dawson, Minnesota. Delta Cotton Oil & Fertilizer Co. (1); Jackson, Mississippi. Farmers Grain Dealers Assn. of Iowa (Cooperative), Soybean Processing Div. (1); Mason City, Iowa. Farmland Industries, Inc. (5); Van Buren, Arkansas; Sergeant Bluff, Iowa; Hutchinson, Kansas; St. Joseph, Missouri. Gold Kist Inc. (3); Atlanta, Georgia. Honeymead Products Co. (3); Mankato, Minnesota. Land O'Lakes, Inc. (2); Fort Dodge, Iowa; Sheldon, Iowa. Lauhoff Grain Co. (1); Danville, Illinois. Missouri Farmers Assn.—Grain Div. (5); Mexico, Missouri. Owensboro Grain Co., Inc. (2); Owensboro, Kentucky. Perdue Incorporated (2); Salisbury, Maryland. Planters Manufacturing Co. (2); Clarksdale, Mississippi. Planters Oil Mill, Inc. (2); Rocky Mount, North Carolina. Quincy Soybean Co. (4); Quincy, Illinois. Ralston Purina Co. (8); Bloomington, Illinois; Lafayette, Indiana; Iowa Falls, Iowa; Louisville, Kentucky; Kansas City, Missouri; St. Louis, Missouri; Raleigh, North Carolina; Memphis, Tennessee. Riceland Foods, Inc. (8); Helena, Arkansas; Stuttgart, Arkansas. Sherman Oil Mill (1); Fort Worth, Texas. Southern Soya Corp. (1); Estill, South Carolina. A.E. Staley Manufacturing Co. (7); Decatur, Illinois. Townsend's Inc. (2); Millsboro, Delaware. West Tennessee Soya Mill, Inc. (1); Tiptonville, Tennessee.

Associate Members: ACLI Soya Co, White Plains, New York. Anderson Clayton Foods, Dallas, Texas. Balfour MacClaine International, Ltd., New York City, New York.



Best Foods, a Unit of CPC International Inc., Englewood Cliffs, New Jersey. California Vegetable Oils, Inc., San Francisco. Canadian Vegetable Oil Processing Co., Hamilton, Ontario, Canada. Cobec Brazilian Trading and Warehousing Corp. of the U.S., New York City. Louis Dreyfus, Stamford, Connecticut. Durkee Foods, Div. of SCM Corporation, Chicago, Illinois (Gerald J. Daleiden). Gordon-Kutner Co., Dallas, Texas. Grain Processing Corp., Muscatine, Iowa (H.P. Woodstra). Hartsville Oil Mill, Hartsville, South Carolina (Richard A. Koppein). Humko Products, Memphis, Tennessee. Hunt-Wesson Foods, Inc., Fullerton, California. Lever Bros Co., New York City, New York. Maple Leaf Mills Ltd., Toronto, Ontario, Canada (W.G. Milliken). Marwood Company, San Francisco, California. Overseas Commodities Corp., Minneapolis, Minnesota. Pillsbury Co., Bloomington, Minnesota. Procter & Gamble Co., Cincinnati, Ohio. PVO International Inc., San Francisco, California. Quaker Oats Co. (The), Chicago, Illinois. Schouten International, Inc., Minneapolis, Minnesota. Sofico, Memphis, Tennessee. Spencer Kellogg, Div. of Textron, Inc., Buffalo, New York. Alfred C. Toepfer, Inc., New York City, New York (Dieter Rahlmann).

Standing committees: For each committee, the function of the committee, the names of all members (with the chairman designated), with the company and company address of each are given—Crop Improvement Council. Meal trading rules. Oil trading rules. Safety and insurance. Soybean Research Council. Technical. Address: 1800 M St., N.W., Washington, DC 20036. Phone: (202) 452-8040. Telex 89-7452.

791. Shurtleff, William. 1978. Protein source for the future. *PHP (Japan)*. Oct. p. 8-18, 79-82. Illust. 18 cm.

• **Summary:** Contents: Introduction. Ten reasons why soybeans will be the protein source of the future: 1. Optimum land utilization. 2. Lowest cost source of protein in almost every country of the world. 3. High nutritional value. 4. Time tested for over 2,000 years. 5. Remarkably versatile. 6. Appropriate technology (“Traditional soyfoods can be produced in cottage industries”). 7. New dairylike products. 8. Soybeans are hardy and adaptive. 9. Free

nitrogen fertilizer from nodules on soybean plants. 10. Great productivity potential.

Discusses new patterns of soy protein utilization, with specific reference and descriptions of tofu, soymilk, tempeh (“Indonesia’s most popular soyfood”), miso, shoyu, whole dry soybeans, roasted soybeans, fresh green soybeans, soy flour, kinako, soy sprouts, and textured soy protein (TVP), yuba, and natto. Concludes with a discussion of new developments in the Western world.

Note: This is the earliest English-language document seen (Aug. 2013) that contains the word “dairylike” (written as one word) in connection with soyfoods. Address: New-Age Foods Study Center, P.O. Box 234 (951½ Mountain View Dr.), Lafayette, California 94549. Phone: 415-283-2991.

792. VanDenover, Randae. 1978. Re: Thank you for your evaluations of ADM’s soy protein products. Letter to William Shurtleff at New-Age Foods Study Center, Nov. 22. 1 p. Typed, with signature on letterhead.

• **Summary:** See above. “I want to thank you for sharing your evaluations of soy protein and the recipes and the recipes you recommend.”

Note: Shurtleff first wrote her on 14 Nov. 1978 thanking her for sending the two types of TVP. “Akiko has been testing and developing a number of recipes and the results have been far superior to anything we had possibly imagined. Tacos and Sloppy Joes got top grades.”

“I have also enclosed a reference article by Mark Sterner and Hank Sterner. If you should wish to contact them, Meals for Millions Foundation is located at 1800 Olympic Blvd., P.O. Box 1666, Santa Monica, California 90406.” Address: Mgr. of Research Kitchen, Research Dep., Archer Daniels Midland Company, Box 1470, Decatur, Illinois 62525. Phone: 217 / 424-5200.

793. Kent, Jack. 1978. Oilseed mill starts search for qualified staff: Maple Leaf Monarch plant. *Windsor Star (Essex County, Ontario, Canada)*. Dec. 1.

• **Summary:** Canada’s first multi-oilseed processing plants will require a specially trained work force. “The Maple Leaf

Monarch plant will replace the present facilities of Maple Leaf Mills on the Toronto waterfront and more than triple the capacity of the plant.” Address: Star business reporter.

794. Archer Daniels Midland Co. 1978. ADM soy protein specialties: TVP, TVP/2, Ardex 700 (Portfolio). Decatur, Illinois. 25 inserts. 30 cm.

• **Summary:** See next two pages. On the front cover of this portfolio is a large color photo of five meatlike dishes containing textured vegetable proteins. Below that is the title, on three lines, in large bold letters. On a long tab is written “ADM soy protein specialties.” On the inside front cover are four paragraphs with bold red headings: (1) A plant to develop edible soy protein began in 1930 at ADM. (2) In 1970 ADM was granted a patent for TVP. (3) TVP/2 textured soy concentrate offers new possibilities for food processors. (4) Ardex 700 soy protein concentrate for meat, cereal, snack foods, baking and dairy foods.

A cover letter dated 15 Dec. 1978 on ADM letterhead (Decatur, Illinois) is from Bob Sullenberger, Sales Manager, Protein Specialty Division.

The sixteen numbered inserts, printed with dark brown ink on orangish-tan laid paper, give basic information, nutritional composition, etc.: 1. Nutrient data for TVP unflavored non-fortified (also fortified) nutrients per 100 grams—Typical. 1A. Physical properties—size / shape / density. Ingredient declaration. 2. TVP bacon flavor bits. 3. Nutritional data—Typical. 4. Labeling regulations. Microbiological data for TVP—Typical. 5. Soy protein concentrate: Ardex-700F, Ardex-700G. 6. Nutrisoy fiber soy bran. 7. Defatted soy flours. 9. Lecithinated and refatted soy flours. 10. Defatted soy grits. 11. TVP/2 unflavored minced 240 ACH type. 12. Nutrisoy 220T. 13. Kaysoy defatted soy flour and grits. 14. Toasted Nutrisoy T-6. 15. Nutrisoy 101. 16. Soylec special lecithinated soy flour.

The next seven inserts (A-G) give bulk recipes: A. Beef patties. B. Veal patties. C. Pork patties. Breakfast links. D. Chili con carne. Chili con carne with beans. E. Sloppy Joes. Taco filling. F. Fabricated fish fillets with Ardex 700F and TVP. Fish binder for 100 lbs of finished product. G. Meatless and nondairy stroganoff.

Finally, a color leaflet on Imitation bacon flavor bits. Address: P.O. Box 1470, Decatur, Illinois 62525. Phone: 1-800-637-5850.

795. ADM Protein Specialties. 1978. Extending meat with TVP made good sense in 1967. It makes more sense all the time (Ad). *Processed Prepared Foods*. Dec. p. 21.

• **Summary:** See page after next two pages. A large graph in the top half of the ad shows the price of all meat from 1967 to late 1978; it has been rising. On the same graph is another showing the price of meat extended with 24% TVP. It is considerably less expensive than regular meat.

The text continues: “In recent months, meat has cost as

much as 30¢ a pound more than meat extended with TVP.”

Note: TVP is usually used to extend ground beef or hamburger. Address: Decatur, Illinois 62525. Phone: 800-637-5850.

796. **Product Name:** Granose Vegex [Beef-Flavoured Chunks, or Mince].

**Manufacturer’s Name:** Granose Foods Ltd. (Marketer-Distributor). Made in the UK by Courtaulds.

**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1978.

**Ingredients:** Soya protein, vegetable oil, edible starch, salt, flavouring, natural colour.

**New Product–Documentation:** Ad in *Alive* magazine (UK). 1978. May. p. 28. “Now our range is even more wholesome.” “Vegex Chunks, delicious spun soya protein for casseroles and pies.”

Manufacturer’s catalog. 1980. April. “Textured spun protein which has a similar texture to meat. Beef like flavour. It has a long shelf life, and is a balanced protein.”

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by Courtaulds UK, was introduced in 1978. It has been discontinued.

797. **Product Name:** Granose Ravioli (Vegetarian).

**Manufacturer’s Name:** Granose Foods Ltd.

**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1978.

**Ingredients:** Durum wheat flour, tomato paste, vegetable oil, bread crumbs, salt, corn starch, spices, textured soya protein (textured soy flour), groats, yeast extract, mushroom, egg albumen, carrot, onion flakes, egg whole powder, caramel.

**New Product–Documentation:** See page after next four pages. Manufacturer’s catalog. 1980. April. “Traditional Italian style pasta filled with savoury soya protein in a spicy tomato sauce. Serve hot on toast or with potatoes or other vegetables.”

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by Granose, was introduced in 1978. But a note says “Not Applicable.”

Label sent by Granose. 1990. July 11. The soy is textured soy flour.

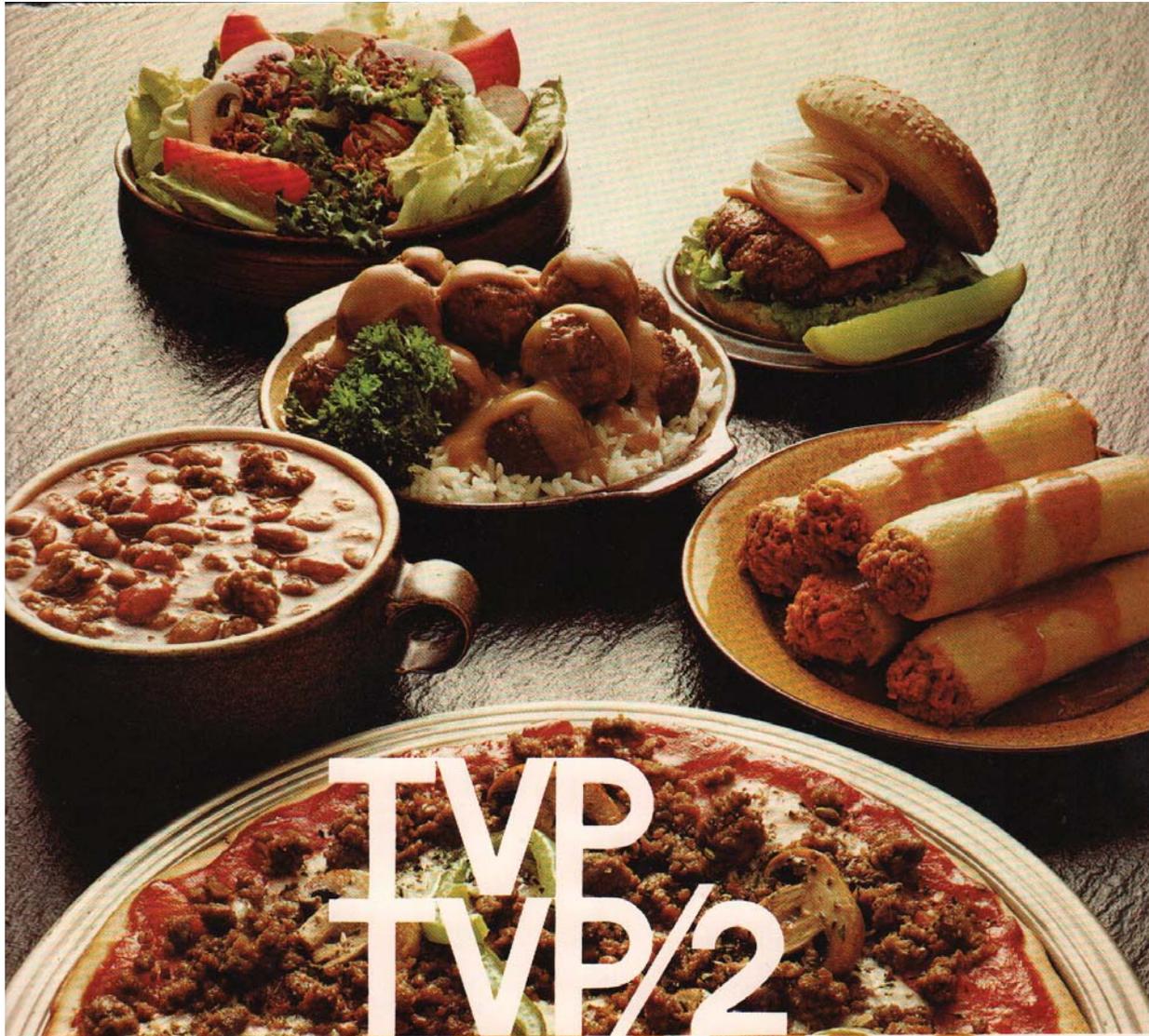
798. **Product Name:** Granose Cannelloni.

**Manufacturer’s Name:** Granose Foods Ltd.

**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1978.

**Ingredients:** Durum wheat flour, tomato puree, vegetable oil, sugar, textured soya protein (textured soy flour), onion, carrots, salt, celery, oats, cornstarch, mushroom, spices, yeast



**ADM Soy Protein Specialties**

**TVP**  
**TVP/2**  
**ARDEX 700**



**NUTRIENT DATA FOR TVP® UNFLAVORED- NON- FORTIFIED  
NUTRIENTS PER 100 GRAMS  
TYPICAL**

Water (%)	6	Total Fat (gm.)	1.0	Vitamins	
Total Carbohydrates (gm.)	31.5	Animal Fat (gm.)	none	A, Actual (I.U.)	none
Starch (gm.)	none	Fish Fat (gm.)	none	Carotene (I.U.)	none
Sugar (gm.)	8-12	Vegetable Fat (gm.)	1.0	D (I.U.)	none
Fiber (gm.)	3.0	Hydrogenated Fat (gm.)	none	E (I.U.)	none
Total Protein (gm.)	52	Cholesterol (mg.)	none	C (mg.)	none
Animal Protein (gm.)	none	Fatty Acids		Folacin (mg.)	.35-.36
Vegetable Protein (gm.)	52	Saturated (gm.)	.2	Thiamine (mg.)	.60-.64
Gluten (mg.)	none	Monounsaturated (gm.)	.2	Riboflavin (mg.)	.33
Amino Acids		Polyunsaturated (gm.)	.6	Niacin (mg.)	3.0
Tryptophan (mg.)	343	Minerals	6.0	B6 (mg.)	.5
Threonine (mg.)	2170	Calcium (mg.)	220	B12 (mcg.)	.5
Isoleucine (mg.)	2464	Phosphorus (mg.)	570	Biotin (mcg.)	73
Leucine (mg.)	4075	Iron (mg.)	8.0	Pantothenic Acid (mg.)	.8
Lysine (mg.)	3164	Iodine (mcg.)	500	Alcohol (gm.)	none
Methionine (mg.)	596	Chlorine (mg.)	19	Caffeine (mg.)	none
Cystine (mg.)	409	Sodium (mg.)	700	Calories	280
Phenylalanine (mg.)	2603	Potassium (mg.)	2200		
Tyrosine (mg.)	1619	Magnesium (mg.)	260		
Valine (mg.)	2617	Manganese (mg.)	2.6		
Arginine (mg.)	3777	Zinc (mg.)	5.5		
Histidine (mg.)	1347	Copper (mg.)	1.3		

**NUTRIENT DATA FOR TVP® UNFLAVORED-FORTIFIED  
NUTRIENTS PER 100 GRAMS  
TYPICAL**

Water (%)	6	Total Fat (gm.)	1.0	Vitamins	
Total Carbohydrates (gm.)	31.5	Animal Fat (gm.)	none	A, Actual (I.U.)	none
Starch (gm.)	none	Vegetable Fat (gm.)	1.0	Carotene (I.U.)	none
Sugar (gm.)	8-12	Fish Fat (gm.)	none	D (I.U.)	none
Fiber (gm.)	3.0	Hydrogenated Fat (gm.)	none	E (I.U.)	none
Total Protein (gm.)	52	Cholesterol (mg.)	none	C (mg.)	none
Animal Protein (gm.)	none	Fatty Acids		Folacin (mg.)	.35-.36
Vegetable Protein (gm.)	52	Saturated (gm.)	.2	Thiamine (mg.)	.60-.64
Gluten (mg.)	none	Monounsaturated (gm.)	.2	Riboflavin (mg.)	.60
Amino Acids		Polyunsaturated (gm.)	.6	Niacin (mg.)	16.0
Tryptophan (mg.)	343	Minerals	6.0	B6 (mg.)	1.4
Threonine (mg.)	2170	Calcium (mg.)	220	B12 (mcg.)	5.7
Isoleucine (mg.)	2464	Phosphorus (mg.)	570	Biotin (mcg.)	73
Leucine (mg.)	4075	Iron (mg.)	10.0	Pantothenic Acid (mg.)	2.0
Lysine (mg.)	3164	Iodine (mcg.)	500	Alcohol (gm.)	none
Methionine (mg.)	596	Chlorine (mg.)	19	Caffeine (mg.)	none
Cystine (mg.)	409	Sodium (mg.)	700	Calories	280
Phenylalanine (mg.)	2603	Potassium (mg.)	2200		
Tyrosine (mg.)	1619	Magnesium (mg.)	260		
Valine (mg.)	2617	Manganese (mg.)	2.6		
Arginine (mg.)	3777	Zinc (mg.)	5.5		
Histidine (mg.)	1347	Copper (mg.)	1.3		

The information contained herein is correct to the best of our knowledge. The recommendations or suggestions contained in this bulletin are made without guarantee or representation as to results. We suggest that you evaluate these recommendations and suggestions in your own laboratory prior to use. Our responsibility for claims arising from breach of warranty, negligence, or otherwise is limited to the purchase price of the material. Freedom to use any patent owned by ADM or others is not to be inferred from any statement contained herein.

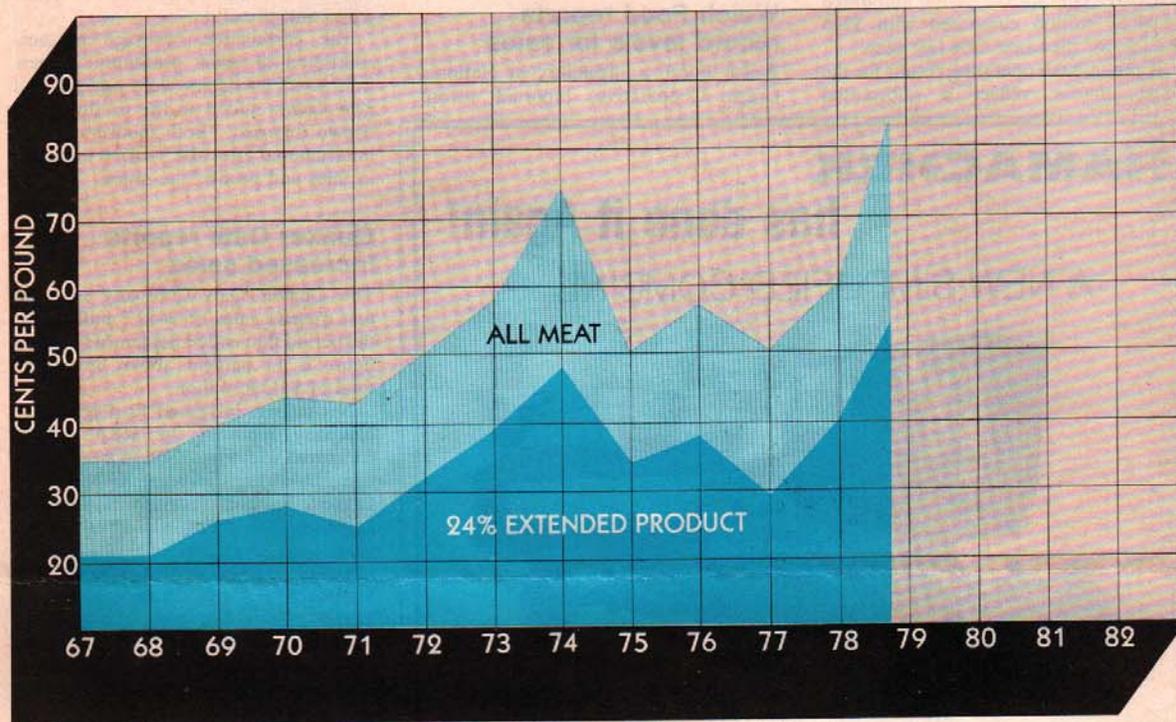
® TVP is a registered trademark of Archer Daniels Midland Company

**ADM**



Archer Daniels Midland Company  
Box 1470, Decatur, Illinois 62525

## Extending meat with TVP made good sense in 1967.



## It's making more sense all the time.

In recent months, meat has cost as much as 30¢ a pound more than meat extended with 24% TVP.

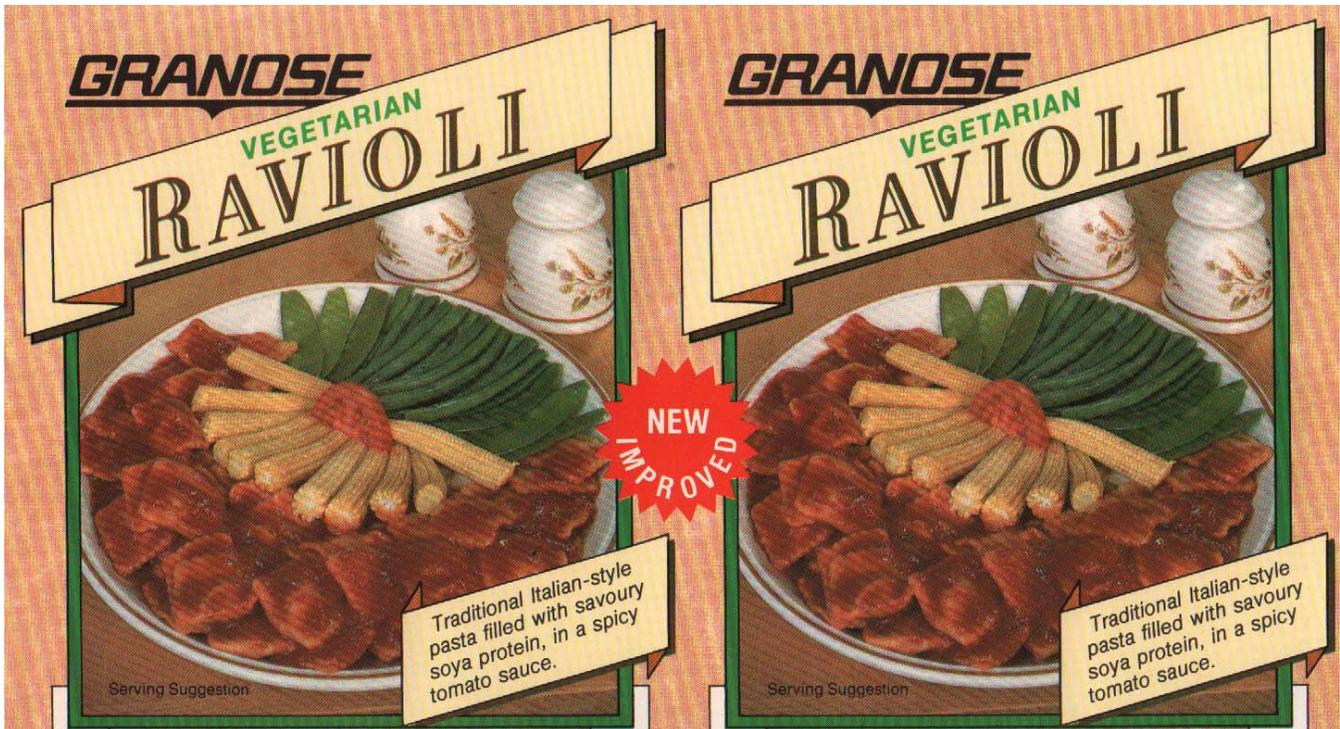
For more than a decade, TVP® textured vegetable protein has been helping the food industry cope with the high and ever climbing cost of meat. Isn't it time you found out how TVP can extend your profits while maintaining the quality

of your product.

ADM developed the first textured vegetable protein. Pioneered its use. And we have a complete meat laboratory where we can work with you to develop the optimum formulation for your product. Call toll-free, 800-637-5850, Protein Specialties Division, Decatur, Illinois 62525.



**ADM PROTEIN SPECIALTIES**



extract, egg albumen, egg whole powder, caramel.

**New Product–Documentation:** Manufacturer’s catalog. 1980. April. “Traditional Italian style Cannelloni filled with spicy soya protein in a tangy tomato sauce. Heat in ovenproof dish topped with grated cheese.”

Form filled out by Granose Foods Ltd. 1990. June 13.

States that the product, made by Granose, was introduced in 1978. It has been discontinued.

799. **Product Name:** Granose Vegetarian Goulash.

**Manufacturer’s Name:** Granose Foods Ltd.

**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1978.

**Ingredients:** 1980 and 1990: Water, textured soya protein, maize starch, hydrolysed vegetable protein, tomato puree, wheat flour, salt, yeast, carrot, onion, potato, leek, capsicum, mushroom, sugar, paprika, spices, herbs, vegetable oil.

**Wt/Vol., Packaging, Price:** 425 gm (15 oz) can.

**How Stored:** Shelf stable; refrigerate after opening.

**New Product–Documentation:** See at right. Manufacturer’s catalog. 1980. April. “Soya protein and vegetable stew in a sauce flavoured with paprika. May be heated as in the can or have added vegetables.”

Form filled out and Labels sent by Granose Foods Ltd.

1990. June 13. States that the product, made by Granose, was introduced in 1978. Label. 1990. 8.5 by 4.25 inches. Photos on front and back panels show a kettle or wok full of the ready-to-serve product, which resembles a meat casserole.

“Textured soya protein and vegetables in a savoury sauce...

A traditional stew with soya protein and vegetables in a tasty

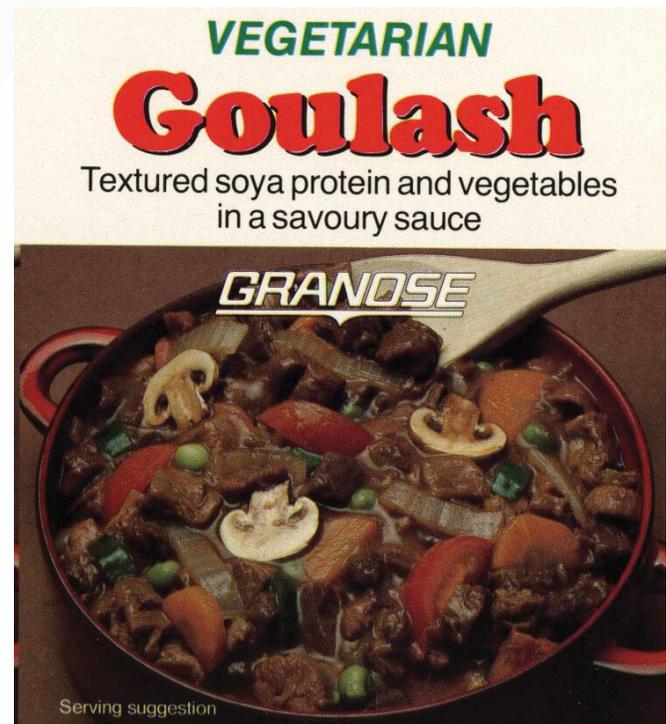
sauce seasoned with paprika and tomato. Contains no animal products.”

800. **Product Name:** Mealmaker: Soya food–Chunks.

**Manufacturer’s Name:** Mysore Snack Foods Limited.

Marketed by Voltas Limited.

**Manufacturer’s Address:** 19, Platform Road, Bangalore, 560-020, India.





**Date of Introduction:** 1978.

**Ingredients:** Defatted soya flour, spices.

**Wt/Vol., Packaging, Price:** 250 gm paperboard box. Maximum price Rs. 7.20. Local taxes extra (printed on box).

**How Stored:** Shelf stable.

**New Product–Documentation:** See above. Ad for Mealmaker in Soyaneews (Sri Lanka). 1978. Nov. p. 6. “Mealmaker: The delicious meat extender. Manufactured by Mysore Snack Foods Ltd. (Bangalore 560 023, India). Marketed by Kissan. This ad originally appeared in *Femina*.

Label. 1987. 5 by 7.25 by 2 inch box. Green, yellow, and red, with photo on front and back of TVP chunks (1/2 to 5/8 inch diameter) being mixed in a stainless steel bowl, surrounded by vegetables. Text in both English and Hindi. “New. 100% Vegetarian. Tasty dishes every day of the year. Imagine a whole variety of tasty vegetarian dishes every day of the year. Even some of those for which you have had to depend on seasonal vegetables. Not any more. You have Mealmaker. Just refer to our simple, tasty Mealmaker Recipes inside this pack. Easy to make and delicious, every one in your family will love it. Mealmaker comes to you in rich golden chunks. With protein nourishment. To make yours a happy Mealmaker home. Marketed by Voltas Limited. 19, J.N. Heredia Marg, Bombay 400 038, India.

Recipe leaflet: 9 by 5.75 inches. Black and red on white. 1 side in English, one in Hindi. Divided into Vegetarian Dishes (Yoghurt Curry, Vegetable Stew, Spinach Mealmaker

Dhokras, Coconut Kababs, Sesame Croquettes, Baked Cheesy Delight) and Non-Vegetarian Dishes (Prawn Biryani, Masala Chops [mutton], Mutton Curry, Moghlai Gravy). “Mealmaker makes those delicious dishes go a longer way—with more nutrition too.”

801. Boyer, Robert A. 1978. Technological gaps in vegetable protein texturization. *J. of Texture Studies* 9(1/2):179-89. [14 ref]

• **Summary:** Contents: Introduction. Vegetable protein raw materials. Raw material flavor problems. Current texturizing methods. Binders. Scientific literature gaps. Proposed new texturizing techniques. Conclusions.

“The growth of the textured vegetable protein industry has not kept pace with early predictions. High costs and marginal quality are among the factors retarding progress. Some of the technological gaps handicapping the industry are: lack of a process for preventing formation of off-flavors by enzymes while maintaining protein functionality, lack of a low cost thermosetting binder, lack of a protein suitable for spinning, and the indigestibility of certain soybean fractions.”

“Two methods of texturization dominate the industry today: extrusion by screw presses and wet spinning... Extrusion accounts for a majority of the tonnage of textured vegetable protein (TVP) being produced today.” The relatively inexpensive soy flour (about one-third the cost of

soy protein concentrate and one-sixth the cost of soy protein isolate) can be used as the starting material. The extruded products are usually in the form of dry granules or expanded and porous chunks.

Perhaps the most serious problem confronting any process based on the use of soy flour is the lack of digestibility and frequent incidence of flatulence. Address: Miles Laboratories, Worthington, Ohio 43085.

802. Duff, Gail. 1978. *Gail Duff's vegetarian cookbook*. London: Macmillan. 374 p. Index. 23 cm.

• **Summary:** Pages 14-15 note that: "Products made from soya beans are very important in meatless diets..." She uses tamari, miso, whole dry soybeans, and soya flour, but has an intense dislike of TVP (textured vegetable protein). Soy-related recipes include: Soya mayonnaise (made with soya flour, p. 81-82). Barbecued soya bean and tomato spread (p. 246). Crunchy soya bean sandwich spread (p. 247). Miso, onion and parsley sauce (p. 319). Basic soya bechamel (p. 319).

The section titled "Soya beans" (p. 190-97) has a nice introduction followed by recipes for: Salted soya beans. Basic method for soya beans. Soya bean hot pot. Soya bean blanquette. Soya bean goulash. Soya bean and tomato casserole. Spiced lemon soya beans. Barbecued soya beans. Soya beans with cucumber-Chinese style.

803. Farm, The. 1978. *Yay soybeans! How you can eat better for less and help feed the world*. Second revised edition. Summertown, Tennessee: The Book Publishing Co. 14 p. Illust. 22 cm. 2nd rev. ed. 1978, 14 p.

• **Summary:** The first edition of this creative little booklet, published in 1974, was printed with blue ink on white paper; this 1978 edition uses brown ink on white paper. Contents: Living on soybeans. Some of our favorite ways to eat soybeans. Basic cooked soybeans: Soybeans and tortillas, Soybean stroganoff, Soy fritters, Cheezy soybeans (Good Tasting Nutritional Yeast gives the cheezy flavor), Soyburgers, Soy nuts (dry roasted), Soy coffee. Soymilk: Using soybeans or using soy flour, Soy mayonnaise (made with soymilk), Soy yogurt.

Tofu: How to make at home (6 step process using nigari, epsom [sic, Epsom] salts, vinegar, or lemon juice as a coagulant), Tofu salad dressing, Tofu salad [like an eggless egg salad], Scrambled tofu, Pan fried tofu, Tofu cheesecake. Soy pulp: Introduction, Scalloped tomatoes and pulp, Soy pulp burgers, Soy pulp cookies. Soy flour: Basic salad and sandwich spread, Seasoned sandwich spread. TVP-Textured Vegetable Protein: Introduction, TVP tortilla and taco filling, Taco filling sauce, TVP spaghetti sauce, Sloppy Joes. Good Tasting Nutritional Yeast: Introduction, Melty cheese, Cheese crackers, Golden gravy, Yeast 'omelette.' Eggless cookery: Introduction, Pancakes (with soymilk), Chocolate cake (with sour soymilk), Cookie crust for cheesecake. A word about

vitamin B-12. Some facts about people and food. Plenty. Address: Tennessee.

804. Gaskin, Ina May. 1978. *Spiritual midwifery*. Revised ed. Summertown, Tennessee: The Book Publishing Co. 473 p. Illust. Index. 23 cm. [10+\* ref]

• **Summary:** The original 1975 edition of this pioneering book, by "Ina May and The Farm midwives" (380 p.) did not mention soyfoods. However in this edition, the section titled "Taking Care of Yourself While You're Pregnant: Nutrition" (p. 227-31) states: "You will need to increase your protein intake by about 30%. On the Farm, we are complete vegetarians, and our main source of protein is soybeans and soy products such as soymilk; soy yogurt; tofu (soybean curd); hard, pressed tofu (more concentrated); soymilk ice cream; and TVP-texturized vegetable protein. Soybeans and soy products are very high in protein of a quality comparable to eggs and mother's milk (the international standards for complete protein).

"You can get plenty of protein for pregnancy by eating daily one cup of soybeans plus 12 ounces of soymilk or yogurt, or ½ lb. tofu and a pint of soymilk, or one cup hydrated TVP and a cup of soymilk or soy yogurt, or one quart of soymilk or soy yogurt and ½ cup of soybeans. We highly recommend a vegetarian diet for a healthy pregnancy and life."

Note: This is the second earliest published English-language document seen (March 2007) that uses the term "soymilk ice cream." Address: The Farm, Summertown, Tennessee.

805. Moore, Shirley T.; Byers, Mary P. 1978. *A vegetarian diet: What it is; how to make it healthful and enjoyable*. Santa Barbara, California: Woodbridge Press Publishing Co. 120 p. With 7 color photos. 23 cm. [111 ref]

• **Summary:** A sound, readable, and well documented book written by Seventh-day Adventist nutritionists. Covers up-to-date information on nutritional adequacy of vegetarian diets, types of vegetarians, daily food guides, and sample menus. The tone of Chapter 1 is quite defensive, as if Seventh-day Adventists had been previously accused of being unscientific, faddists, and/or quacks.

Contents: Acknowledgments. Preface. 1. A vegetarian diet: What it is; what it is not. 2. Filet mignon or pecan patties. 3. Food and people. 4. Now for the menu. 5. The littlest vegan: A nonmeat diet for infancy. 6. Why the vegetarian lifestyle. Conclusion. Appendixes: A. Sample menus for a week. B. Suggestions for dining away from home: Full-fledged vegetarian restaurants, restaurants catering to cultural food tastes (Chinese, Japanese, Greek, Italian, Mexican), cafeterias, smorgasbords, restaurants, salad bars, airlines, supermarket meals (no specific restaurants are mentioned—only these types). C. A sampling of vegetarian cookbooks [28 books are listed, many of them by Seventh-

day Adventist authors]. D. Meat analog manufacturers [ADM, Cedar Lake Foods, General Mills, Loma Linda Foods, Miles Laboratories / Worthington, Millstone Foods]. Address: 1. PhD; 2. M.A. Both: Loma Linda Univ., Loma Linda, California.

806. Shearson Hayden Stone Inc. 1978. Special survey: U.S. and Canadian soybean processing facilities. New York, NY. 8 p. Nov.

• **Summary:** The USA has a total soybean crushing capacity of 1,226 million bushels/year based on 330 available days. A ranking of the capacity of major U.S. soybean crushers is as follows (as of 1 Nov. 1977):

Cargill 224 million bushels/year. 18.3% of industry total.  
Archer Daniels Midland 178 million bushels/year.

14.5% of industry total.

Central Soya 94 million bushels/year. 7.7% of industry

total.

A.E. Staley 93 million bushels/year. 7.6% of industry total.

Ralston Purina 92 million bushels/year. 7.5% of industry total.

All Co-ops 232 million bushels/year. 19.0% of industry total.

Other 312 million bushels/year. 25.4% of industry total.

The leading soybean crushing states (in million bushels per year capacity) are: Illinois 258, Iowa 176, Minnesota 83, Tennessee 73, Indiana 70, Arkansas 69, Missouri 68, Mississippi 59, Ohio 50.

The individual soybean crushing plants with the largest capacity are (\* = food grade plant): ADM\* (Decatur, Illinois) 150,000 bushels/day. Quincy Soya (Quincy, Illinois) 120,000 bushels/day. Cargill, Inc. (Memphis, Tennessee) 100,000 bushels/day. A.E. Staley (Des Moines, Iowa) 100,000 bushels/day.

Canadian soybean crushers capacity (total 148,000 bushels/day) are: Maple Leaf Mills (Windsor, Ontario) 60,000 bushels/day. Victory Mills (Toronto, Ontario) 42,000 bushels/day. Canadian Vegetable Oil Processing (CVOP, Hamilton, Ontario) 33,000 bushels/day. Maple Leaf Mills (Toronto, Ontario) 13,000 bushels/day. Total: 148,000 bushels/day. Note: Maple Leaf Mills is the largest Canadian soybean crusher, with a total capacity of 73,000 bu/day.

807. **Product Name:** Textured Soy Flour?

**Manufacturer's Name:** Mysore Snack Foods Co.

**Manufacturer's Address:** Bangalore, India.

**Date of Introduction:** 1978?

**New Product–Documentation:** R. Nave. 1979. LEC Report No. 7. p. 96. "Experience with extrusion cookers in India." Mysore Snack Foods Company of Bangalore has a Wenger X-25 extrusion cooker and is producing product for Indian government feeding programs. "They attempted to produce TVP for the commercial market but withdrew after a few

months."

808. Fillip, Janice. 1979. Refabricated soy protein. *Whole Foods (Berkeley, California)* 2(1):26-28, 30. Jan.

• **Summary:** Contents: STP, LTD, TVP, QED–Uh, what is it? From soy to flour. Isolating the isolate. Extruding textures. If it's fab, is it food? A small step for soy, a giant step for proteinkind. Address: California.

809. Nave, Robert. 1979. Experience with extrusion cookers in India. *LEC Report* No. 7. p. 95-100. D.E. Wilson, ed. Low-Cost Extrusion Cookers: Second International Workshop Proceedings (Fort Collins, CO: Dept. of Agric. and Chemical Engineering, Colorado State Univ.). Held in Dar es Salaam, Tanzania.

• **Summary:** Contents: Background and objectives of SPRA. Extrusion cookers at SPRA. Other extrusion cookers in India. Types of products produced at SPRA on various machines: Commercial products, feeding program products. General observations. The Brady Crop Cooker and Wenger X-900: Comparisons of machines and cost, advantages of each machine. Basic requirements for production facilities housing a LEC. Conclusion.

"I. Background: A. The Soya Production and Research Association, which we established in 1971, grew out of our desire: (1) To establish a project for the utilization of soybeans which were being introduced as a farm crop but for which no market seemed to be developing. (2) To develop some soybean-based food products which could be processed in large quantities and which would be readily accepted by the Indian people; and (3) To produce low-cost soybean-based foods and yet be a viable company which could produce some surplus income for use in developmental and charitable projects.

"B. SPRA is a partnership of the Methodist Church in India and the G.B. Pant University of Agriculture and Technology which is the Uttar Pradesh State Agricultural University... (D) SPRA has made it a point not to be dependent on government feeding programs.

"II. There are three extrusion cookers at SPRA. These are a Wenger X-25 with the necessary parts to convert it to an X-900, a Brady Crop Cooker and a Wenger X-155... The X-900 and Brady Crop Cooker can process unground soyabeans and do not require water, steam or a drier to reduce moisture after processing. (B) Mysore Snack Foods Company of Bangalore has an X-25 and is producing product for government feeding programs. They attempted to produce TVP for the commercial market but withdrew after a few months.

"IV. Types of products produced by SPRA on various machines: A. Commercial Products: 2777Textured Vegetable Protein, Corn-Defatted Soya Weaning Food, Rice-Defatted Soya Snack Food (flavored with peanut oil and local spices). B. Feeding program products: Corn and ground soyabeans,

Full-fat soya meal from whole ground soyabeans, Full-fat soya meal from whole unground soyabeans, Full-fat soya meal from whole dehulled soyabeans.

“Our inability to put the full-fat soya flour... on the market is due to our inability to find suitable packaging.”

“Advantages of each machine:

“The X-900: high production per hour, lower cost of production, easier cleaning, more versatile, inactivation of trypsin inhibitor good (0.05 when measured as urease activity).

“The Brady crop cooker: lower initial cost, easier to operate, less skill required for maintenance, inactivation of trypsin inhibitor good (0.10 when measured as urease activity).”

“VII. Conclusions: At SPRA we feel that LEC’s can fulfill an important need in providing low-cost nutritious foods for both the commercial market and feeding programs in man Third World countries.” Address: Soya Production and Research Assoc., Bareilly, India.

810. Shurtleff, William; Aoyagi, Akiko. 1979. Soybeans (Document part). In: W. Shurtleff and A. Aoyagi. 1979. *The Book of Tofu*. New York: Ballantine Books. 433 p. See p. 58-75. Chap. 4.

• **Summary:** Contents: Introduction. Soy protein foods—Traditional non-fermented soyfoods: Whole dry soybeans, soynuts, roasted soybeans, fresh green soybeans, soy sprouts, natural soy flour and soy grits, roasted soy flour (kinako).

Traditional fermented soyfoods: Tempeh, miso, shoyu (Japanese natural soy sauce), natto (fermented whole soybeans, including Japan’s cracked natto {*hikiwari natto*} and finger lickin’ natto {*yukiwari natto*, containing rice koji and salt}, and thua-nao from northern Thailand), soy nuggets (inc. Japan’s Hamanatto and Daitokuji natto).

Modern western soyfoods (developed using high-level technology): Soy flakes, defatted soy flour and grits, soy protein concentrates, soy protein isolates, spun soy proteins, textured soy proteins (TVP is an ADM brand name), textured soy concentrates, soy oil products. Address: P.O. Box 234, Lafayette, California 94549.

811. **Product Name:** Flavored Textured Soy with Crispy Texture [New Improved Bacon, Type Q Bacon, Pepperoni, Italian Sausage, Breakfast Sausage, Bacon Flavored Chips, Beef Strips, Chicken Strips, Taco Flavored Granules].

**Manufacturer’s Name:** Westward Industries, Inc.

**Manufacturer’s Address:** 1819 S. Meridian, Wichita, Kansas.

**Date of Introduction:** 1979 January.

**Ingredients:** Textured soy flour plus flavorings.

**How Stored:** Shelf stable.

**New Product–Documentation:** Talk with Jim Beyers.

1999. May 3. Westward Industries was started by Ken Towers. He licensed the rights to make TVP but developed

his own flavoring systems in-house. In Jan. 1979 Westward Industries started making standard textured soy protein products in Kansas at 1819 S. Meridian, Wichita. Westward didn’t sell any products under its own brand; it was either sold in bulk to foodservice or private labeled for all the glass-packers in the country like John R. Sexton, Durkee Foods, R.T. French, McCormick, Safeway, CFS-Continental, Ponderosa Steak Houses, Pizza Hut—any company that sold bacon-bits in jars. “We were the largest processor of imitation bacon bits in North America, probably for about ten years.”

812. Davis, Melissa. 1979. The soy of cooking: Out of the field, into the kitchen. *Washington Post*. March 15. p. E1, E14, E20.

• **Summary:** Starts by discussing Henry Ford’s interest in and work with soybeans. He wanted to find a way to “grow automobiles out of the soil. In 1940 he discovered that soybeans were his bumper crop.”

Last week a milestone in soybean history was made on Capitol Hill [Washington, DC]. “About 500 people including senators, representatives, ambassadors, diplomats and freeloaders turned up at the International Soybean Fair.

While Chai Zemin (of the People’s Republic of China) and Bob Bergland (U.S. Secretary of Agriculture) stood shaking hands, people pushed and shoved to get to the bar and to hors d’oeuvres made from every soybean product imaginable—soy flour, tofu or bean curd, textured vegetable protein (TVP), soy milk, soy sauce, etc. Also mentions tempeh and miso.

Although most Americans think of soybeans as something fed to chickens and cows, companies like Miles Laboratories, Procter & Gamble, Ralston Purina, Nabisco and Kraft are “hoping we will take soybeans into our kitchens.”

The hors d’oeuvres at the Soybean Fair (10 dishes prepared by chefs from the Chinese Embassy and 13 presented by the Food Protein Council) attempted to prove that soy protein foods can be tasty and attractive. Although one critic said, they ‘taste like vacuum cleaner dust,’ some of them came close (the Morning Star Farms bacon analog had a dusty nutty taste very unlike bacon). There were a few interesting hors d’oeuvres including soy nuts and garlic smothered bean curd.”

Then comes a description of how to cook soybeans using 3 different methods: (1) Pressure cooker method—45 minutes at 10-15 pounds pressure. (2) Regular method—soak, then cover and simmer for 4½ to 5 hours, or until tender. Add water as needed. (3) Freezer method: Pour the soaked beans with water into ice trays or freezing containers. The beans should be just covered with water. Freeze overnight, or as long as you like. Remove from freezer, place in a pot with sufficient water to cover. Cover and simmer (do not boil) for 2½ to 3 hours, or until tender. Add more water if needed.

Then come four recipes: (1) Soy nuts. (2) Peanut Butter Cookies (with 3 cups soy flour; makes 60 cookies). (3) Fried bean curd with garlic and scallions (6 servings). (4) Soyburgers (with 7 cups cooked soybeans; makes 16. From *The Farm Vegetarian Cookbook*).

The event was largely sponsored by the Food Protein Council and its member companies. "There were a few interesting hors d'oeuvres including soy nuts and garlic smothered bean curd."

813. Fitch, Peter. 1979. Vegetable proteins in snacks. *J. of the American Oil Chemists' Society* 56(3):304-05. March.

• **Summary:** Contents: Abstract. Introduction. Product applications.

Key issues concerning snacks are a high degree of convenience (ready to eat/serve), nutritional value, and consumer appeal. One soybean snack [oil-roasted soynuts] is made by subjecting whole soybeans to a patented flash-frying technique, which causes them to expand and change texture so that they are virtually indistinguishable from roasted nuts. "By selection of cooking oil, process time, and postflavoring, it is possible to arrive at a highly acceptable quality snack with novelty appeal and excellent nutritional properties. The protein content of the product is in the order of 35%. Antioxidants and suitable packaging ensure adequate shelf stability for the 25% oil content, most of which is soy origin and present in the bean prior to processing.

"Such a product is currently on sale in a limited section of the British Retail Market, where it is in the form of the whole bean. For manufacturing purposes, a kibbled or particulate material would probably be more desirable."

Soy proteins can also be added to expanded snacks. In Britain, textured soy proteins are used in snacks such as a meat pie and pizza. Cakes, biscuits, and breads are enriched with soy flour. A photo shows Fitch. Address: The British Arkady Company Ltd., Arkady Soya Mills, Old Trafford, Manchester M16 0NJ, England.

814. Kadane, V.V. 1979. Vegetable proteins in cooked and/or fermented sausages. *J. of the American Oil Chemists' Society* 56(3):330-33. March. [21 ref]

• **Summary:** Contents: Abstract. History of soy proteins in cooked sausages in Europe—Reasons for acceptance. Economical factors of increased sausage consumption—Reasons for the TVP need. Spun vegetable proteins. Nutritional aspect of soy proteins in sausages. Brine extension of sausage meats. Use of soy proteins in dry and semidry meat products. General processing procedures with soy proteins. Production of fermented and dry sausages with soy proteins. Role of structured concentrates and textured proteins. A photo shows Kadane. Address: Central Soya Reprasantzbuero, c/o Braddock and Co., GmbH, P.O. Box 1150, Berliner Alle-5, 607 Langan, West Germany.

815. Munoz, Juan M.; Sandstead, H.H.; Jacob, R.A.; Logan, G.M.; Reck, S.J.; Klevay, L.M.; Dinitzis, F.R.; Inglett, G.F.; Shuey, W.C. 1979. Effects of some cereal brans and textured vegetable protein on plasma lipids. *American J. of Clinical Nutrition* 32(3):580-92. March. [94 ref]

• **Summary:** The hypothesis that dietary fiber lowers serum cholesterol was tested and confirmed in ten healthy men, ages 19 to 54 years. Total plasma cholesterol decreased 14% when "soybean hulls" were added to the diet. Textured vegetable protein (TVP) was also added. Soybean hulls, by themselves, contained 92% dietary fiber. Address: USDA Science & Education Administration, Human Nutrition Lab., Grand Forks, North Dakota 58201.

816. Leviton, Richard. 1979. Itinerary and notes from trip to the Midwest in March-April to study soyfoods and soybeans. Colrain, Massachusetts. 65 p. April. Unpublished manuscript. 28 cm.

• **Summary:** Contents (places and people visited): The Soy Plant, Ann Arbor, Michigan: Their soy deli, deli items on sale and prices, talk with Steve Fiering. Wonder Life Corp. of America, Des Moines, Iowa: Founded 1957, bio-humic method like organic farming. Two bio-humic farmers: Owen Langlie in Mankato, Minnesota (p. 10); Cyril Vernon in Iowa. Midwest Soya International, Cedar Falls, Iowa: Talk with Wes Randall, Altoona processing plant, variety chart on wall with 1979 yields and 4-year average yield (Corsoy, Amsoy, Marion, Beeson, Private SS, Agripro 25, Wayne). George Strayer of Agricultural Exports, Hudson, Iowa (p. 15). Iowa State University, Ames, Iowa: Walt Fehr and the public soybean breeding program, breeding soybeans low in lipoxygenase and linolenic acid, Dr. Harry Snyder and work on lipoxygenase and antinutritional factors. Robert Fischer, Soypro, Cedar Falls, Iowa (p. 25). Professional Farmers in Cedar Falls, Iowa. American Soybean Assoc., St. Louis, Missouri (p. 29). Pfizer Genetics, St. Louis, Missouri (p. 30). Several organic farmers in Arcola, and Oblong, Illinois. Les Karplus. ADM, Decatur, Illinois. A.E. Staley Mfg. Co., Decatur, Illinois. INTSOY program at the University of Illinois: John Santas, Wm. Thompson, Robert Howell, Joe Jackobs, Bill Judy, L.S. Wei, John Erdman, R.L. Bernard, Ted Hymowitz, Dr. Hadley. American Oil Chemists' Society, Champaign, Illinois (p. 55). National Soybean Crop Improvement Council (NSCIC), Urbana, Illinois: Robert Judd. Northern Regional Research Center, Peoria, Illinois: Walter Wolf, Joe Rackis. Golden Key Farm: Frank Pilotte. Joe Rakosky, food industry consultant. Fearn Soya Foods. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

817. Tofu Shop (The). 1979. Workshops in tofu-making on the community level (Portfolio). Telluride, Colorado. Eight inserts. 28 cm.

• **Summary:** Rather than being a typical portfolio, with many

inserts, that all arrive at one time, this is a collection of eight documents all related to a common theme.

(1) “Workshops in community level tofu-making: Beginning in April 1977, the Tofu Shop of Telluride, Colorado, is making available to interested groups and communities training workshops in tofu-making on the community level. Topics to be covered in these workshops will include: The process of tofu-making. Setting up shop. Other soy products. Marketing. Financing and fundraising. Bookkeeping and record keeping. Restaurants and delis, Nutritional info. Community education. The community food chain. The personal benefits. Inner-shop organization. Contacts and resources.

“Workshops are led by members of the Telluride Tofu Shop and may include an experience in tofu-making... Apprenticeships—The Telluride Tofu Shop also has a limited number of openings for workers / owners in its restaurant and wholesale business. A one year time commitment is required.”

(2) “Dear \_\_\_: The Telluride Tofu Shop was born in October, 1977, when we moved into our small, unfurnished shop with a meager one-thousand dollars capital and began making tofu. Now in April, 1979, twelve of us operate a growing restaurant and wholesale food business with annual sales approaching fifty-thousand dollars annually. What happened during this period is something we want to share with other communities and groups of interested people.” So we are offering a workshop in “How to Start a Community Tofu Shop.” (3) “The community level tofu shop and the local food chain.” A complex circular diagram shows many complex relationships.

(4) “Supplies and information for community level tofu-making.” Lists five key organizations: (a) Soy Crafters Association of North America (SANA; Greenfield, Massachusetts, Richard Leviton). (b) New-Age Foods Study Center (Lafayette, California; Books, brochures, tofu-making materials, slides, tapes, general info.). (c) Bean Machines Inc. (Bodega, California; Larry Needleman. Tofu-making equipment from Japan). (d) Farm Foods (Summertown, Tennessee. Attn. soydairy; tempeh starters, tvp, cookbook, general info.). (e) Westbrae Natural Foods (Emeryville, California; Nigari).

(5) A tofu recipe: For making approximately 15 pounds of tofu. Gives equipment, ingredients (soybeans and nigari), and recipe [process].

(6) A settling box press. Two views showing how to make one yourself.

(7) Soymilk: Nutritional information and recipes courtesy of The Spinning Kitchen, Boulder, Colorado.

(8) Our favorite tofu recipes.

Letter (e-mail) from Matthew Schmit. 2009. March 30. “Our motivation for doing tofu workshops was primarily to spread the word. But also hoping to make a little money.

“We (Christie Mather and myself) conducted three

workshops in early 1979. There were approximately 12-15 participants per workshop. These workshops were far from Telluride, so there was no concern about competition.

“The first was in Arcata, CA, (little did I know I would be moving there soon), to a group known as the Arc Community which was trying to form an intentional community to purchase land. My sister and brother-in-law were members, hence our invitation. After we left, they began making tofu weekly in home kitchens and selling it informally in the community. When I moved to Arcata, I joined the group as they began planning to rent a production space. As it turned out, it was too big of a leap for them. Their effort dwindled. I went ahead and opened the Arcata shop. The Arc Community eventually disbanded.

“The second workshop was held in Ashland, Oregon, in the home of friends from Telluride. They were very involved in the Ashland Food Co-op. Later when the Co-op expanded and installed a commercial kitchen, co-op members began making tofu in-house. I visited them once during production after moving out to Arcata. Eventually, Ashland Soyworks started up and Co-op production stopped.

“The third workshop was held in The Dalles, Oregon, also in the home of ex-Telluridians. As far as I know, nothing every grew out of that.” Address: 116 N. Oak St., P.O. Box 69, Telluride, Colorado 81435.

818. Hanes, Phyllis. 1979. Have a go at tofu: Cheeselike food from Orient a versatile economizer. *Christian Science Monitor* 71(130):14. May 31. Eastern edition.

• **Summary:** “Anyone who is serious about cutting down on food expenses has not really tried until he’s had a go at tofu. A favorite food in the Orient for years, tofu looks to most of us like a soft, white cheese, but it is far more versatile. The time has come for tofu to be used in all kinds of dishes in Western kitchens, because it is economical. It has about as much protein as a pound of hamburger, but less fat. It blends easily with all kinds of food, with meat or fish, and in dishes such as stuffed zucchini, enchiladas, sandwiches, or scrambled eggs...”

“The answer to using more tofu is found in a most comprehensive book, *The Tofu Cookbook*, by Cathy Bauer and Juel Anderson (Rodale Press, Emmaus, Pennsylvania, \$8.95). Instruction are just about perfect, with answers for all the questions you could possibly think of on this subject.”

Contains a recipe for Kima (Indian Curry) with tofu. Also mentions okara, TVP, and ymer (a dairy product used as a topping). Address: Food editor, Christian Science Monitor.

819. *Food Engineering International (Chilton’s)*. 1979.

Emulsifier based on soy protein: It permits a 40%-50% calorie reduction in salad dressings without loss of quality. Also, stability is improved significantly. 4(6):36-37. June.

• **Summary:** Discusses Nutrisoy 101, an emulsifier developed and made by ADM. It offers substantial cost

savings by allowing the user to reduce oil and/or egg yolks without altering the appearance, consistency, or eating characteristics of the product. This free-flowing powder contains approximately 34% protein and 30% oil. “The label declaration for it in the finished product is as follows: soy flour, partially hydrogenated soybean oil, sodium phosphate.”

820. Jaeger, Martin. 1979. The likely effects on Ontario soybean producers of the shift in the location of a soybean crushing plant from Toronto to Windsor. Toronto, Ontario, Canada: Ontario Ministry of Agriculture and Food. 17 p. June. Series: Economics Information. 30 cm. [6 ref]  
 • **Summary:** Contents: Foreword. Trends in the Ontario oilseed industry: Production trends, facility changes, institutional trends. The current situation. The change: UCO (United Co-Operatives of Ontario) facilities, Maple Leaf-Monarch facilities. The likely effects of the change on Ontario farmers: The effect on pricing and delivery patterns, pricing during the close of navigation, direct delivery, effects of the new processing location on elevators. Summary. References.

Index to tables: 1. Oilseeds production, imports and exports, Canada, crop year 1969-70 to 1977-78. 2. Soybean production and utilization, Canada, 1969-1977. 3. Area, yield, and production of soybeans, Ontario, 1967-1978. 4. Farms reporting soybeans and area in soybeans, Elgin, Essex, Kent, Lambton, and Middlesex, Statistics Canada Survey, mid-year 1969, 1977, and 1978. 5. Availability of major edible oils, by type, Canada, 1967-1977 (calendar year). 6. Supply and disposition of oilseed meals, by crop year, Canada, 1967-68 to 1977-78, crop year beginning August 1. 7. Soybean marketings in Ontario as a percentage of crop year total by month, 1953-54 to 1977-78.

Page 1: “Over the years, plant breeders have developed varieties which can mature with fewer heat units.” Soon, even earlier varieties will be introduced, making it possible to expand the Canadian areas suited to soybeans well beyond the traditional five-county area of southwestern Ontario (Essex, Kent, Lambton, Elgin, and Middlesex).

Pages 11-12: In 1972, the Canadian federal government expropriated some property on the Toronto shoreline (at the northwest end of Lake Ontario) which included the Maple Leaf crushing plant. Maple Leaf began to seek a new location. In 1977 it announced that it was forming a partnership with Monarch Foods (Lever Bros. Limited) to construct an integrated crushing and refining plant in Windsor alongside the proposed United Co-operatives of Ontario (UCO) deep water terminal on the Detroit River. The UCO and Maple Leaf-Monarch facilities are scheduled to open in the summer of 1979. Maple Leaf-Monarch is owned equally by Maple Leaf Mills and Lever Bros. Ltd. Lever Brothers Ltd. was not previously in the oilseed crushing business in Canada, although it is in this business elsewhere

in the world on a far larger scale than was Maple Leaf Mills in Canada.

The author thinks the opening of the Windsor crushing plant may increase slightly the average price received by Ontario farmers for soybeans. Address: Economics Branch, Ontario Ministry of Agriculture and Food, Legislative Buildings, Toronto, Ontario M7A 1B6.

821. Morgan, Dan. 1979. Cotton, wheat and corn bowing to the reign of king soybean. *Washington Post*. July 24. Section A. p. 1, col. 1.

• **Summary:** According to unofficial private estimates, America’s largest soybean crushers (with their estimated capacity in millions of bushels) are: Cargill 224, ADM 178, Central Soya 94, A.E. Staley 93, and Ralston Purina 92.

“In West Germany soybean oil has gained wide acceptance and is produced by such major companies as Unilever. But the oil has encountered strong resistance in France as a cooking oil because ‘the French prefer a richer, peanut smell and like butter,’ says the American Soybean Association’s Michael A. Phillips. Efforts to promote soybean oil in France also have encountered strong resistance from French agricultural interests.

“Earlier predictions that Brazilian soybean products would supplant those of the United States in markets abroad have proved to be exaggerated. Since the early part of the decade, foreign and local interests have invested massively in processing plants in Brazil. The Brazilian government backed this development with generous concessions to foreign investors and with enormous subsidies to exporters of meal. These subsidies have amounted to as much as \$1 a bushel and have enabled exporters in Brazil to offer European and Japanese feed buyers discounts of \$20 to \$30 a ton below the U.S. price. But this year U.S. trade negotiators—spurred by the powerful Midwest farm bloc—obtained a promise from Brazil to phase out the subsidies.”

822. Horan, F.E. 1979. Corporations and the world food problem. Paper presented at World Game ‘79, New York University, Loeb Student Center, New York City, NY. July 18. 20 p.

• **Summary:** Focuses on ADM, vegetable proteins, TVP, cereal-soy blends, and the Food for Peace Title II program. Figure 1 shows percentage of after-tax income spent on food: Canada 14.8, France 16.5, UK 16.6, Netherlands 16.9, USA 17.0, West Germany 21.2, Korea 46.8, Philippines 50.8.

In the period 1963-65, the percentage of total protein obtained from vegetable and from animal sources was: Developing regions: 81/19. Developed regions 46/54. World 68/32. Address: Vice President, R&D Div., Archer Daniels Midland Co., Decatur, Illinois.

823. Leviton, Richard. 1979. Of soybeans, the soil, herbicides & farmers: a visit to the Midwest soybean belt

(Continued—Document part IV). *Soycraft (Greenfield, Massachusetts)* 1(1):20-25. Summer.

• **Summary:** (Continued): “The Soyfoods Industry Viewed from the Field: My final concern was with future supplies of food-purpose soybeans and with how soybean producers and distributors view the rapidly growing soyfoods industry. I asked Larry Eggan how he would characterize the current production and consumption pattern in the United States. ‘The soybean crop is one that, every year, there are people who think this is the year we are going to over-produce, but so far we have never had over-production on soybeans, because the demand for protein keeps on going up.’ Plantings for 1979 are forecast to be up by seven percent over 1978; this would mean sixty-eight-point-eight million acres planted to soybeans, which could provide total harvests of nearly two billion bushels. ‘There is, very simply, a boom. The farmers created the largest crop the U.S. has ever seen in soybeans last year. Current estimates say there is going to be no surplus and that’s astounding. I see soybean production skyrocketing, but I see consumption skyrocketing also.’ Wes Randall regards the soyfoods industry as ‘a sleeping giant’ and believes we are dealing with ‘an untapped market.’ Dan Burke, of Pacific Soybean and Grain, in San Francisco [California], suggests ‘the soyfoods market will be for many, many years to come, still a minor portion of the market for soybeans. Yet that’s why we feel it’s so important on our part to come up with some varieties and practices of better protein development in a particular bean.’

“Larry Eggan believes meat will always be available but it will follow the typical pattern in Japan today, where beef costs twelve to thirteen dollars a pound. ‘I think within the next five or ten years we are going to see soy products take over the place of meat in the consuming public’s mind.’ Textured vegetable protein products will undoubtedly constitute an important portion of this increase because more research has been conducted in that area than any other. ‘Tofu, as the raw product, is just like TVP was ten years ago when it was first developed.’ Henry Fieldson sees the soyfoods industry affecting a few growers in ‘a gradually increasing way’ yet he doesn’t think it will be too long before ‘we find ourselves out here in the cornbelt producing more acres of soybeans than corn. We’re rapidly approaching that stage because the products needed in the world food economy are protein and oils, rather than carbohydrates, which is what corn produces.’

“What is necessary here is to make tofu a household word, Henry suggests; then we will have a different picture. Dan Burke recommends traditional soyfoods manufacturers to ‘go ahead full blast’ and ‘to expose the product to as many people as possible’ and he adds, ‘I think that within the next ten years the proliferation of soyfoods eaten in the United States is going to be very dramatic. And I think the greater growth is going to be in the area of traditional, Asian-type foods.’ Larry Eggan voices agreement: ‘As people are made

more aware of soyfoods and are willing to accept them, it’s going to come very fast. There’s going to be a big explosion, and I don’t think it’s going to take any longer than ten years, maybe five.’ As the market for high-protein soyfoods expands, however, so, too, will the number of companies producing them. Dan Burke offers this mildly ominous forecast. ‘Very few large food companies are involved in the traditional soyfood industry at the present time. But in the years to come, I think they will be; and what they will do is, rather than do a great deal of research and development themselves, they will sit back and wait for the acceptance of soyfoods by the American market and then they will acquire successful soyfoods companies.’

“Whether or not this gloomy, or perhaps cheerful, forecast is correct, we cannot presently determine. Yet we can be certain that soybean growers and distributors will be scrutinizing this new market and re-evaluating their production standards, while seeking new varieties of soybeans, better suited for soyfoods manufacture, in the years to come.” Address: Colrain, Massachusetts.

824. Morgan, Dan. 1979. Once-lowly soybean is nation’s top cash crop, beating corn and wheat. *Los Angeles Times*. Aug. 13. p. D14, D16.

• **Summary:** Across the American South, large areas that had once been planted to cotton are now planted to soybeans. In 1979 American farmers will harvest more acres of soybeans than of either corn or wheat. Soybeans (all 21.3 billion bushels in 1979) are now also the leading U.S. cash crop, producing more income for farmers than corn, wheat, or cotton. In addition, soybean exports now “bring in more revenue than any other U.S. crop—\$6.9 billion in 1978 compared with \$5.9 billion for feed grains and \$4.6 billion for wheat.”

“The rise of soybeans to the status of a glamour crop came about through” the increased consumption of animal products (especially poultry and hogs) at home and abroad since World War II. Soybean meal became the main source of protein in feeds for these animals.

Pfizer and several other pharmaceutical firms have entered the soybean seed business.

A bar chart shows the largest U.S. soybean processors, based on the estimates of private security analysts. Figures are for capacity in millions of bushels per year: Cargill 224. ADM 178. Central Soya 94. A.E. Staley 93. Ralston Purina 92.

Soybeans grown near the Mississippi River—“the ‘Main Street’ of the world grain trade”—are like to be exported. The soybean trade up and down this river is largely dominated by multinational grain companies such as Cargill, Continental, and Bunge. In a 180-mile stretch of river from Osceola, Arkansas, up to Silkeston, Missouri, are 10 grain terminals belonging to those 3 multinationals. Address: The Washington Post.

825. Eldridge, Arthur C.; Black, L.T.; Wolf, W.J. 1979. Carbohydrate composition of soybean flours, protein concentrates, and isolates. *J. of Agricultural and Food Chemistry* 27(4):799-802. July/Aug. [22 ref]

• **Summary:** Products tested include: Nutrisoy 7B, toasted Nutrisoy, and unflavored minced TVP (from ADM), Baker's Concentrate, Promosoy 100 [soy protein concentrate made by aqueous alcohol leach process], and Promine D [isolate] (from Central Soya), uncooked flavored Crumbles [textured soy flour] (General Mills, Inc.), undenatured GL-301 [soy protein concentrate made by dilute acid leach process], and denatured Patti-Pro [soy protein concentrate made by dilute acid leach process] (Griffith Laboratories, Inc.), FPC [food protein concentrate, made by steaming & water leach process] (Swift and Co.), Edi-Pro N, Edi-Pro A, Supro 700, Supro 610 (isolates from Ralston Purina Co.).

Dehulled, defatted soybean flours contained the following mean sugar content: rhamnose 0.6%, fucose 0.1%, ribose 0.1%, arabinose 2.4%, xylose 1.0%, pinitol 0.9%, mannose 0.9%, galactose 7.6%, and glucose 8.1%. The same sugars were found in soybean protein concentrates; however, the amount of each was less. Soybean protein isolates contained mannose 0.8%, galactose 0.5%, and glucose 0.5%, with traces of the other five sugars. Address: Northern Regional Research Center, Peoria, Illinois.

826. National Soybean Processors Assoc. 1979. Selected events, quotes, and highlights in the history of NSPA (Continued—Document part II). Washington, DC. 7 p. Aug. 24. 28 cm. [5 ref]

• **Summary:** Continued: “1956: NSPA began shortening its business sessions conducted during the annual meeting, and also introduced a session of outside speakers. Basically, the members wanted to ‘speed up the proceedings.’

“1956: NSPA witnessed the introduction of large-scale financing of oil and fat exports under P.L. 480, and played the prime role in organizing the Soybean Council of America, intended to pursue market development.

“1957: From the annual report of the Washington representative: ‘Fortunately, our basic (NSPA) thesis that soybean production warrants continued expansion—that a vast unfilled domestic market exists for protein feeds—that the

only problem is an export market for surplus oil—seems to have almost unanimous acceptance by government and by a large part of the trade.’

“1957: From an address to the NSPA Annual Meeting by Dr. Earl Butz: ‘The phenomenal growth of the soybean industry was made possible by the ability of growing markets to absorb soybean products (oil and meal) at competitive prices. Your industry has always insisted that soybeans and soybean products be priced to sell in both domestic and world markets.’

“1958: From the report of the Chairman of the Board: ‘1957-58 has been an interesting year—a year in which many new records are being established: A record production of 479 million bushels... 8,137,000 tons of soybean meal produced... 7,990,000 tons of soybean meal consumed domestically... 3,710,000,000 lbs. of soybean oil produced, of which 2,940,000, were consumed domestically.’

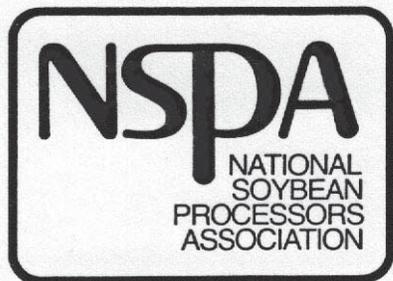
“1960: NSPA first approved direct financial contributions for soybean research projects, first made recommendations to the government about the GATT negotiations, and first prevailed upon USDA to convene meetings on the ‘restrictions abroad upon imports of soybean products.’

“1961: NSPA inaugurated its weekly statistical reporting service, started trading oil on a neutral oil basis rather than a refining loss basis, displayed ‘a growing interest in the activities of the International Association of Seed Crushers,’ and hired Bob Judd to head NSCIC [National Soybean Crop Improvement Council].

“1962: From the Chairman’s annual report: ‘The poultry industry is growing rapidly in Western Europe and with the growth of this industry will come the increased demand for quality soybean meal. If we, as an industry, want to capture this market, we must make better quality meal than ever before and maintain that quality.’

“1962: A Message to NSPA: ‘I am pleased to send greetings and good wishes on the occasion of the 33rd Annual Meeting of the National Soybean Processors Association... The efficiency and foresight of America’s soybean producers and of your processing industry has had much to do with the rapid expansion of soybeans in this country... Soybean oil has made a significant contribution to meeting the crucial requirements of hungry people in underdeveloped and developing countries. Your production of soybean meal is basic to our livestock feeding industry which supplies an abundance of meat, poultry and dairy products to our consumers.’ Signed, John F. Kennedy, President, August 20, 1962.

“1963: From the President’s Report: ‘Your Soybean Price Support Committee, composed of Messrs. McVay, Chairman, L.W. Andreas, B.A. Townsend, J.R. Moore, Donald B. Walker, and Martin Hilby, with George L. Pritchard and R.G. Houghtlin as ex officio members, worked diligently with the Department of Agriculture during its



deliberations on the 1964 price support level. I am confident that the factual presentation which the Committee made to the 'Decision Makers' was a vital element in the ultimate decision to make no change in the support level.'

"1966: From the Washington representative's report: 'Much work has been done with U.S. officials concerned with the GATT negotiations. NSPA thanks are due to Messrs. Andreas, Bruce, Carle, Golden, Hogan, Langsdorf, Larrick for their time and travel to meet with Ambassador Blumenthal and Jim Birkhead... It still appears that the U.S. should maintain the duty-free entry of soymeal into the Common Market and may possibly obtain some small reduction in the 10% crude oil duty.'

"1967: From the Chairman's annual report: 'We are being drowned by exports of sunflower oil from Russia.'

"1967: NSPA invited freshman Senator George McGovern to speak to its annual meeting. He said: 'Noting the rapid expansion of your industry and the new plants going up all around, I've been hoping that one of you will be putting in a large soybean mill in South Dakota.'

"1968: Robert G. Houghtlin retired as NSPA's President, and enumerated the association's accomplishments during his 23 years as being, principally: establishment of the National Soybean Crop Improvement Council, establishment of a Washington office, establishment of the Soybean Council of America, and ingredient research programs under the Soybean Research Council.

Note: In Sept. 1968 NSPA moved its headquarters to Washington, DC, from Chicago, Illinois. Smith, Bucklin began to manage the association.

"1970: From remarks by Maharajkumar Virendrasingh, NSPA's representative for India, at the annual meeting: 'I have been a representative of NSPA since July 1969. After our persistent knocking, the door in India has opened to the possibility of marketing soybean oil as an edible liquid... In November, a NSPA team consisting of Jim Moore, Jim Hogan, Kermit Head, and Sheldon Hauck came to India... Their visit created a good impression.'

"1971: NSPA held its first meeting out of the United States, in Montreal [Quebec, Canada]. NSPA also held its first Soybean Efficiency Contest, to get growers to compete for higher yields. As always, it amended the trading rules.

"1972: NSPA first disseminated radio releases and newspaper mat releases, emphasizing to growers the desirability of increasing production. The association also adopted its current modern logo and graphic look.

"1973: For the first time, NSPA systematically congratulated and welcomed new members of Congress just elected, and in the spring, published a brochure explaining the need for more soybean research—it was entitled, 'Increased Soybean Yields: An Important Key to Food Costs and Farm Income.'

"1973: From the President's speech to the ASA Convention: 'I have to admit that there have been a few days

lately when I almost wished for the old days of tranquility—when we weren't being pointed out as the whipping boys for the high costs of eggs, poultry and meat, and when the government was helping us find new markets overseas rather than limiting our sales, and no one ever dreamed that we would have to contend with price controls in a time of peace.' Note: On 27 June 1973 a soybean export embargo imposed by U.S. Secretary of Commerce. Soybean prices skyrocketed to their highest levels ever.

"1974: NSPA began sponsoring speakers before the annual meeting of the American Agricultural Editors Association, tackled fuel allocation regulations, sponsored a congressional reception in Washington, attended the FAO meeting in Rome, exchanged views with the Federal Trade Commission, and, like the British raj three decades before, withdrew from India.

"1975: Meeting in Kansas City [Missouri], NSPA heard CFTC Commissioner Gary Seevers, USDA Assistant Secretary Richard Bell, IASC President Jan Randag, and ASA Vice-President Seymour Johnson: This was also the year that NSPA began jousting with the Environmental Protection Agency, and asked Secretary of State Henry Kissinger what the U.S. would do about Brazilian export subsidies.

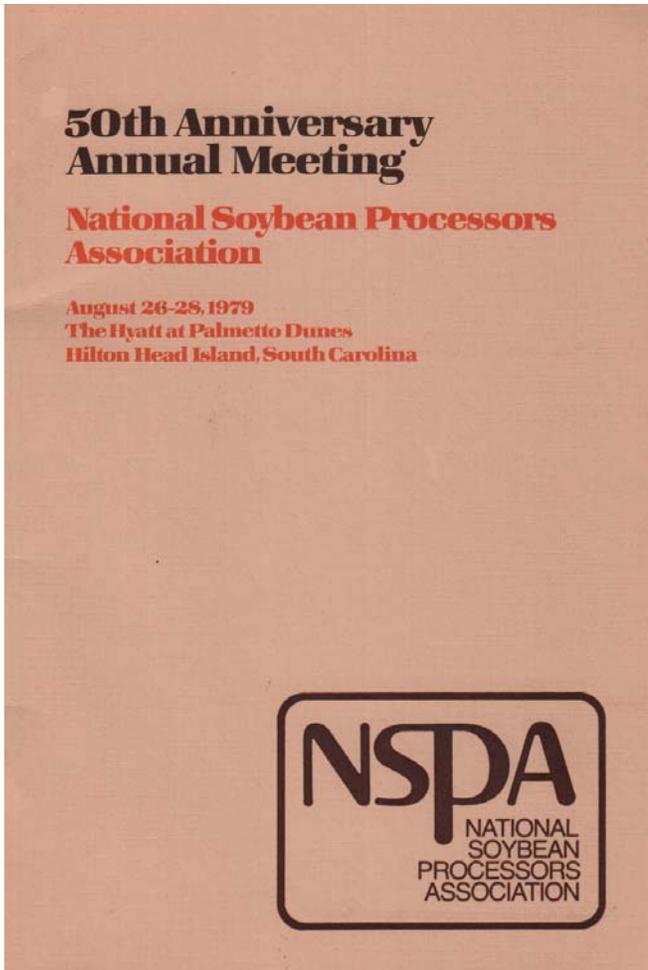
"1976: The Year of Palm Oil and Skim Milk Powder—two international trade conditions that were the subject of NSPA complaints to the U.S. Government. Also the year of the second International Soybean Fair, in Washington, co-sponsored by NSPA.

"1977: New Secretary of Agriculture Bob Bergland said on June 2 that palm oil was 'no longer a problem,' since the oilseed market was strong and since 'soybean industry leaders' had told him it was just good healthy competition. At its annual meeting, NSPA heard Congressman Paul Findley denounce the new agriculture bill, just passed by Congress, and heard the president of the Brazilian production financing commission characterize as 'irreversible this tendency toward liberalization' of Brazilian trade practices.

"1978: NSPA inveighed against the coal strike [1977-78 in the USA; 110 day national bituminous coal strike], testified on the loan rate, opposed a soybean set-aside, requested special railcar orders from the ICC [Interstate Commerce Commission], helped to avert an Austrian oilseed imports tax, and began a major new program led by its new NSPA Meal Export Development Committee." Address: Washington, DC.

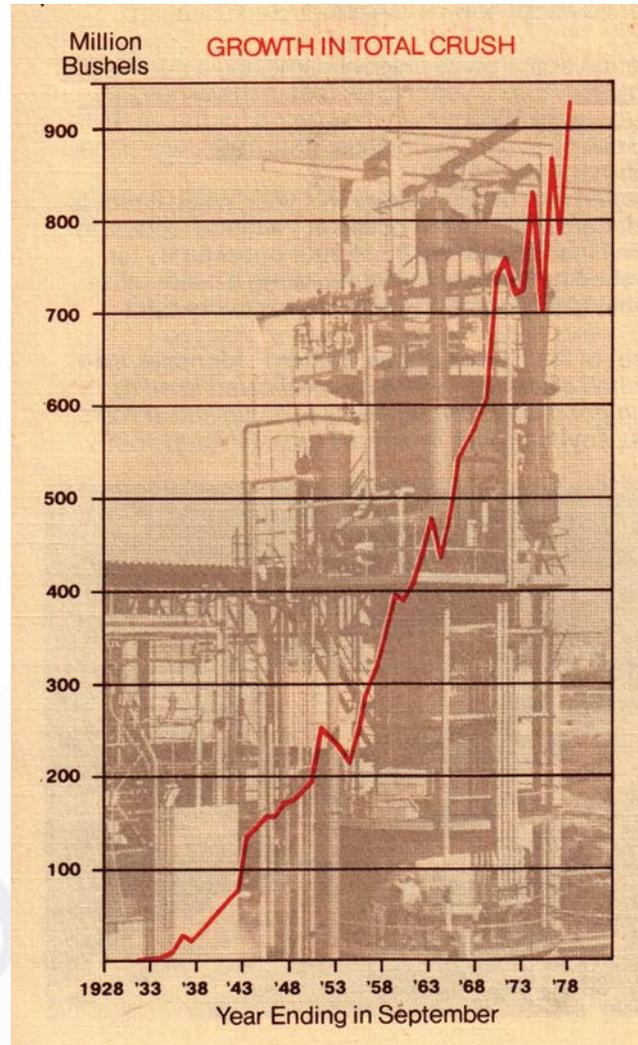
827. National Soybean Processors Association. 1979. 50th Anniversary Annual Meeting—National Soybean Processors Association: August 26-28, 1979, The Hyatt at Palmetto Dunes, Hilton Head Island, South Carolina. Washington, DC. 26 p. 23 cm.

• **Summary:** Contents: Letter of congratulations from President Jimmy Carter. Welcome to the 50th Anniversary



Annual Meeting of the National Soybean Processors Association (NSPA). Historical perspective (incl. graph of million bushels of soybeans crushed from 1933 to 1978). NSPA anniversary year officers and staff. 50th anniversary year board of directors.

Chief elected officers of NSPA, 1929-1977 (p. 4-5; each is now listed as “Chairman, Executive Committee,” but in documents before the mid-1970s each actually used the title of “President”): Otto Eisenschiml 1929-30 (Note 1. The NSPA was not officially formed until 21 May 1930. It was originally named the “National Soybean Oil Manufacturers Association,” but in 1936 was renamed the National Soybean Processors Association). Whitney H. Eastman 1931-35. I.C. Bradley 1935-36. E.K. Scheiter 1936-37. E.F. Johnson 1937-38. W.H. Eastman 1938-41. E.K. Scheiter 1941-45. D.G. Bunnell 1945-47. W.H. Eastman 1947-49. R.G. Golseth 1949-51. E.A. Cayce 1951-53. W.E. Huges 1953-55. Dwight L. Dannen 1955-57. M.D. (Pete) McVay 1957-59. Glenn H. Pogeler 1959-61. Donald B. Walker 1961-63. Scott E. Cramer 1963-65. Lowell W. Andreas 1965-67. Now the title in the book changes to “President”: Theodore W. Bean 1967-69. James W. Moore 1969-71. James W. Hogan 1971-73. James R. Spicola 1973-75. Lowell K. Rasmussen 1975-77.



Chief staff officers of NSPA, 1929-68: Edward J. Dies 1928-47 (Consultant, executive secretary, president, chairman. See Note below). Robert G. Houghtlin 1947-68. A portrait photo shows each of the above men from Dannen (1955) to Houghtlin (1968). Special invited guests (p. 6-7): U.S. friends of NSPA, international friends of NSPA, corporate officers of NSPA member firms (Agri-Industries, Archer Daniels Midland, Anderson Clayton Co., Buckeye Cellulose Corp., Cargill Inc., Central Soja Co., Continental Grain Co., Farmland Industries, Gold Kist Inc., Missouri Farmers Association, Perdue Incorporated, Planters Oil Mill Inc., Riceland Foods Inc., A.E. Staley Manufacturing Co.).

National Soybean Crop Improvement Council (NSCIC, p. 8-9): A portrait photo shows the managing director since 1961 Robert W. Judd, 26 advisory board members (Billy Caldwell, William Colville, Garnet Craddock, Roy Creech, Robert Gast, Dale Harpstead, Edgar Hartwig, Jack Hiatt, Maurice Horton, Robert Howell, Thomas Hutcheson, Jr., Hyde Jacobs, Herbert Johnson, Robert Leffel, William Martin, Arnold Matson, Charles McAnts, Wallace Moline, Bill Ott, John Pendleton, John Pesek, Marvin Phillips,

Edward Runge, Paul Santelman, Berlie Schmidt, Lloyd Seatz, Warren Shaw, Keith J. Smith (ASA), Walter Thomas, and Coleman Ward). Plus 3 special 1979 guests (Athow, Bernard, Turnipseed). NSPA annual meetings, sites from 1968-82. 50th annual meeting program of events (Master of ceremonies will be Earl. L. Butz, Secretary of Agriculture). Eleven pages of ads.

Note 2. Concerning Edward J. Dies: These dates seem incorrect. All prior records show that this association was organized on 21 May 1930, not in 1928. In 1950, when Dies was elected honorary life member of the American Soybean Association, *Soybean Digest* wrote of his career: Edward Jerome Dies, formerly the president of the National Soybean Processors Association, “was a staff correspondent of the Associated Press and a magazine writer before launching his Chicago [Illinois] public relations bureau. In 1936, when the soybean crop was only 33 million bushels, his agency was engaged by the National Soybean Processors Association to correct certain adverse publicity. Soon he became president of the expanding trade group, and continued in office until 1945, when he resigned and went to live in Washington. He has retained a connection with the soy flour industry as director of the Soya Food Research Council.” Address: 1800 M Street N.W., Washington, DC 20036.

828. *Food Product Development*. 1979. Improved soy flour-oil blend answers beverage base needs. 13(10):52. Oct.  
 • **Summary:** Nutrisoy 101, an improved soy flour-soy oil blend (2:1) produced by ADM Foods, imparts a highly acceptable flavor, texture, and mouthfeel to beverages, thus expanding soy flour’s previously limited potential as a beverage base. It readily disperses in cold water with agitation, and remains in suspension for 3 days, or if carrageenan is added, for 1 week. It can be used as an economic replacement for milk solids, as in milk shakes or flavored milks. It can be fermented with lactic acid to yield a soy yogurt or cultured sour cream dressing. It can also serve as a low-cost replacement for milk-protein counterparts in dips, sauces, and salad dressings. Sample formulations for vanilla and chocolate soy beverages are given.

829. Williamson, Doug. 1979. Maple Leaf Monarch Co. oilseed plant will have little impact, study claims. *Windsor Star (Essex County, Ontario, Canada)*. Nov. 20. p. 20.  
 • **Summary:** A new government report, commissioned by the Ontario Soya-Bean Growers’ Marketing Board and prepared by the economics branch of the Ontario Ministry of Agriculture and Food (OMAF), says that Ontario’s newest oilseed processing plant in Windsor (near central Michigan) will not have any dramatic impact on the provincial soybean industry. Though the oilseed crushing capacity of Ontario province is now 50% greater, there will be only minor price changes for area farmers because of the plant’s location and therefore little incentive for them to increase production.

The most significant effect of the plant will be that western Canadian rapeseed and Ontario soybean meal will replace U.S. soybean meal in the southwestern Ontario market. Yet the 1979 crop is expected to total 25 million bushels, up 32% from the 19 million bushels last year. Ontario processor requirements are between 35 and 40 million bushels; the difference is made up by soybean imports from Michigan and Ohio. During the warm months, crushers buy soybeans by the boatload. But in winter, when Seaway navigation is closed, they must rely on stored soybeans since trucking from elevators is expensive. Address: Star agricultural reporter.

830. Dussaigne, A.; Dronne, Yves. 1979. Les protéines nouvelles en alimentation humaine [The new proteins in human nutrition]. Rungis, France: Laboratoire de recherches et d’études sur l’économie des I.A.A. 111 p. Dec. [97 ref. Fre]

• **Summary:** Contents: Introduction. List of 30 tables. Part I: The protein industry. Definition and characteristics of proteins. The quantitative structure of the protein industry (the world protein industry, the French protein industry). Qualitative aspects of the protein industry. Energy problems in the protein industry.

Part II: New proteins in human nutrition. Supply and demand. Products derived from soya: Powdered products, textured products. The domains of utilization: Restaurants, the food industry. Regulations that are in force: In the USA, in Europe (France, Britain, European Union). The structure of the supply: Overview, manufacturers (American, European, Japanese, those in other countries). Development of consumption in the principal markets: The American market, European, Japanese.

Part III (p. 77+): Perspectives on development of new proteins. The nature and present utilization of new proteins: Importance of terminology, characteristics of the potential markets (Third World countries, developed countries). Consumption of new proteins and the economic environment. Bibliography (in chronological order).

Note 1. This is the earliest document seen (Aug. 2015) that contains the term “European Union” in connection with soy.

Note 2. This is the earliest French-language document seen (Nov. 2015) that uses the terms *concentrat* or *concentrats* to refer to a soy protein concentrate. Address: France.

831. **Product Name:** Defatted Soy Flakes [Untoasted, or Heat Treated].

**Manufacturer’s Name:** Archer Daniels Midland Co.  
**Manufacturer’s Address:** Box 1470, Decatur, Illinois 62525.

**Date of Introduction:** 1979.

**New Product–Documentation:** Manufacturer’s catalog.

1987. For use in protein extraction (HVP, etc.).

**832. Product Name:** Toasted Nutrisoy Grits [Coarse, Medium, Fine, or Extra Fine Granulation].

**Manufacturer's Name:** Archer Daniels Midland Co.

**Manufacturer's Address:** Box 1470, Decatur, Illinois 62525.

**Date of Introduction:** 1979.

**New Product–Documentation:** Manufacturer's catalog. 1987. For use in cookies, crackers, specialty breads, ground meat systems.

**833. Product Name:** Granose Dinner Balls: Savoury Protein Balls in Sauce.

**Manufacturer's Name:** Granose Foods Ltd. (Distributor). Made in Denmark by Nutana Helsekost.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1979.

**Ingredients:** Textured soya protein, wheat protein, soya oil, bread crumbs, oat flakes, egg white powder, vegetable margarine, wheat flour, maize starch, salt, yeast, hydrolysed vegetable protein, onion powder, herbs, celery powder, spices, monosodium glutamate.

**Wt/Vol., Packaging, Price:** 400 gm (14 oz) can.

**How Stored:** Shelf stable.

**New Product–Documentation:** Manufacturer's catalog. 1981. Nutana Helsekost. 19 p. Contains a photo of and detailed information about every product. Label. 1980, undated. 9.5 by 4.25 inches. Full color, mainly beige, blue, and white. Photo shows balls in a casserole. "Ready to serve. Heat in a pan and serve with potatoes and other vegetables, or make into a casserole." Labels in Danish, Dutch, and Finnish.

Form filled out and Label sent by Granose Foods Ltd. 1990. June 13. States that the product, made by Nutana, was introduced in 1979. Can Label. 1990. 9.5 by 4 inches. Photo of the prepared dish with many meatlike balls on a plate atop a bed of rice, surrounded by green beans, against a brown background. Ingredients: Water, gluten, textured soya protein, vegetable margarine, soya bean oil, oat meal, wheat flour, egg white powder, vegetable stock, modified starch, onion powder, celery powder, curry, marjoram, peanuts, rolled barley, sweet basil, sea salt. Serving suggestion: Granose Dinner Balls are ready to serve. Heat in a pan and serve with potatoes and other vegetables, or make into a casserole. Ideal for lunch and dinner. Send 9"x6" SAE for FREE recipe book.

**834. Product Name:** Granose Frikalets. Soya Rissoles in Onion Sauce.

**Manufacturer's Name:** Granose Foods Ltd. (Marketer). Made in Denmark by Nutana Helsekost.

**Manufacturer's Address:** Stanborough Park, Watford,

Herts., WD2 6JR, England.

**Date of Introduction:** 1979.

**Ingredients:** Rissoles: Textured soya protein (textured soy flour), oat flakes, onion, egg white powder, hydrolysed vegetable protein. Sauce: Onion, soya oil, wheat flour, maize starch, soya sauce, salt, hydrolysed vegetable protein, yeast, spices, monosodium glutamate.

**Wt/Vol., Packaging, Price:** 425 gm (15 oz) can.

**How Stored:** Shelf stable.

**New Product–Documentation:** Manufacturer's catalog.

1981. Nutana Helsekost. 19 p. Contains a photo of and detailed information about every product. Label. 1980, undated. 9.5 by 4.25 inches. Full color, mainly beige, blue, and white. Photo shows 2 burgers or rissoles with peas and carrots. "Ready to serve. Granose frikaletts need only to be heated in their own sauce. Serve with potatoes and other vegetables for an easily prepared meal." Labels in Danish, Dutch, and Finnish.

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by Nutana, was introduced in 1979. It has been discontinued.

**835. Product Name:** Millstone Burger-Like: A Vegetable Protein Product–Imitation Ground Beef.

**Manufacturer's Name:** Millstone Foods Inc.

**Manufacturer's Address:** P.O. Box 323, Penryn, CA 95663.

**Date of Introduction:** 1979.

**Ingredients:** Water, soy flour, textured vegetable protein, salt, hydrolyzed vegetable protein, onion, garlic, spices, tomato, caramel color, natural flavorings.

**Wt/Vol., Packaging, Price:** 19 oz (538 gm). Can.

**How Stored:** Shelf stable.

**New Product–Documentation:** Ad in Tom Riker and Richard Roberts. 1979. *The Directory of Natural & Health Foods*. p. 222-23. A photo shows the label.

Label sent by Millstone. 1981. March 1. Label reads as shown at product name. Brown and yellow lettering on white background. With recipe for Burger Patties (with eggs). The company also makes Tender Cuts (basically wheat gluten but with soy flour and TVP), and Nut Meat (mainly peanuts with corn and soy flour).

**836. Product Name:** Soy Fortified Rice, and Whey Soy Drink Mix (WSD), and WPC-Soy: Wheat Protein Concentrate/Soy.

**Manufacturer's Name:** P.L. 480 Food for Peace Program.

**Manufacturer's Address:** USDA, Washington, DC.

**Date of Introduction:** 1979.

**How Stored:** Shelf stable.

**New Product–Documentation:** Contains 41% wheat protein concentrate and 36% full-fat soy flour, making it a high protein-calorie density food. WPC-Soy was shipped in amounts of less than 500 tonnes a year.

ADM Milling Co. (Shawnee Mission, Kansas). 1989. Product information sheet. "Nutritionists involved in world food programs have long recognized the need for an inexpensive, safe supplemental food for use in preschool and young school age feeding programs. A wheat protein concentrate/soy food blend (WPC-soy) was specifically designed to meet these demands. This was accomplished through the proper blending of full fat soy flour, wheat protein concentrate, soy oil, corn syrup solids, and a vitamin-mineral premix." Gives contents, proximate chemical analysis, nutritional data, vitamins, minerals, and essential amino acid profile. PER is 2.14 compared with 2.5 for casein (milk protein). Basic uses and recipes: As a beverage, as a gruel.

837. Canadian Feed Industry Association. 1979. *Sharing the past, shaping the future: 50 years of the Canadian feed industry*. Ottawa, Ontario, Canada: CFIA. 186 p. Illust. 28 cm.

• **Summary:** Contents: Introduction. Our history. The way it was. The formation years 1929-1939. The Years of Challenge 1940-1945. Growth and Expansion 1946-1961. The Years of Influence 1962-1979. Conventions. Agriculture Du Québec. Medication and Animal Health. History of Mill Equipment. Genetics and Nutrition. Changes at the Farm Level. Company Histories. Looking Ahead Shaping the Future. Secretaries to C.F.M.A. Industry Members 1979. Statistics. 1979 Board of Directors. C.F.I.A. Administration. Advertisers Index. In the "Company Histories" section, that of Maple Leaf Mills Ltd. is given on pages 141-42; it includes Maple Leaf Milling and Toronto Elevators.

"Maple Leaf Mills Ltd.: The inspiration and hard work of a handful of men in the late 1930's blossomed into Maple Leaf Mills of the 1970's, a diversified enterprise whose history is part of Canada's coming of age in feed and livestock production and agricultural research. Today's computer-speed marketing aids were not available when Toronto Elevators Ltd., a grain company, and Maple Leaf Milling Co., a flour miller, began selling feed in the late 1920's. By 1929, both were members of the original Canadian Feed Manufacturers Association and competing against one another in the feed business. More than 30 years later, the two pioneering companies merged to form Maple Leaf Mills Ltd. and retained the 'Master Feeds' brand name of Toronto Elevators.

"There had always been strong bonds between the two firms. Fred Presant, who joined Toronto Elevators in 1929 to establish a feed manufacturing operation at the request of company founder Gordon Leitch, was an old friend of Ted McRostie who engineered the creation of Maple Leaf's feed production set-up.

"From its flour milling operation at Pt. Colborne, Ontario, Maple Leaf had the by-products at hand to produce prepared feeds for livestock as well as a scratch grain for

poultry made of a whole grain mixture. Ted McRostie, manager of the feed department, worked closely with Prof. Graham of O.A.C. and in the early 1930's Maple Leaf was selling Monarch Poultry and Livestock Feeds as well as a line of Cafeteria Open Formula Feed. Bags of O.A.C. Cafeteria laying mash—illustrated by hens walking up to a cafeteria—were produced on the philosophy that birds had selected from a range of ingredients. Maple Leaf Milling was the only company that sold feeds on the open formula basis: 300 lbs. crushed oats, 150 lbs. bran, 85 lbs. soybean meal, 100 lbs. middlings. The whole formula was right on the jute bags. Maple Leaf's second feed mill was constructed in Montréal just after the Second World War.

"Of the feed manufacturing developments which modernized the industry in the 1950's, there were two. Prior to bulk handling, 'feed was put in 50 lb. paper bags instead of 100 lb. jute bags, the reason being that there were three flights of stairs to climb in made-over buildings.' The second revolution was the 'pelleting of feeds, making crumbles. That had most to do with the mechanization of broilers and caged layers since mash in conveyor belts is difficult to control.'"

"As a grain company, Toronto Elevators did not have animal or cereal by-products for feed manufacturing as did meatpacking or flour milling companies. Toronto Elevators used what was called a whole-grain base and this is what they came to in later years. This was the start of high-energy complete feeds, the result of experimentation, observation and results obtained by Fred Presant and others in the company. 'I had very definite ideas as to the quality of the product that we were going to put out under the name of Master Feeds which I had originated.'

"Presant's purposefulness grew out of his earlier work in the poultry business, managing a 2,000 laying hen farm at Bracebridge, Ontario in 1917, one of the largest farms in Ontario at the time. When Master Feeds was launched as a department of Toronto Elevators, 'nobody knew who we were or our product and the salesmen would have to go round and visit individual poultrymen, usually with a flock of 200 laying hens,' notes Presant. But as the farm business began to grow. Presant's salesmen approached farm suppliers to be dealers. In 1932 Fred Presant served as President of C.F.M.A."

"Then your reputation grows.' A concrete symbol of the sales work was the construction of a new feed plant in Toronto in 1938."

"In 1962, Toronto Elevators merged with Maple Leaf Milling and the feed operations were combined as Master Feeds." Address: Box 2080, Station "D," Ottawa, Ontario K1P 5W3, Canada.

838. Doyle, Rodger Pirnie. 1979. *The vegetarian handbook: A guide to vegetarian nutrition and foods*. New York, NY: Crown Publishers. x + 182 p. Illust. Index. 24 cm. [20+ ref]

• **Summary:** Table 3, “Daily food guide for vegan adults” (p. 30) recommends soy milk, tofu, and fermented soybean curd [fermented tofu].

The section titled “Weaning infants on vegan diets” (p. 40-44) also discusses soy milk and The Farm in Tennessee. Soy milk is also recommended for pregnant and lactating women (p. 54-55).

Chapter 9, titled “A pair of unusual diets,” discusses macrobiotic diets and fruitarian diets. The author is quite critical of a number of macrobiotic practices and teachings: Studies have shown nutritional deficiencies. Restricted intake of liquids may lead to kidney stones and kidney failure. “The greatest danger of a macrobiotic diet is not to adults but to newly weaned infants... Don’t wean infants on Kokoh... Wean them instead on either milk or fortified soy milk.”

Page 93 states: “Soybeans are among the most valuable of vegetarian foods, not only because of their high-quality protein but because they can be made into soy milk and tofu (soybean curd)... Two other soy products that are widely used in the United States are soy sauce and miso.”

Pages 96-97 discuss soy milk and textured vegetable protein (TVP).

Table A, “Typical vegetarian menus” (p. 134-35) is divided into lacto-vegetarian and vegan, and within each type it gives menus for breakfast, lunch, dinner and snacks for: (1) Infants 6 to 12 months—970 calories. (2) Children 4 to 6 years—1800 calories. (3) Males 11 to 14 years—2800 calories. (4) Males 15 to 50 years—2700 calories. (5) Males over 50—2400 calories. (6) Females 11 to 14 years—2800 calories. Various soyfoods are listed, including “soy milk” and “soy ice cream.”

839. Riker, Tom; Roberts, Richard. 1979. *Directory of natural and health foods: A sourcebook for dietary revolution*. New York, NY: Putnam (A Paragon Book). 320 p. Index. 37 cm.

• **Summary:** The first part of this book (p. 7-49) consists of essays on natural foods and nutrition (some reprinted). Part two is a commercial catalog/directory of natural foods available in 1979; it lists and describes (with many photos and labels) products from most of the major U.S. natural foods manufacturers. An Index (p. 293-308) lists participating companies alphabetically.

Soy-related products include: Hain Super-E Soy Oil and Crude [unrefined] Soy Oil (Los Angeles, California, p. 55). Health Valley Soy Moo (Montebello, California, p. 56). Edward & Sons Miso-Cup (Union, New Jersey, p. 57). Family Orchards Fruit & Nut mixes, incl. Back Packer+\*, Hi-Fiber Mix+, Hi-Iron Mix+, Hi-Protein Mix+\*, Hiker’s Helper, Mixed Nuts\*, Mountain Munchies\*, Tamari Mixed Nuts\* (+ = contains Soy Nuts; \* = contains Tamari Peanuts) (Berkeley, California, p. 60-61). Niblack Tamari Pumpkin Seeds (Pepitas), Tamari Roasted Sunflower Seeds, Liquid Lecithin, Granular Lecithin (Rochester, New York, p. 72-73).

Arrowhead Mills Unrefined Soybean Oil (Hereford, Texas, p. 75). Good Morning New England Granola incl. Cashew-Raisin Bran-ola (with okara soy fiber), Happy Trails Mix (with roasted soynuts) (Amherst, Massachusetts, p. 79). Elam’s Soy Flour (Broadview, Illinois, p. 81).

A long section on Erewhon and its products (p. 84-108) is probably the reproduction of an Erewhon catalog. Erewhon is now located at 3 East Street, Cambridge, MA 02141. Following several pages about the company and its philosophy and standards, each of its major products is discussed in detail, often with nutritional analyses. A label for Soy Flour (organically-grown stone-ground, 24 oz.) is shown; the main recommended use is for making soy milk! A major part of the presentation is titled “Japanese food guide.” Products described include: Umeboshi (2 pages): Plums pickled in brine (umeboshi). Umeboshi paste. Plum concentrate (*bainiku ekisu*). Miso (2 pages): Hatcho, waka-Hatcho, soybean, barley, brown rice, rice, and natto miso varieties. Tekka (made with Hatcho miso). Sweets made from mizu ame [rice syrup]. Nigari. Gomashio. Koji starters for various types of miso or shoyu. Goma-muso (60% barley miso and 40% whole sesame seed butter). *Gomamiso furikake* (with barley miso, whole roasted sesame seeds, and shredded nori seaweed). Kombu candy. Kokkoh. Dried tofu (*Kohya-dofu*). Brown rice sake. Mirin. Gluten cakes (*Kuruma-fu*). Seitan (Gluten cooked in shoyu). Rice crackers seasoned with tamari soy sauce. Kuzu (3 pages). Tamari and shoyu (4 pages; Johsen Shoyu is made in Sendai and tamari is made by San-jirushi Co.). Seaweeds (4 pages): Kanten, arame, hijiki, kombu, ne-kombu, nori, seasoned nori, kanten, kanten flakes, wakame, and mekabu.

Good Food brand Soy-Millet Bread (Austin, Texas, p. 120). Arrowhead Mills Bulgur-Soy Grits (p. 121). Erewhon Morning Cereal, and Infant Cereal (each containing soy beans). Chico-San Black Soybeans (imported), and Azuki Beans (Dainagon imported small red), and Lima Soy Sauce (Chico, California, p. 126-27). Arrowhead Mills 7 Grain Cereal, and Deaf Smith Crunch (granola-type cold cereal) (each contains soybeans, p. 130).

The section on pages 188-197 is titled “Soy.” It lists Farm Foods Tempeh Kit, Tempeh Starter, Natural Nigari for Curding Tofu, Soyflour, Whole Cleaned Soybeans, Good for Ya Textured Vegetable Protein (Summertown, Tennessee, p. 189). New England Soy Dairy Tofu (with many tofu recipes, Greenfield, Massachusetts, p. 192-96).

The Redwood Sprouter Co. sprouter containing Soy Sprouts (1976, Austin, Texas, p. 202-04). Worthington Foods (a photo shows their line of 38 products). Millstone Burger-Like (with soy flour and TVP), Wheat Fries (with wheat gluten), Tender Cuts (with wheat protein and soy flour) (Penryn, California, p. 222-23). Sunrise Health Products Lecithin Granules (p. 274-75).

840. Smith, Elizabeth Bernice. 1979. *Vegetarian meal-*

planing guide: A lacto-ovo-vegetarian diet. Winnipeg, Manitoba, Canada: Hyperion Press Ltd. 104 p. Illust. (some color). 21 x 22 cm. [57+ ref]

• **Summary:** At head of title: “Dr. Elizabeth Smith’s New World of Eating.” Table 5e (p. 25) lists calories for meat alternates group. Soybean sprouts, miso, soybean curd (tofu), soybean milk, and TVP are moderate calorie, while soybeans and soy grits are high calorie.

Page 47 notes: “Generally speaking, legumes are moderately deficient in methionine. Soybeans are an exception, as are their by-products, tempeh (fermented), tofu (the curd formed for soya), and soybean milk. All these are roughly equivalent in quality to cow’s milk.

Page 49 notes that when breast feeding is not possible, soyamilk may be formulated as a very satisfactory substitute; vitamin B-12 must supplement it in pill form. “An infant who cannot tolerate cow’s milk because of allergy and cannot be breast fed may accept a soybean formula until 3 to 4 months of age. At weaning, according to Fomon, the child should continue to receive by cup either soybean formula or soybean milk fortified with vitamin B-12.

Pages 54-56 describe in detail how to sprout soybeans at home, and how to prepare homemade soymilk and tofu (soybean curd). It is advised that fermented soybean products such as miso and tempeh not be produced at home “as the control of the fermentation process by specific micro-organisms is too difficult to achieve without specialized training and equipment.”

Soy-related recipes include: American soybean loaf (with soaked, ground soybeans, p. 76). Soybeans printanier (with cooked soybeans). Soya sesame loaf. Soya cheese balls (with cooked, seasoned soybeans). Soybean casserole (p. 77). Sprouted soybean Creole. Sprouted soybeans au gratin. Bean sprout chop suey (with tofu, p. 77). Skillet soya sprouts and beans (p. 78). Soybean stroganov (p. 78). Address: Winnipeg, Manitoba, Canada.

841. Meilke, Karl D.; Young, Larry; Miller, Dorothy. 1980. A quarterly forecasting model of the Canadian soybean sector. *Agriculture Canada, Policy, Planning and Economics Branch, Working Paper No. 9*. 73 p. Jan. [24 ref]

• **Summary:** “Soybean Domestic Demand and Trade (p. 3-5): Until very recently Canada’s three soybean crushers were located in the Toronto-Hamilton area and had a combined rated crushing capacity of approximately 635,000 mt. [metric tons = tonnes] per year. Actual soybean crushings varied from 547,000 mt. in 1968/69 to a high of 743,000 mt. in 1978/79 and averaged 657,000 mt. over the eleven year period (Table 1).

“Early in 1980 Maple Leaf Mills closed its small Toronto crushing plant and opened a new integrated crushing plant, jointly owned with Lever Brothers, in Windsor, Ontario. The opening of this new plant has implications for the pricing of Ontario soybeans and for Canadian trade in

soybeans, soyoil and soymeal... Canada’s soybean crushing capacity will increase by almost 50 percent, to 890,000 mt. per year, when the new plant is in full operation.”

“Two recent events may have an impact on the pricing of Ontario soybeans. The first is the opening of the Windsor crushing plant, which Jaeger (1979) feels may increase slightly the average price received by Ontario farmers for soybeans. The second is the removal of the United States tariff of 60¢/bushel, on soybeans, during the recent GATT negotiations. The possibility of shipping Southwestern Ontario soybeans into deficit producing areas in the U.S. adds a new element to marketing and possibly pricing Ontario soybeans.”

With the “increased output of soyoil from the Windsor plant, Canada’s soyoil price may not be above the U.S. price by the full amount of the tariff. Since there is no publicly reported soyoil price it will be hard to know if this has happened” (p. 48).

Note: This is the 2nd earliest English-language document seen (Sept. 2016) that uses the term “soyoil” to refer to soybean oil, and the first to use it consistently throughout a document. Address: School of Agricultural Economics and Extension Education, Univ. of Guelph, ONT, Canada.

842. Erickson, Eric H.; Herbert, E.W., Jr. 1980. Soybean products replace expeller-processed soyflour for pollen supplements and substitutes. *American Bee Journal* 120(2):122-26. Feb. [6 ref]

• **Summary:** For years, expeller-processed soybean flour has been used by beekeepers as a protein source for honey bees. This flour has either been fed alone or mixed with other ingredients such as yeast, dried skim milk, or pollen and then fed as a pollen supplement. Products tested in this experiment included Bland 50 (0.5% fat), F-200 (0.9% fat), and I-200 (made by the A.E. Staley Mfg. Co. of Decatur, Illinois), and Toasted Nutrisoy T-6 (7% fat) and Soylec T-6 (made by Archer Daniels Midland Co., Box 1470, Decatur, Illinois).

Pollen contains 4-5% fat. Both Bland 50 and F-200 were better consumed and resulted in more sealed brood when mixed with pollen. Nutrisoy T-6 was more effective when used alone. Address: 1. Bee Research Laboratories, Agricultural Research-Science and Education Administration, USDA, Madison, Wisconsin 53706; 2. Beltsville, Maryland 20705.

843. Levey, Gail A. 1980. An in-depth look at textured vegetable protein: More than you ever wanted to know... *Vegetarian Times* No. 35. Jan/Feb. p. 56-59.

• **Summary:** Discusses how TVP and spun soy protein fibers are made and their nutritional value. Address: M.S. in nutrition.

844. Torgerson, Susan. 1980. Mankato No. 2 in nation in soy processing: 40 years ago industry didn't amount to a hill of beans. *Land (The) (Southern Minnesota)* 4(10):1, 13, 38. April 24.

• **Summary:** "It wasn't a farmer, but a lawyer who introduced soybeans to this area. William Blethen, Mankato, as a young lawyer in 1938 was handling a case in Winona, and during the three-day hearing, he roomed with his Iowa client Riley Lewis.

"Lewis, a retired country extension agent, whiled away their spare time extolling the success of soybeans in his state and sent Blethen home with the beginnings of an idea that a soybean processing plant in Mankato might prosper."

Blethen's research showed that southern Minnesota was within the northern boundary of soybean country. He hosted three Mankato residents—a banker, a farmer, and a businessman—on a tour of a soybean processing plant [owned by Ralph Wells & Company] in Monmouth, Illinois.

Blethen recalled that he put the three men in his two-door Plymouth coach, paid all their expenses, and took them to Monmouth—even though he was making only \$150 a month at the time. He asked the three to please give him every reason why he *shouldn't* open a soybean processing plant in Mankato, but none of their criticisms seemed strong enough to sway him. In Mankato, Good Thunder, and Rochester (Minnesota; his former home) he sought out investors who were willing to put up a total of \$50,000. The core group of investors, who lived in Mankato and its environs, among them several bankers and associates of the telephone company, included the now deceased Judge S.B. Wilson, C.P. Barnard, and T.M. Coughlan.

They named the new company Mankato Soybean Products, Inc. [probably in 1939]. For \$7,500 they purchased the abandoned Minnesota Pipe and Tile Co. on the current Honeymead site. Their purchase included several warehouses, a building suitable for offices, a rail line, and a city block of property fronting the Blue Earth River. They installed one expeller, which worked like a big meat grinder to crush and press the oil from the soybeans.

But they still needed soybeans. In the spring of 1939, various farm meetings were scheduled in the area. Blethen and his former client, Lewis, who had been hired to manage the plant, made the rounds of the meetings, urging farmers to try this amazing crop. Though Blethen, a lawyer, knew nothing about farming, he was telling farmers how to plant and grow soybeans. The meetings attracted interest but few commitments. The farmers went home, thought it over, and talked to their neighbors. Richard L. Myers, an investor and then president of the First National Bank in Good Thunder, recruited tenants from his family's farm to experiment with soybeans.

The time was ripe for soybeans in southern Minnesota. The main crop had been wheat until the early 1900s, when corn was introduced. By the 1930s corn was well established

and farmers were looking for a crop—ideally a legume—to use in rotation with corn. This opened the door for soybeans.

During Mankato Soybean Co.'s first year of operation, soybeans were not available locally, so they had to be purchased elsewhere and shipped in by train. The company lost money its first year and investors had to come up with another \$50,000 to cover expenses. Note: We are not told when the company began processing soybeans. A conservative guess would be Sept. 1940, but it could have been as early as Sept. 1939.

In 1941, Lewis was succeeded as plant manager by Ed Ober, a Lake Crystal farmer. Fortunately Ober recruited Frank Bergemann as manager. Bergemann adapted the plant to also process flax, helping to make the company profitable by its third year—as more and more local soybeans began pouring into the plant.

In 1942 Washington Egg and Poultry Association [WAPA], a poultry cooperative [Lynden, Washington State], offered the investors double their money for the company; all of Blethen's pleading couldn't stand in their way. In 1946 [sic, 1947] the Andreas family bought the plant from WAPA. Address: Staff writer.

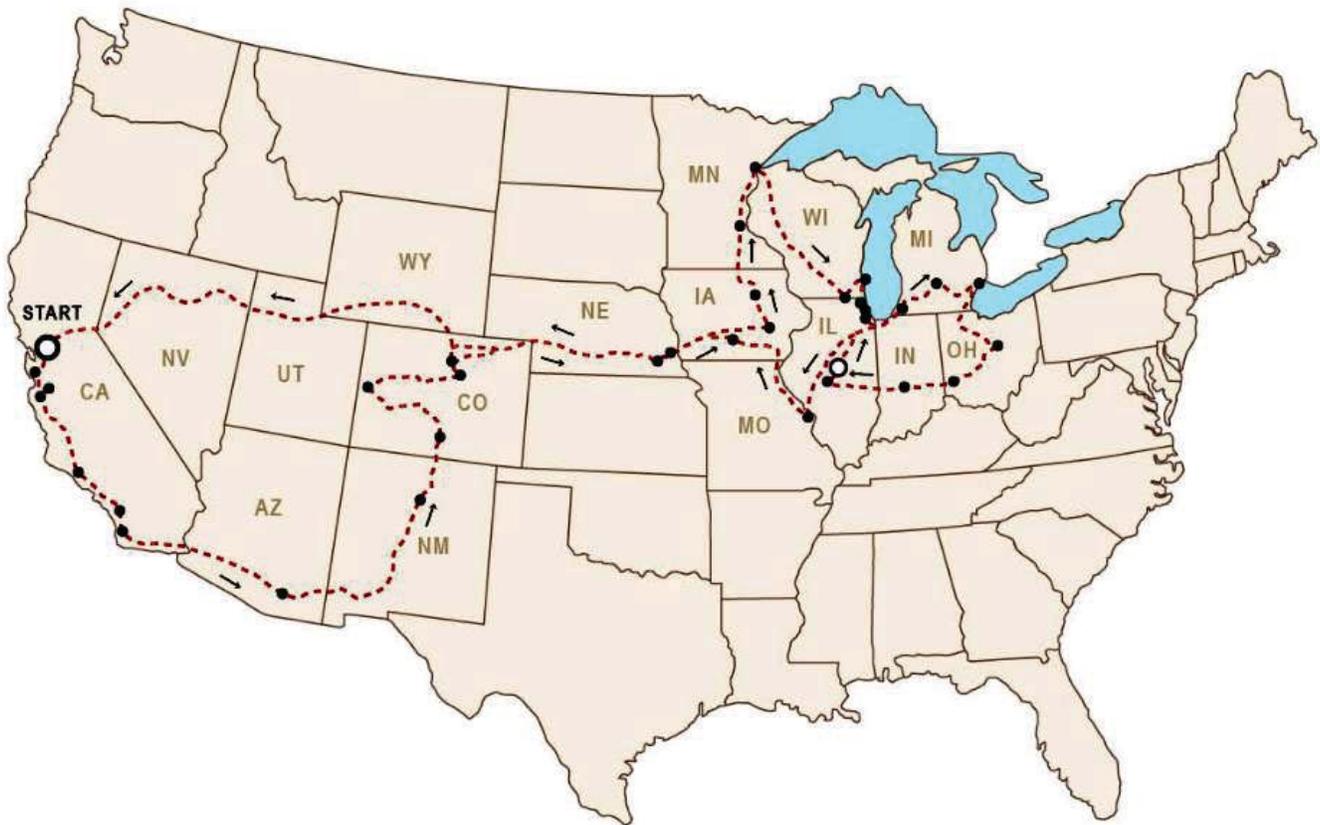
845. Granose Foods Ltd. 1980. Granose—Britain's leading health foods: Product information. Stanborough Park, Watford, Herts., WD2 6JR, England. 5 p. April. Unpublished typescript.

• **Summary:** The name of each product is given, usually with a basic description and ingredients. Product categories include: Breakfast cereals. Protein foods—soya based: Soya beans in tomato sauce, Goulash, Curry sauce, Bolognese sauce, Chicken flavoured pie filling, Chicken flavoured savoury pudding, Ravioli, Cannelloni, Soyapro wieners, Soyapro slices, Beef like, Chicken like, Ham like. Dried foods—soya based: Vegex (Chunks and Mince), Sausfry, Granogen, Granolac. Dried foods—nut based: Rissolnut (with soya nuts). Address: Watford, Hertfordshire (Herts.), England.

846. Herbert, E.W., Jr.; Shimanuki, H. 1980. An evaluation of seven potential pollen substitutes for honey bees. *American Bee Journal* 120(5):349-50. May. [1 ref]

• **Summary:** "One of the primary objectives of our research is to develop a diet for honey bees that can be used to replace the natural pollen on which they depend." When fed eight diets over 12 weeks, bees reared the most brood and consumed more diet when offered pollen followed in decreasing order by whey-yeast, Wheast, Bee Feast, and Pollenex. Three soybean products were tested: Bland 50 (0.5% fat) and F-200 (0.9% fat) (made by the A.E. Staley Mfg. Co. of Decatur, Illinois), and Toasted Nutrisoy T-6 (7% fat) (made by Archer Daniels Midland Co., Decatur, Illinois). Only F-200 and Toasted Nutrisoy supported brood rearing; Bland 50 did not enable bees to rear brood during the study.

## 1980 SOYFOODS AMERICA TOUR



Address: Bioenvironmental Bee Lab., Agricultural Research Science and Education Administration, USDA, Beltsville, Maryland 20705.

847. Morris, Charles E. 1980. America's gold. New directions for basic commodities. *Food Engineering* 52(5):95-97, 108-11. May.

• **Summary:** About corn, wheat, and soybeans.

848. Shurtleff, William; Aoyagi, Akiko. 1980. Soyfoods America Tour: May 5 to June 10; July 25 to Aug. 3, 1980 (Log and trip report—unpublished, including Itinerary with map). Lafayette, California: New-Age Foods Study Center. Unpublished log.

• **Summary:** This trip had five purposes: (1) To introduce tempeh to America; (2) To promote the authors' newly published *Book of Tempeh*. Harper & Row, the publisher, paid most of the trip expenses; (3) For William Shurtleff to attend the University of Illinois Short Course in Soybean Processing; (4) To visit and study soyfoods companies in America; (5) To introduce people to the many advantages of a meatless / vegetarian diet.

A photo shows: Shortly before the trip, Akiko (left) and Valerie Robertson (right) (working in the Shurtleff's small

home kitchen) "canned" many quart Mason jars of Tempeh Cacciatore to serve at the intermission of each lecture / presentation.

Includes the name and address of 37 people and organizations visited. Many of these were pioneers in the soyfoods and natural foods movement: April 25—Optimum Foods (Napa, California). April 27—David Burns (Sebastopol, CA). May 5—Jeremiah Ridenour of Monterey Bay Soyfoods (Santa Cruz, CA). May 6—Thelma Dalman, Foodservice Director for the Santa Cruz City Schools, *Monterey Peninsula Herald*, Ted & Marie Fehring (Carmel), Paula Welch Terui of Jack and the Beanstalk (Carmel Valley, CA). May 8—Al Jacobson of Garden of Eatin', Mr. Kaye Dunham of Tumaros, Hugh Roberts of Meals for Millions. May 9—Eddie Okita of Okita Enterprises, and Noritoshi Kanai of Mutual Trading Co. (Los Angeles, CA). May 10—Kay Glass (La Cañada, CA). May 11—Frazier Farms natural foods supermarket (Escondido, CA), Bill Walton vegetarian and basketball star (San Diego, CA; we stay with Craig Wright and Andrew Salony of TriLife; they hope to market Bill Walton's tofu under the TriLife brand). May 12—Clare Quinn of The Farm (Tucson, Arizona; her check bounced so we never got paid). May 13—Kathryn Bennett of Southwest Soyfoods (Santa Fe, New Mexico), Tracy McCallum, Taos.

May 14–Leslie Wertz (Alamosa, Colorado). May 16–Stay with Christie and John Baker (Boulder, Colorado). May 17–Steve Demos of White Wave Soyfoods and Good Belly Deli. May 18–Sanford and Rebecca Greenwood of East West Center (Boulder, Colorado). May 19–Judson Harper and the low cost extrusion cooker program at Colorado State Univ., Carol Hargadine of Nupro Foods & Soywaze Tofu (Fort Collins, CO). May 21–Gale Randall of the Indonesian Tempeh Co. (Palmyra, Nebraska). May 22–David Tucker of New Pioneer Co-op Society (Iowa City). May 23–George Strayer of Edible Soy Products (Makers of Pro-Nuts, May 23) and Agricultural Exports (Hudson, and Cedar Falls, Iowa). May 24–Cedar Falls (Iowa) and Minneapolis media. May 25–Pat Aylward and Jamie Stunkard of Joy of Soy Tofu (Minneapolis, Minnesota). May 27–Richard Cihoski (Duluth, MN). May 28–Chris Burant of Bountiful Bean Plant and Jehan Ziegler of Higher Ground Cultured Foods (Madison, Wisconsin). May 29–Danji Fukushima of Kikkoman Foods (Walworth, Wisconsin), Diane Loomans of The Magic Bean Co-op (Milwaukee, Wisconsin). May 30–Susan Dart (Lake Forest, Wisconsin), Research staff of Kraft Foods (Glenview, Illinois), Brian Schaefer of It's Natural (Evanston, Illinois). May 31–Paul Obis of *Vegetarian Times* magazine (with Brother Ron Pickarski) (Oak Park, Illinois). June 2–Lou Richard of Fearn Soya Foods, Leonard and Irene Stutman of INARI, Ltd. June 3–John Gingrich of The Soy Plant. June 4–Tim and Carol Ann Huang of Yellow Bean Trading Co. (Detroit, Michigan). June 5–Glen Blix and Charles D. Howes of Loma Linda Foods (Mt. Vernon, Ohio; furthest point east on tour). June 6–Warren Hartman of Worthington Foods (Worthington, Ohio). June 7–Mick Vissman and Bill Lutz of Hip Pocket Tofu Deli and Rain Star (Columbus, Ohio), Ed Willwerth of Soya Food Products (Cincinnati, Ohio). June 8–Jay McKinney of Simply Soyfoods (Bloomington, Indiana). June 9–Lynn Adolphson and Bob Thompson of Archer Daniels Midland Co., and Grant Smith of A.E. Staley Mfg. Co. (Decatur, Illinois). June 10–11–Les Karplus of Corn Country Foods and Strawberry Fields. June 11–William Thompson and John Santas of INTSOY (Champaign, Illinois).

During the INTSOY Short Course: July 6–We did a program hosted by Patricia Mutch at Andrews University (Berrien Springs, Michigan).

July 9–13–Third Annual Soycrafters Association of North America conference was held at the University of Illinois, produced by Richard Leviton. There were 270–285 attendees, and it made good money.

People at the University of Illinois we met during the course: Dr. William Thompson, Frances Van Duyne, Harold Kauffman, John Erdman, L.S. Wei, A.I. Nelson, M.P. Steinberg, Munir Cheryan, Ted Hymowitz, Woody Yeh.

Return trip after course: July 28–Bob Davis of Light Foods (St. Louis, Missouri). July 30–James Lowrie of Iowa State University (Ames, Iowa). Aug. 2–Lake Tahoe. Aug. 4–

Home in Lafayette, CA.

At most of the public classes/lectures on this trip, Shurtleff and Aoyagi served their favorite tempeh and tofu dishes. They wanted to find out how Americans liked tempeh, so they asked for a show of hands as to which the attendees liked best. The tempeh dish was usually Tempeh Cacciatore, and the results were, on average, that the tempeh was preferred by a ratio of 2 to 1 over the tofu.

On this trip, Shurtleff and Aoyagi did 27 public programs, had 28 media interviews and appearances, traveled 9,000 miles, earned \$13,000 gross income and \$8,500 net income. Address: P.O. Box 234, Lafayette, California 94549.

849. Shurtleff, William. 1980. Notes from INTSOY Short Course in soybean processing, SANA Conference (Urbana, Illinois), and subsequent research trip (May 5 to Aug. 3). Lafayette, California: New-Age Foods Study Center. 143 p. Unpublished manuscript. 28 cm. Spiral bound.

• **Summary:** This five-week INTSOY short course at the University of Illinois at Urbana began on 16 June 1980. Contents: Introduction (John Santas, Tom McGowen, Dr. Siedler, D. L.S. Wei). Tour of Food Science Lab. History of INTSOY, by Dr. Thompson. Soybean nutrition, by John Erdman. Soybean grading methods, by D. Wei. A.E. Staley Mfg. Co., by Hank Parker. Soybean oil and margarine, by E.G. Perkins. Soybean crushing, by Ross Brian. Soybean agronomy, by Bill Judy. Antinutritional factors in soybeans, by Dr. Wei. Harvesting, drying, and handling raw soybeans, by Gene Shove. Field trip to University of Illinois agricultural machinery dept. Soybean nutrition, by Barbara Klein. Livestock feeding, by Don Bray. Processing whole soybeans for food, by Dr. A.I. Nelson. Ralston Purina Co. and soy protein isolates, by Dr. Kolar. Film titled "Protein for People" from Ralston Purina.

Third week: Margarine, by Dr. Wei. Quality control of soy protein products, by Dr. Wei. Field trip to Kraft Foods Humco plant in Champaign, Illinois (Margarine, Vegemite). Wenger, extrusion cooking, and textured protein foods, by Randy McDonald. Low-cost extrusion cookers and cooking, by A.I. Nelson. Field trip to Lauhoff Grain Co. (good manufacturing practices). Drying foods, by Dr. Wei. Soya in Third World countries, by Dr. Thompson.

Fourth week: Soybean dal, by Dr. Nelson. Visit to Ted Hymowitz who is writing a book on the history of soybeans (p. 56). Sensory evaluation, by Dr. Tobias. Oriental soyfoods, by Dr. Wei.

Fifth week. Soymilk, soy yogurt, and soynuts, by Dr. Nelson (Kibun). Griffith Laboratories, by Ann Daniels (incl. history, HVP, soy protein concentrate, TVP). Home and village level production of soybean foods, by Dr. Nelson. Soy flour and soy fortified baked goods, by Dr. Cho-Chen Tsen of Kansas State Univ. Soybean crushing, soy flour, and plant sizes, by Sheldon Williams.

Shurtleff research trip. Visits to ADM and A.E. Staley

Mfg. Co. in Decatur, Illinois, American Soybean Assoc. in St. Louis, Missouri (Read William Morse's 1929-31 journal of trip to East Asia). Talks with David Hildebrand, Mike Tarano. Address: P.O. Box 234, Lafayette, California 94549.

850. Le Claire, J.-M.; Le Meter, L. 1980. 1.–Sur la route du soja [1.–On the route of soybeans]. *Ouest-France*. June 9. [Fre]

• **Summary:** Part one in a series on “Strategies concerning proteins,” this article discusses how and from where soybeans get to France.

Two companies have a quasi-monopoly: (1) Soja-France, owned by the American multinational Cargill, owns two solvent extraction plants—at Saint-Nazaire and at Brest. (2) Archer-Daniels Midland (ADM), also of the USA.

Tables show: (1) French consumption of soybean meal in 1978. That year some 595,515 tonnes (metric tons) of soybeans were crushed in France using solvent extraction. These soybeans were imported from the following countries—in descending order of amount (tonnes): Brazil 1,197,281. USA 372,000. Belgium 325,045. Netherlands 176,740. Germany 88,253. Argentina 78,430. United Kingdom 18,290. Other 18,320. Total: 2,274,889. Exports: 10,413. Used / consumed in France: 2,860,000.

(2) Imports of soybean meal to France through various seaports in 1978. For each port is given the total amount imported, and how much of that total came from which countries. In descending order of total (in tonnes): 1. Lorient 500,572 (83.2% from Brazil). 2. Bordeaux 375,606 (77% from Brazil). 3. Brest 210,159 (84% from Brazil). 4. Saint-Nazaire 164,230 (55% from Brazil). 5. Nantes 67,476 (69% from USA). 6. Caronte 61,687 (100% from Brazil). 7. Rouen 32,256 (68% from Argentina). 8. Saint-Brieuc 17,136. 9. Saint-Maio 14,510. Address: France.

851. **Product Name:** Granose Sausalatas (Meatless Sausages Canned in Brine) [Plain, or Smoked].

**Manufacturer's Name:** Granose Foods Ltd.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1980 June.

**Ingredients:** 1980: Water, wheat protein, rusk, peanuts, soya flour, vegetable fat, onion, hydrolysed vegetable protein, spices, herbs, oat flour, textured soya protein comprising defatted soya flour, niacin, calcium pantothenate, iron, vitamins B-6, B-2 and B-12, salt, yeast, soy isolate.

**Wt/Vol., Packaging, Price:** Can.

**How Stored:** Shelf stable; refrigerate after opening.

**New Product–Documentation:** Manufacturer's catalog. 1980. April. Shurtleff. 1981. “Delicious when fried, grilled, or baked.”

Form filled out and Label sent by Granose Foods Ltd. 1990. June 13. States that the product, made by Granose, was introduced in 1948. It is still on the market. Label. 1990. 8.5

by 4 inches. Brown, beige, and black on tan. Color photo of three sausages on a dish with vegetables. “Vegetable protein sausages containing no animal products whatsoever. Delicious when grilled, baked or fried. Ingredients (1990): Water, wheat protein, rusk, peanuts, soya flour, vegetable shortening, seasoning (comprising dehydrated onion, hydrolysed vegetable protein, spices and herbs), oat flour, textured soya protein (comprising de-fatted soya, niacin, calcium, pantothenate, iron, vitamin B-6, B-2 and B-12), salt, yeast, soy isolate.” Address is now Newport Pagnell, Bucks.

Color photo of package in *Linda McCartney's Home Cooking*. 1990. p. 18. The label is black, brown, and white on tan.

Note: This product was first introduced in 1948, but did not contain textured soy protein at that time.

852. Shurtleff, William. 1980. Notes on visit to Kraft in Glenview, Illinois and meeting with Dean Wilding and his research team. Lafayette, California. 1 p. June. Unpublished typescript.

• **Summary:** In 1975 Kraft bought Carnation's soy protein isolate plant at Coshocton, Ohio, and started soy research at that time. They now have 14 people in the protein products working primarily on soy. They are not looking mainly at soy protein isolates, but rather at full-fat soy flour (ffsf), made from defatted soybean meal produced by ADM and Central Soya.

They hot grind at 13% solids in an Urschel Comitrol, then spray dry the ffsf, which contains 40% protein and 25% fat. They remove the insolubles to make soymilk, then remove the sugars to make a full-fat isolate. The key area of use of soy is in imitation cheeses—which have better flavor but less functionality. Isolates cost \$0.90/lb vs. \$1.50 for casein. They are also interested in imitation fermented cream cheese.

Dean Wilding, the head of the team, is a fine man, vegetarian, Mormon, interested in natural foods.

They ferment their soy protein isolate with one pure culture, which gives it a new flavor; they then use this in experimental process cheeses in place of some sodium caseinate—which comes from cow's milk. We tasted this product. Kraft is apparently doing very little work on new products and not much with soy. Address: Lafayette, California.

853. *Soybean Digest*. 1980. Soy [protein food] demand grows in Spain. May/June. p. 40.

• **Summary:** “Here's a case study of how to develop a market. Exports of U.S. soybeans to Spain tripled from 701 metric tons of soy vegetable protein in 1976 to nearly 2,000 metric tons in 1979. When market development work began, it faced several challenges: high quotas and tariffs on texturized vegetable protein (tvp), government regulations on soy protein identification and a fragmented

industry with no organized government contact. First step by ASA: organize importers and help them develop a responsible food-ingredient group. The National Vegetable Protein Association formed in 1978. This group successfully appealed government ingredient requirements and gained liberalization of tvp imports. Duty on tvp was reduced from 47% to 11%. Other projects: soy protein educational program for pediatricians and dieticians and seminars on soy protein for Spanish decision-makers. Officials expect continuing efforts to help increase the tvp market to over 10,000 metric tons by 1986.”

854. Central Soya Co., Inc. 1980. Central Soya sells Chicago plant fixed assets to Archer Daniels Midland (News release). 1300 Fort Wayne National Bank Building, Fort Wayne, IN 46802. 1 p. Aug. 15.

• **Summary:** The fixed assets of the plant consist of a soy protein isolate facility and equipment, a grain elevator, and a warehouse at 1825 N. Laramie, Chicago. The sale price was not disclosed. On 3 Jan. 1980, Central Soya announced plans to discontinue the isolate portion of its soy protein business and to dispose of the assets.

Note: This was the original pioneering Glidden plant. With this purchase, ADM has entered the soy protein isolate business. Address: Fort Wayne, Indiana. Phone: 219-425-5295.

855. Dubois, Donald K. 1980. Soy products in bakery foods. *AIB Research Department, Technical Bulletin* 2(9):1-10. Sept. [12 ref]

• **Summary:** Contents: Introduction. Processing of soy products. Quality factors. Defatted soy flour. Enzyme active soy flour. Full fat, high fat and lecithinated soy flours. Soy grits. Soy protein concentrates. Soy protein isolates. Milk replacer blends. Soy bran. Nutrition. Products. Summary.

AIB stands for the American Institute of Baking. “Soy products, because of their unique functional and nutritional properties, have become major ingredients in many food systems. The use of soy protein as an ingredient, extender, or analog has spread to every category of food, and consumption of edible soy protein in the United States has grown from less than one hundred million pounds per year in the early 1960’s to over one billion pounds per year in 1978.”

Ten tables give the nutritional composition plus NSI (Nitrogen Solubility Index) and PDI (Protein Dispersibility Index) of different soy products, and the manufacturer of each, as follows: Table IV–15 defatted soy flours: A.E. Staley: Bland 50, I-200, and F-200. ADM Company: Baker’s Nutrisoy, Nutrisoy, and Toasted Nutrisoy. Central Soya Co.: Soyaffluff 200W. Cargill, Inc.: 70 PDI Soy Flour and 20 PDI Soy Flour. Dawson Food Ingredients: Dawsoy Flour 100/70, Dawsoy Flour 200/20, Dawsoy Flour 200/70, and Dawsoy Flour 200/88. Farmland Industries: 200L and 200E.

Table V–2 enzyme active soy flours: ADM Company:

Nutrisoy 7-B. Cargill, Inc.: 90 PDI Soy Flour.

Table VI–1 full fat soy flour made by Ingredients Systems, Inc.

Table VII–1 low fat soy flour made by Food Ingredients.

Table VIII–4 refatted soy flours made by ADM: 15% High Fat, Bakers Nutrisoy, Toasted Nutrisoy T-6, and Nutrisoy 220T.

Table IX–8 lecithinated soy flours: ADM Company: Soylec C6, Soylec C15, and Soylec T15. Central Soya: Soyalose 105W and Soyarich 115W. Cargill, Inc.: 3% Relecithinated soy flour, 6% Relicithinated soy flour, and 15% Relecithinated soy flour.

Table X–13 brands of soy grits: ADM Company: Defatted Soy Grits 8-20, Defatted Soy Grits 20-40, Defatted Soy Grits 40-80, and Defatted Soy Grits 80-0. A.E. Staley: Bland 50-Medium Grits and Bland 50-Coarse Grits. Lauhoff: Soy Grits 5/16, Soy Grits 8/30, and Soy Grits 20/0. Dawson Food Ind. [sic, Ingredients]: Dawson Grits 10, Dawson Grits 20, Dawson Grits 40, and Dawson Grits 60.

Table XI–3 “soy protein concentrates”: Griffith Labs: Promax 70. ADM Company: Ardex 700F and Ardex 700G. A.R. Staley: Sta-Pro.

Table XII–16 “soy isolates” (incl. pH, particle size, and special properties of each): Ralston Purina: Edipro A, Supro HD 90, Protein 220, Supro 350, Supro 610, Supro 620, Supro 630, Supro 660, and Supro 710. Dawson Food Ind.: Isoprime 900, Isoprime 900GL, Isoprime 900G, and Isoprime 900L. Grain Processing Corp.: Pro-Fam S-955 and Pro-Fam S-970.

Table XIII–1 type of soy bran: Nutrisoy Fiber, made by ADM. Address: American Inst. of Baking, Manhattan, Kansas.

856. *Nutrition News (Pomona, California)*. 1980. Soyfoods from the magic bean. 3(10):1-4.

• **Summary:** Discusses the nutritional value of soybeans, meat analogs, tofu, tempeh, miso, soy sauce, and TVP.

857. Boyer, Robert A. 1980. Work with Henry Ford and soybeans. III (Interview). Conducted by William Shurtleff of Soyfoods Center, Nov. 3. 3 p. transcript.

• **Summary:** Floyd Radford was head of Ford’s soy farms. At the Chicago World’s Fair the Ford exposition was producing soybean oil by solvent extraction of soybeans. The soybean oil was the sole fuel used to power a diesel engine, which ran an electric generator, which produced all of the electricity for the exhibit. It was very neat.

Boyer developed the first plant protein fiber in about 1938. That year the Ford Motor Co. had a machine to spin soy protein fibers at the World’s Fair in New York. He was aware of work in Italy spinning casein into fibers from reading technical journals prior to 1936. He used the term “spinning” because the textile industry uses that term to describe how rayon is produced. In both cases, a

more correct term would be “extruding,” since the dope is extruded through spinnerettes.

Ford’s soybean fiber spinning pilot plant had a capacity of 1,000 pounds of fiber a day, but they probably produced less than that. They would send the fiber to the mill, where 1 part of soy fiber would be blended with 3 parts wool to make sidewall (not seat) upholstery, which got less wear and wouldn’t mark like cotton.

When making soy protein isolates, the fiber (insoluble cellulose) is removed during clarification by centrifugation; no one had ever been successful in removing it by filtration, which would be better. After dissolving the soybean meal in alkali, it is clarified by centrifugation, then precipitated. Practically the same process is still used to make soy protein isolates.

Just a few plastic trunk lids were ever made, and they were used only on demonstration or experimental cars; they were never part of commercial Ford vehicles.

When Boyer left Ford Motor Co. he went to work for The Drackett Co., which bought Ford’s soy protein operations. Mr. Drackett sold [actually shut down] his soy fiber spinning operation in 1949. Drackett later sold all its soybean operations to ADM. After Boyer left Drackett in 1949 he filed for his first edible soy fiber spinning patent the same year; it may have been granted in 1951. He applied for a new, expanded patent, with much broader claims to a food product manufactured from man-made protein fibers, in 1951; it was granted in 1954.

In Aug. or Sept. 1949 Boyer paid his first visit to Worthington Foods. Worthington was the first company to whom he disclosed what he was doing, and showed a sample of a prototype product (pork chops) made from spun soy protein fiber. He did not go to Swift initially because he had been advised to keep away from meat companies, which might buy then bury his patents. If Worthington hadn’t been interested in his spinning process when he first visited them, he might have just given up then. He wasn’t sure if it was a screwball idea or not. Moreover, he had been out on his own for almost a year and was running out of money. Worthington was excited with Boyer’s idea but they needed a source of fiber.

So Boyer went to the Virginia Carolina Chemical Co. (VCCC) in Taftville, Connecticut. They were spinning fibers for cloth and they allowed him to use their spinning pilot plant in 1949 to produce the first edible spun soy protein fibers for research purposes and prototypes; he was not employed by them. VCCC was interested enough to call in Corn Products Corp. (CPC), which was interested—but they said they wanted to use corn gluten instead of soy protein. Boyer said “Fine.” After the first successful run, using the VCCC pilot plant, CPC got very interested. Fibers were spun from casein, corn gluten, and soy. CPC bought the first license to his soy fiber spinning process for food use in 1949. They took an exclusive option on the license for

9 months. The first sale of edible protein fiber was made by CPC to Worthington Foods; the fiber was made of corn gluten. After working for a year with CPC, everyone in the project realized that the flavor of corn gluten was so horrible that it would never work in foods. So CPC converted to a non-exclusive license. Boyer, now a bit desperate and against the advice he had been given, decided to approach a meat company. He chose Swift & Co., which took an option immediately; they were the second company to license his patent and from 1950 to 1954 they retained exclusive rights to his patent. In about 1955 Swift converted to a non-exclusive, and Boyer immediately went back to Worthington to see if they were interested in a license yet. They were.

So after having waited 7 years, Worthington finally purchased a spinning license in 1956. At that time, Boyer began to spend 50% of his time at Worthington for a year after they took the license. Initially Worthington did not spin their own soy fibers since it was too expensive for them and they did not have much money at the time. Ralston Purina was well equipped to make these fibers for them. It was not until the mid-1960s that Worthington started to spin their own fibers.

By 1977 seven large food companies had licenses on the patent: Swift & Co., Unilever/Lever Brothers in England, General Foods, Nabisco, General Mills, Ralston Purina, and Worthington.

The original Bac\*O’s were made from spun soy protein fibers. Today he thinks they are made from textured extruded soy flour. General Mills took a license from Boyer. They got 25% of his consulting time, Ralston Purina got 25% and Worthington got 50%. Bac\*O’s came on the market in about 1965 and were a real sensation. It was the biggest thing that had happened with Boyer’s idea to date.

Loma Linda is now spinning soy protein fibers, as is some company in Japan—or at least they used to be.

How big is the market for foods made from spun soy protein fibers? Boyer would guess at least \$30 million a year. Worthington’s total sales was \$20 million including gluten. Miles got Worthington a new plant shortly after they bought Worthington. Now Bayer owns Miles and Worthington. The Morningstar Farms line is not making the profits they would like it to make.

Note: This is the earliest English-language document seen (Oct. 2015) that uses the term “spin soy protein fibers.” Address: 632 Edgewater Dr., Apt. 731, Dunedin, Florida 33528. Phone: 813-734-2415.

858. Goodbrad, John. 1980. History of Sovex Natural Foods, Inc. and other small Adventist food companies (Interview). Conducted by William Shurtleff of Soyfoods Center, Nov. 26. 1 p. transcript.

• **Summary:** Sovex is a private company. John and his wife are Seventh-day Adventists, as are many of the company’s employees. John worked at the Boulder Sanitarium (also

called the “San,” in Boulder, Colorado) from 1947 to 1953; the Sanitarium owned 8 health food stores and he was in charge of them. During the time he was in Boulder, the Sanitarium did not manufacture any foods; they had already gotten out of that business.

Then he went to work for Collegedale Distributors (in Collegedale, Tennessee), which was owned by Southern Missionary College. They made, and still make, granola.

Sovex was founded in 1953 by the Hurlingers in Holly, Michigan. The company’s original product was Sovex, a flavor concentrate paste, made from a mixture of brewer’s yeast and soy sauce. In 1964 John bought the business and moved it to Collegedale, Tennessee, where he worked.

In 1981 Sovex products containing soy include Prothin Snack Chips, Vege-Pat (textured soy flour, in sausage, burger, and chili flavors), and Granola (their main product line, in nine flavors, many of which contain soy grits).

Sovex had no relationship with Madison Foods (of Madison, Tennessee). Madison was one of the pioneers in the meat substitute field. They were purchased by Worthington Foods, which phased out the Madison products. John has eaten Madison products on and off for over 50 years, but has had no direct contact with them for a number of years. John has a copy of *Back to Eden*, autographed by Jethro Kloss.

A Mr. White, who was a grandson of Ellen G. White, had a super soymilk recipe about 20 years ago. He started with soy flour, ran it through an homogenizer, then sweetened it with honey. People loved the flavor; it was fresh, not canned. He called it Nu-Milk and made it on the sly at the Southern Missionary College dairy in Collegedale, Tennessee. It was illegal because there are laws against putting anything but milk in a milk processing plant.

John just talked with Frank Miller (phone: 817-641-8343), who used to work for Madison Foods and who now owns Texas Protein Products, a company that sells TVP in Texas. Another key man was Bruce Stepanske, who made soymilk at Madison until it was discontinued. Address: President, Sovex Natural Foods, Inc., Box 310, Collegedale, Tennessee 37315. Phone: 615-396-3145 (or 2111).

859. *Soyanews (Sri Lanka)*. 1980. Soyameat sales climb. 3(4):1. Nov.

• **Summary:** “A ton of soyameat is sold in a day in the city of Colombo, according to one company now marketing soyameat in Sri Lanka. There are already three companies in the soyameat or textured vegetable protein importing and retailing business with Lankasoy, the first in the market, fetching the largest sales. The others are Delmege Forsyth who sell soyameat under the brandname TVP, Textured Vegetable Protein, and Ceylon Agencies and Industries Ltd. who market soyameat under the name Bontrae Textured Vegetable Protein.

People like its convenience. Mr. R.S. Wijesekara of Lankasoy “is certain that with more salespoints opened

throughout the country the predominantly Buddhist and Hindu public will increasingly turn to vegetable protein obtained from soyabeans.”

860. *SoyaScan Notes*. 1980. Chronology of soybeans, soyfoods and natural foods in the United States 1980 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Jan. 4. An embargo on the sale of grain to the USSR is announced by President Carter in retaliation for the Soviet invasion of Afghanistan. Though the embargo was lifted in 1981, it led to a subsequent reduction on Soviet purchases of U.S. soybeans and products.

Feb. Second issue of *Soycraft* magazine published by Leviton. 5,000 copies. On Shurtleff’s suggestion, Leviton decides to change the magazine’s name to *Soyfoods* in future issues. Feb. By now *Soycraft* magazine and the Soyfoods Association of North America (SANA) are subscribing to a press slipping service (probably Luce). This subscription continues until early 2001.

Feb. New England Soy Dairy holds a big press conference and soyfoods luncheon in Boston.

Feb. First statistics on the size of the U.S. soyfoods industry and market published by SANA (Soyfoods Association of North America) and The Soyfoods Center.

Feb. Plenty, a Third World development and relief organization run by The Farm in Tennessee, works with the people of Solola, Guatemala to open a solar-heated soy dairy. They make tofu and soy ice cream. Partial funding comes from Canadian International Development Agency (CIDA). A promising, original concept and model for taking soybeans and soyfoods to Third World countries.

March 10. *Tempeh Production* by Shurtleff and Aoyagi published by The Soyfoods Center (176 p., 8½ x 11 inches).

March. Trader Vic (Bergeron), internationally famous San Francisco restaurateur, publishes a poster titled “Put a Little Tofu in Your Life,” containing a lovely Polynesian girl and names of tofu recipes served at his restaurants. Three major newspaper stories on his tofu cuisine follow.

March. Soja Soyfoods Cafe opens in Toronto, Canada.

March. Hip Pocket Tofu Deli and Rainstar, a distributor of soyfoods, open at the same location in Columbus, Ohio.

March. A second commercial source of tempeh starter culture is now available from Ann Arbor Biological Supply [Michigan] and GEM Cultures, run by Gordon McBride and Betty Stechmeyer.

April. “Climbing Curd,” an article on tofu, published in Time magazine, as a result of the New England Soy Dairy Press Conference in February.

May. New England Soy Dairy puts Numu brand soymilk on the market after 2 years of product development. It is quickly withdrawn and dropped, due to short shelf life.

May 5 -June 9. Shurtleff and Aoyagi do Soyfoods America Tour: 20 public programs, 30 media interviews, and

5,800 miles of driving to promote and teach about tempeh and tofu. Ends in Champaign / Urbana, Illinois where Shurtleff attends the INTSOY Short Course on Soybean Processing for 2 months.

May. Gary and Chandri Barat start selling soyfoods (Whipped Tofu Mousse Pie, Tofu Muffins, Tofu Spinach Quiche) at street fairs in New York City under the name Legume. During 1980 both Legume and Quong Hop & Co. in South San Francisco introduce tofu quiches (both sold frozen); these are America's first tofu entrees to be sold frozen.

June. "Tofu" by Nancy DeRoin published as a cover story by *Cuisine magazine*.

June. U.S. Supreme Court rules that man-made organisms created by genetic manipulation can be granted copyright protection. This ushers in a new era of research on and commercialization of soybean varieties by private companies.

June. INTSOY and Land of Lincoln Soybean Farmers establish International Soybean Institute, headed by Russ Odell, to expand soybean utilization overseas.

June. American Soybean Association's *Soya Bluebook* publishes its first information on the new wave of U.S. soyfoods producers.

July. *Das Miso Buch* (The Book of Miso), by Shurtleff and Aoyagi published in German by Ahorn Verlag.

July 9-13. Third Annual Soycrafters Conference at the University of Illinois. Organized and financed by Richard Leviton. 270-285 attendees from 10 foreign countries. Very successful, with a profit of \$7,000. Third issue of Soyfoods magazine published by Leviton. A new Board of Directors is elected with Luke Lukoskie as chairman.

July. Mark Brawerman starts Jolly Licks (later renamed Pacific Trading Co.), a soyfoods marketer-distributor, in San Francisco. First product is soymilk ice cream. Quickly expands to tofu cheesecakes, tofu tamales, etc. Best existing model of this new concept.

Aug. 15. Archer Daniels Midland Co. enters the soy protein isolate market with its purchase of Central Soya's isolate plant.

Aug. Wildwood Natural Foods, Inc. formed in Fairfax, California. Original owners are Paul Duchesne, Paul Orbuch, Bill Bramblett, and Frank Rosenmayr. They do very creative work with prepared, convenience tofu products, such as sandwiches and salads.

Aug. *Tofu: Everybody's Guide*, by Stephen Cherniske published by Mother's Inn Center for Creative Living.

Aug. *The Soy of Cooking*, by Norton and Wagner self-published.

Aug. 20. "Tofu Gaining Popularity as a Cheap Protein Source," by Sylvia Porter published in the *Washington Post*. This is the earliest known publication to mention David Mintz's work with tofu. It describes the numerous deli products he makes from tofu. Ice cream is not mentioned.

Sept. 3. "Tofu: Trader Vic's Creativity Americanizes an Asian Staple" by Harvey Steiman published in San Francisco Examiner. Trader Vic is one of America's foremost restaurateurs.

Sept. Richard Leviton (Soyfoods Association) and Thelma Dalman (food service director for Santa Cruz city school system) lobby for tofu in Washington, D.C. USDA grants 1-time approval for a test program using tofu in Santa Cruz County School Lunches. But this failed to set a national precedent.

Sept. Soyfoods Association board holds first meeting in Colrain, Massachusetts. Plans fund raising program that fizzles.

Sept. 17. New-Age Foods Study Center (run by Shurtleff & Aoyagi) changes its name to The Soyfoods Center. Creates new logo and letterhead.

Sept. 24. "A Couple on a Tofu Mission in the West" (about William Shurtleff and Akiko Aoyagi) by Lorna Sass, published in *The New York Times*.

Oct. First issue of *The Beanfield* (named after a chapter in *Walden* by Henry David Thoreau) a monthly soyfoods newsletter, published by Leviton. Name changed to *Soyfoods Monthly* in March 1982.

Oct. Tofu and The Bountiful Bean Plant in Madison, Wisconsin are on the Today Show for 2 minutes. This TV segment is aired 2-3 times.

Oct. 13. "With his Book on Tofu William Shurtleff Hopes to Bring Soy to the World" by Dianna Waggoner published in *People* magazine (circulation 3.4 million). The same issue noted: "Model Cheryl Tiegs" has been eating tofu for several years and gives it some of the credit for helping her to lose 35 pounds in 1972. Her favorite recipe for Oriental Pudding (with "1 block tofu (4 ounces)") is published.

Oct. Severe nationwide shortages of peanuts and peanut butter. Soyfoods producers miss a golden opportunity to make and sell soynut butter.

Nov. 1. First Soycrafter Apprenticeship Program begins at Island Spring, Vashon, Washington (state). Conceived of and directed by Luke Lukoskie, each program lasts 21 days, strongly emphasizes practical experience supported by books, periodicals, and tapes. Six programs per year. Costs: \$20 non-refundable registration fee plus \$500 individual tuition; \$400 per person group rate for two or more from the same business.

Nov. 9-14. World Conference on Soya Processing and Utilization held in Acapulco, Mexico, organized primarily by the American Soybean Assoc. 1,100 participants from 35 nations; of these approximately 300 registrants and 250 student attendees were from Latin America. Proceedings published in March 1981 issue of Journal of the American Oil Chemists' Society. Leviton attends and mans a SANA booth, but is not invited to speak.

Nov. Soyfoods Center publishes three pamphlets on

soyfoods in Spanish: *Que es el Tofu? Que es el Tempeh? Que es el Miso?*

Nov. *East West Journal* and Michio Kushi stop misusing the term “tamari” and start using the proper term, shoyu or “natural shoyu.”

Dec. The Soyfoods Center and Soyfoods magazine merge and computerize their mailing lists of people and organizations world wide actively interested in soyfoods. 5,000 names now on list. Soyfoods Center pays all costs of computerization. By mid-1981 there were 10,600 names in 50 categories. List is available for rent.

Dec. Farm Foods starts national ad campaign for Soy Ice Bean with full-page color ads in national magazines: *New Age*, *Whole Foods*, *East West Journal*, and *Vegetarian Times*.

Dec. First branch of the International Soyfoods Center Network starts in Sweden, run by Ted Nordquist. Headquarters are in Lafayette, California.

Dec. *The Tofu Primer* by Juel Andersen published by Creative Arts.

Dec. Soymilk viili is first made (on a home scale) by Gordon McBride and Betty Stechmeyer of GEM Cultures in Fort Bragg, northern California. This cultured milk product, similar to the traditional Finnish dairy product, has a thick consistency almost like honey.

Dec. New England Soy Dairy becomes the first of the new generation of Caucasian-run tofu companies to top \$1 million in annual sales (they hit \$1.2 million). With only 6 workers in the plant, they are making \$4,000 profit per month during the last quarter.

Dec.—Seth Tibbott of Turtle Island Soy Dairy starts making and selling tempeh out of Hope Co-op, Forest Grove, Oregon, about 20 miles west of Portland, Oregon.

\* In *Diamond v. Chakrabarty*, the U.S. Supreme Court upholds by 5 to 4 the patentability of genetically altered microorganisms, opening the door to greater patent protection for any modified life forms.

861. **Product Name:** Granose Chicken Flavoured Savoury Pudding.

**Manufacturer’s Name:** Granose Foods Ltd.

**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1980.

**Ingredients:** Wheatmeal flour, vegetable fat, textured soya protein, maize starch, soya flour, salt, onion, hydrolysed vegetable protein, milk powder, leek, mushroom, yeast, vegetable oil, herbs, silica, spices, natural monosodium glutamate.

**New Product–Documentation:** Manufacturer’s catalog. 1980. April. “Chicken flavoured pie filling in the same delicious pastry case as the original Granose Savoury Pudding.”

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by Granose, was introduced in

1980. This product has been discontinued.

862. **Product Name:** Granose Soya Oil.

**Manufacturer’s Name:** Granose Foods Ltd.

**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1980.

**Ingredients:** Soya oil.

**Wt/Vol., Packaging, Price:** Bottled.

**How Stored:** Shelf stable.

**New Product–Documentation:** Manufacturer’s catalog. 1980. April. “High grade, 100% Soya oil suitable for all culinary purposes.”

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by Granose, was introduced in 1980. It has been discontinued.

863. **Product Name:** Granose Swiss Cup.

**Manufacturer’s Name:** Granose Foods Ltd.

**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1980.

**Ingredients:** Rye, oats, millet, barley, figs, chicory.

**New Product–Documentation:** Manufacturer’s catalog. 1980. April. “An instant cereal beverage. A substitute for coffee. Contains no caffeine or tannin.” Note that it also contains no soy.

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by Granose, was introduced in 1980. It has been discontinued.

864. **Product Name:** Granose Chicken Flavoured Pie Filling.

**Manufacturer’s Name:** Granose Foods Ltd.

**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1980.

**Ingredients:** Textured soya protein, maize starch, wheat flour, salt, onion, hydrolysed vegetable protein, milk powder, leek, mushroom, yeast extract, vegetable oil, herbs, silica, spices, monosodium glutamate.

**New Product–Documentation:** Manufacturer’s catalog. 1980. April. “A tasty soya protein pie filling flavoured with mushrooms and other vegetables. Bake in a pastry case, or serve as a casserole with other vegetables or as a snack on toast.” Shurtleff. 1981. *Overseas Adventist Food Companies*. p. 6. They imported some of these meat analogs under their own brand from Nutana, and also imported soymilk from Loma Linda in Ohio, and packaged it under their Granose brand.

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by Granose, was introduced in 1980. It has been discontinued.

865. **Product Name:** Granose Bolognese Sauce.

**Manufacturer's Name:** Granose Foods Ltd.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1980.

**Ingredients:** Tomato puree, textured soya protein, maize, starch, onion, hydrolysed vegetable protein, salt, wheat flour, oregano, garlic, bay.

**New Product–Documentation:** Manufacturer's catalog. 1980. April. "Italian style Bolognese sauce with seasoned, minced soya protein. Serve hot with spaghetti or vegetables."

Rombauer's "The Joy of Cooking" (1975 ed., p. 353) has a recipe named Bolognese Pasta Sauce, which contains the following ingredients in descending order of predominance: Chopped lean beef, beef stock, dried mushrooms, dry white wine, and butter.

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by Granose, was introduced in 1980. It has been discontinued.

866. **Product Name:** [Soyana Unflavored TVP (Chunks, or Minced)].

**Foreign Name:** Soyana Soya (Kloesse, or Gehackt).

**Manufacturer's Name:** Soyana.

**Manufacturer's Address:** Postfach 8039, Friedensgasse 3, CH-8002 Zurich, Switzerland. Phone: 012-028-997.

**Date of Introduction:** 1980.

**Wt/Vol., Packaging, Price:** 250 gm plastic bag. Retails for 4.70 Swiss francs (11/83).

**How Stored:** Shelf stable.

**New Product–Documentation:** Letter from Verena Krieger. 1983. March 8. Soyana started selling TVP in 1980. R. Leviton. 1983. Report on trip to Europe with American Soybean Assoc. Oct-Nov. p. 17. Soyana Soya Klosse (puffed TVP) seen in Reformhaus health food store in Zurich, Switzerland.

Talk with Walter Dänzer. 1990. May 30. The product is unflavored TVP sold in two textures, chunks and minced. Sold in 250 gm plastic bags, it was Soyana's first product.

Note: This is the earliest record seen (June 2015) concerning Soyana.

867. **Product Name:** Westico Vege-Steak (Beef-Flavored Textured Vegetable Protein).

**Manufacturer's Name:** Westico Foods.

**Manufacturer's Address:** West Indies College, Mandeville, Jamaica.

**Date of Introduction:** 1980.

**How Stored:** Shelf stable.

**New Product–Documentation:** Letter from Robert Folkenberg. 1983. Feb. 15. "This company, organized in 1970, is presently a fairly small operation, producing about 2 tons of TVP each week. We fully expect this rate of production to increase dramatically in the near future."

Form filled out and labels sent by Westico. 1990. June 28.

Note: This is the earliest known commercial soy product (one of two products) made in Jamaica.

868. **Product Name:** Westico Vege-Mince (Beef-Flavored Textured Vegetable Protein).

**Manufacturer's Name:** Westico Foods.

**Manufacturer's Address:** West Indies College, Mandeville, Jamaica.

**Date of Introduction:** 1980.

**New Product–Documentation:** Letter from Robert Folkenberg. 1983. Feb. 15. "This company, organized in 1970, is presently a fairly small operation, producing about 2 tons of TVP each week. We fully expect this rate of production to increase dramatically in the near future."

Form filled out and labels sent by Westico. 1990. June 28. Also in about 1980 Westico Foods started selling Loma Linda Vita-Burger Chunks, Redi-Burger, and Linketts. The label for each, which is basically the Loma Linda label, states that each food is "Processed by Westico Foods."

Note: This is the earliest known commercial soy product (one of two products) made in Jamaica.

869. Binding, G.J. 1980. About soya beans: Wonder source of protein and energy. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. and New York: Pyramid Books. 64 p. 18 cm. 1st ed. 1970. About series, no. 35.

• **Summary:** Contents: 1. Beans in general. 2. History of the soya bean. 3. Content of soya beans. 4. About lecithin—vital for retaining youth. 5. The soya bean in the Far East. 6. American influence on the soya bean. 7. Industrial uses in America. 8. The soya bean and world food shortage. 9. Soya bean recipes.

A section titled "Wonder food—God's gift to man" (p. 10) states: "For over 5,000 years this tiny seed has been the staple food of certain parts of the East, including North China, Japan, Korea, and some areas of India. The ancient Yogis, who were among the world's first vegetarians, placed great faith in the soya bean as a supplement to their meatless diet." On the cover is a color photo showing TVP, lecithin, soymilk, soy sauce, miso, soya bean oil, soya flour, and soya sprouts.

Note 1. The copyright page states: "First published 1970. Second impression 1971. Third impression 1977. Second Edition, revised and reset 1980." Note 2. This book has no preface by Carlson Wade. Address: F.R.H.S., England.

870. Burbach, Roger; Flynn, Patricia. 1980. Agribusiness in the Americas. New York, NY: Monthly Review Press. 314 p. Index. 21 cm. [62 ref]

• **Summary:** "In southern Brazil, more than a dozen multimillion-dollar soybean processing plants owned by U.S. multinationals are scattered throughout the region.,

surrounded by large-scale mechanized soybean farms, none of which existed two decades ago.” In Brazil, soybean production has been growing at the rate of 8-12% a year over the past decade (p. 84-85).

The chapter titled “The U.S. Grain Arsenal” gives a history and assessment of PL 480, the U.S. Food for Peace Program (established in 1954), as “an institutionalized arm of U.S. imperialism... In the past 25 years, close to \$30,000 million worth of agricultural commodities have been shipped overseas under the PL 480 program. It is not surprising that little of this food has reached the hungry in recipient countries, since the original legislation did not even pretend to have a humanitarian purpose (The humanitarian intent clause was added to the law much later.) As suggested by its name—Agricultural Trade and Development Act—PL 480 was intended primarily to develop future commercial markets for U.S. grain exports and to solve the problem of mounting U.S. farm surpluses by dumping them overseas.

“In line with this purpose, over three-quarters of PL 480 commodities have been shipped abroad under long-term, low-interest credits provided by Title I of the law. These credits allow foreign governments to import U.S. agricultural products for resale in their own countries...”

The sale of Title I commodities generates funds for the recipient governments (known as “counterpart funds”); these funds as a form of U.S. economic assistance, which have often been used to finance military expenditures. The repayment of PL 480 loans in local currencies was allowed until 1981.

Title II of the program, under which the U.S. finances food donations to “friendly countries” through private international relief agencies is of less direct political use.

During the first 12 years of the PL 480 program, “one-quarter of all U.S. agricultural exports were financed by PL 480’s easy credit terms... In 1969 PL 480 accounted for only 15% of U.S. agricultural exports, and by 1977 this figure had dropped to 4%.

“Under the guise of the food aid program, the U.S. Department of Agriculture has worked hand in glove with grain multinationals to develop these commercial markets. One of their goals has been to generate demand for U.S. agricultural products by encouraging people abroad to adopt American-style eating habits. Trade associations representing the U.S. food industry have received millions of dollars worth of PL 480 local currencies toward this end. The U.S. Feed Grains Council, for example, has used these monies to promote the development of local livestock and poultry industries which rely on imported feed grains. Another example is the Western Wheat Growers Association, which has encouraged people throughout Asia to eat wheat-based products like bread instead of locally grown rice.”

Page 255: Archer-Daniels-Midland Co.

Brazil: 1974 acquired; soybean processing, edible oil refinery; Tecnologia Tecnologia em Vegetais e Proteinas SA

/ 50

1974 acquired / soybean processing, edible oil; ADM do Brasil Productos Agricolas

Cayman: 1974; soybean meal [built]; Agriproduct; 100 1975; offshore insurance; Agrinational / 100

Mexico: 1956 acquired; 1966: sold; grain mill products; Productos Api Aba SA / 50

1964 acquired; 1967: sold; plastics, synthetic resins; Admex SA / 40

1966; plastic resins; Quimica Organica SA

Peru: 1956 whaling station [built]; Balanerna del Norte SA / 50 Address: Members of NACLA.

871. Food Protein Council. ed. 1980. Government seminar. May 21, 1980: Abstracts and remarks. Washington, DC. 43 p. 28 cm. [65 ref]

• **Summary:** See next page. Contents: Introductory remarks, by B. Marlo Dirks (Procter & Gamble Co.). Rationale of soy products, by Russell Cooper (Ralston Purina Co.). Technical and nutritional aspects of soy protein, by Endre Sipos (Central Soya Co.). Current regulatory issues involving vegetable protein products, by Eugene I. Lambert (Covington and Burling, FPC Counsel). Educational effort by FPC, by Helen Horton (Miles Laboratories, Inc.).

Food Protein Council member firms: ADM, Cargill, Central Soya, Dawson Food Ingredients, General Foods Corp., General Mills, Inc., Grain Processing Corp., Honeymead Products, Kraft, Inc., Miles Laboratories, Inc., Nabisco, Inc., Procter & Gamble Co., Ralston Purina Co., A.E. Staley Mfg. Co. Address: 1800 M St., Northwest, Washington, DC 20036.

872. Leneman, Leah. 1980. Slimming the vegetarian way. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 96 p. Illust. Index. 18 cm. 2nd impression 1982. 3rd impression 1984.

• **Summary:** This slim little book is a vegetarian cookbook; numerous recipes call for skimmed milk or low fat yogurt or grated parmesan cheese or scrambled egg. The menus are designed for one person.

Contents: British/American equivalents. Introduction. Spring menus. Summer menus. Autumn menus. Winter menus. ‘Crash’ diets. Sweets. Vegetarian wholefood calorie chart.

Unflavoured mince style TVP is mentioned on pages 25, 59. Tamari (soya sauce) on pages 31, 33, 41, 46, 55. Granogen soya milk on p. 92. Tinned soya milk on p. 93. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

873. Maple Leaf Mills Ltd. 1980. Maple Leaf Mills: The company that grew with Canada. Toronto, Ontario. 22 p.

• **Summary:** The section titled “Maple Leaf Monarch Limited” (p. 12-13) states: “The corporate decision carrying

# FOOD PROTEIN COUNCIL



**Government Seminar**

**MAY 21, 1980**

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**Abstracts and Remarks**

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the largest dollar tag ever in Maple Leaf Mills history was the vegetable oil processing complex at Windsor, Ontario.

“This huge, \$50 million plant is the country’s largest vegetable oil processing operation. It started up in 1979. The plant will supply more than a third of eastern Canada’s vegetable oil and meal market. Jointly owned by Maple Leaf Mills and Lever Brothers Limited, it operates as a separate company, Maple Leaf Monarch Limited.

“Maple Leaf Mills had been in the vegetable oil business since the early years of World War II. The original refinery processing oilseeds, mainly soybeans, was located on Toronto’s central waterfront.

“This facility, however, became obsolete for a number of reasons. Despite expansions, the overall capability of the plant to produce oil and meal volumes for the markets of the 1970s and 1980s was limited. As well, the long-term plans by several levels of government to revamp Toronto’s waterfront meant the plant would ultimately have to be torn down.

“With the Windsor plant now in operation, Maple Leaf Mills and Lever Brothers share a partnership in one of the western world’s largest and most modern vegetable oil refineries.

“Two main operations are carried out at this facility—seed crushing and oil processing. The seed-crushing operation processes about 450,000 tonnes (metric tons) of oilseeds annually, approximately 80 per cent of which are soybeans. The oil processing section produces about 50,000 tonnes of vegetable oils which are consumed in the production of margarine, shortening, salad and cooking oils. Technical oil products are used in the manufacture of paints, varnishes, printing inks and caulking compounds. The high protein meals produced are aimed primarily at the poultry and livestock feed markets of eastern Canada.

“Maple Leaf Monarch’s Windsor plant represents a major market for Canadian soybean growers, located as it is in an area served by excellent transportation facilities to enable economic assembly of raw materials for processing.” An aerial photo shows the “Maple Leaf Monarch vegetable oils plant at Windsor, Ontario, one of the world’s largest.”

A section titled “History Highlights” (p. 16-21) gives a chronology of the company from 1833 to 1980. 1904–Maple Leaf Flour Mills Company Limited incorporated under Dominion of Canada letters patent. The company soon begins acquiring other flour mills and elevators. 1908–Maple Leaf acquired Wheat City Flour Mill (in Brandon, Manitoba; founded 1901) 1910 April 5–Maple Leaf Milling Co. Ltd. formed to take over assets of Maple Leaf Flour Mills Co. Limited, with mills at Thorold, St. Catharines, Kenora, and Brandon, and grain elevators in Western Canada. Also Hedley Shaw Milling Co. (est. 1901, by acquiring Grantham Mill {St. Catharines, est. 1836} and Welland Mills {Thorold, est. 1848}). 1928–Toronto Elevators built elevator of 2 million bushels capacity at Queens Quay, Toronto. The

company also purchased all 1,156 outstanding shares of Sarnia Elevator Co. Ltd.

1946–“Toronto Elevators started oil refinery at Queens Quay and began importation of food oils.”

1956–“Toronto Elevators modernized Queens Quay feed plant and acquired a new elevator at Wallaceburg.”

1961–“Amalgamation of Toronto Elevators Limited, Maple Leaf Milling Company Limited, and Purity Flour Mills Limited. Maple Leaf Mills Limited was the emerging company.”

1972–“Federal Government expropriated the Queens Quay complex for future redevelopment of Toronto harbor lands.” 1975–“Maple Leaf Mills and Lever Bros. commenced a joint venture, construction of a major vegetable oil plant at Windsor, Ontario.” Note: This is the first mention of Lever Bros. in this chronology. 1976–“Norin Corp., of Florida, acquired 74% of the common stock of Maple Leaf Mills.” 1979–“Norin Corp. acquired all outstanding common shares of Maple Leaf Mills.”

1980 “Canadian Pacific Enterprises Limited, of Montreal, acquired all common shares of Maple Leaf Mills as a result of purchase of Norin Corp.”

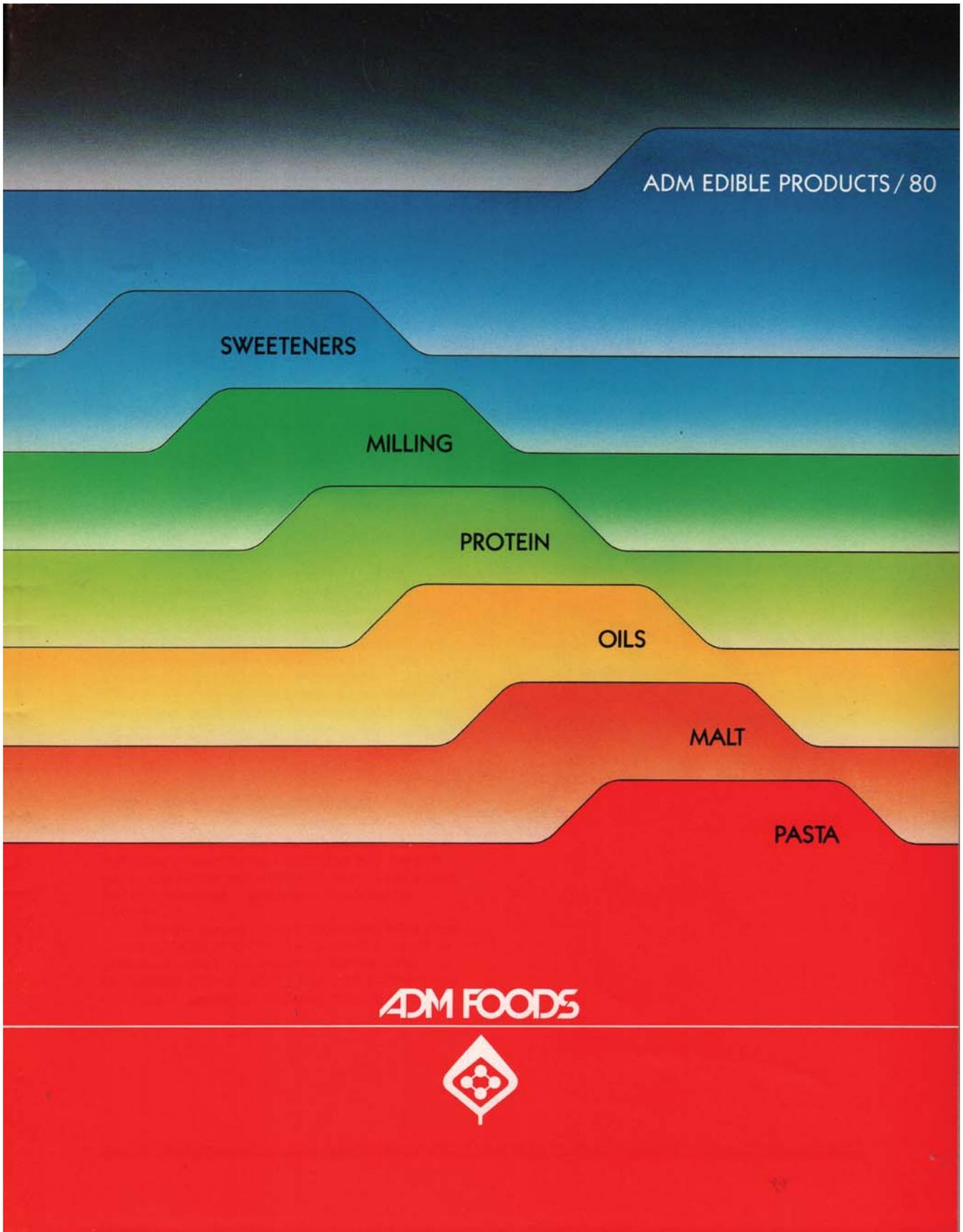
On page 22 is a historical listing of the presidents of Maple Leaf companies, with their dates of office. Address: Toronto, Ontario, Canada.

874. ADM Foods. 1980? ADM edible products: Sweeteners, milling, protein, oils, malt, pasta. Box 1470, Decatur, IL 62525. 26 p. Undated. 28 cm. Catalog.

• **Summary:** See next pages. Pages 14-16 describe the following soy protein products and give their nutritional composition: TVP textured vegetable protein, TVP condiment types (bacon flavor bits and chips, sausage flavor bits, pepperoni flavor bits, cheese flavor bits, onion flavor bits, garlic flavor bits), Nutrisoy 101, Soylec Special, Nutrisoy Fiber soy bran, Toasted Nutrisoy flour defatted soy flour, Nutrisoy flour, defatted soy flour, Bakers’ Nutrisoy, defatted soy flour, Nutrisoy 7B flour, defatted soy flour, Soylec lecithinated soy flour and 15% refatted B.N., Soylec T-6, Soylec T-15 lecithinated soy flour, Toasted Nutrisoy grits 8-20, 20-40, 40-80, 80-0 defatted soy grits, Soybean Brewflakes, defatted soy flakes, Ardex 700F (free-flowing powder) and Ardex 700G (grit form) soy protein concentrate. Address: Decatur, Illinois.

875. Pural. 1980? Spécialités Pural [Pural specialties]. France: 14 p. Undated. 21 cm. [Fre]

• **Summary:** This Seventh-day Adventist company sells the following soy-related products: Sojlactis (soymilk). Sojanelles (meatless soya quenelles or dumplings). Granotose and Frika-Vita. Grano-san (a paté that includes soy flour). Sandwich-san (with soy flour). New products: Sojanelles épicées, Pasta-Chuta (with soy proteins). Sojafleish (soymeat based on TVP).



876. Shellenbarger, Sue. 1981. Generous maverick. ADM's Andreas takes risks that pay off—with a little help. Gasohol, fructose ventures succeed after congress adopts favorable laws. Financing useful politicians. *Wall Street Journal*. Jan. 15. p. 1.

• **Summary:** 1965—ADM today would not be recognized by anyone who knew it in 1965; that is when Shreve M. Archer Jr. and John H. Daniels, who represented the company's controlling families, invited Dwayne Andreas and his brother Lowell to rescue the company from a three-year slide in earnings. They did indeed transform the sleepy oilseed milling and chemical firm into an agricultural processing powerhouse with annual sales of \$2.8 billion, profits of \$116 million, and a highly promising future outlook.

1974—Andreas decides to spend \$20 million on a commercial fuel-alcohol plant. Gasohol is 90% gasoline and 10% ethyl alcohol. But the plant was too years too early—until the 1978 revolution in Iran created new fears about petroleum supplies.

Mr. Andreas spends about 60% of his time jetting around the world, working to open up new markets in places like China, pressing his causes in Washington, DC, and just thinking up new ideas.

Justin Dart, chairman of the executive committee of Dart & Kraft Industries Inc. calls Dwayne Andreas “one of the smartest guys in America.”

“Mr. Andreas has had friends in the past six presidential administrations,” and “he has always hedged his bets by contributing as much to Republicans as Democrats...” In 1972, for example, he gave roughly \$150,000 to the late Minnesota senator Hubert Humphrey, his longtime friend and mentor. Thinking of Humphrey he says: “If I could do it over again, as long as I could afford it, I'd give a hell of a lot more.”

That generosity, Dwayne Andreas says, “springs from his religious training as a Mennonite, a conservative denomination dictating a simple, agrarian life. He was taught to give 10% of his income to ‘whatever I thought was good, and that includes politics, churches and schools, and I always have. And more. And I'm proud of that.’”

A handsome dot-style illustration shows Dwayne Andreas. Address: Staff Reporter of the Wall Street Journal.

877. **Product Name:** Granose Soya Milk (Plain, or with Carob).

**Manufacturer's Name:** Granose Foods Ltd. (Marketer). Made in Belgium by Alpro.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1981 January.

**Wt/Vol., Packaging, Price:** 500 ml Tetra Brik Aseptic carton.

**How Stored:** Shelf stable; refrigerate after opening.

**New Product—Documentation:** Soyfoods Center Computerized Mailing List. 1983. July 20. STS. 1985. Containers for Soymilk. Shows color photo of 500 ml Tetra Brik carton. Orange and green on white. “100% Vegetable. Rich in protein. High in polyunsaturates.” Use by 7/84.

Form filled out by Alpro. 1990. May 30. Alpro began making this product (2 flavors) in Jan. 1981 in 500 ml cartons. Granose stopped buying it from Alpro in Dec. 1984; DE-VAU-GE became the new source.

Note: This is the earliest product seen in Britain that uses “Soya Milk” as the product name.

878. Howse, Eric. 1981. Seventh-day Adventist work with soyfoods worldwide (Interview). Conducted by William Shurtleff of Soyfoods Center, Feb. 12. 2 p. transcript.

• **Summary:** Howes was the International Director at the General Conference in Washington, DC, until he retired. Soyfoods are a rapidly growing component of Adventist food work worldwide. Discusses: Sanitarium Health Food Co. in Australia, DE-VAU-GE in West Germany, Granose Foods in England. A major new component is low-cost extruders making TVP. Address: 6471 Penn National Drive, Fayetteville, Pennsylvania 17222. Phone: 717-352-7239.

879. Whisker, Ray G. 1981. Re: Breeding and growing soybeans in soybeans in the U.K. Letter to William Shurtleff at Soyfoods Center, Feb. 21. 1 p. Typed, with signature.

• **Summary:** Dear Bill, Thanks for your letter.

“The soy seldom gets publicity in the U.K., and this is usually confined to its use in tvp products which are not too popular. Soybeans can never become a viable farm crop in U.K. as climatic conditions are generally unfavorable. But is has potential as a home-garden high protein vegetable and, perhaps, as a supplemental feed crop for very small-scale farmers. I am thinking primarily of certain small-leaf overseas strains which cannot flower in Britain, and thus make extra foliage as compensation for lack of flowers.”

“Found your catalog most interesting and hope your work and literature will continue to flourish and prosper. I make soymilk from a 1940 Canadian recipe, and we use the leftover mash in cakes and stews etc. It must be the most versatile vegetable on earth. Where else can you find a plant which provides ‘meat’ ‘milk’ ‘Cheese’ and Oil.” Address: Soybean Breeder, East Molesey, Surrey, England.

880. John, Harrison W. 1981. Adventist food industries: Recent developments. *Spectrum: Journal of the Association of Adventist Forums* 11(3):28-36. Feb.

• **Summary:** One of the most informative articles ever written about Seventh-day Adventist food companies worldwide. “Ever since Ellen G. White's health reform message of 1863, Seventh-day Adventists have had a ‘theology’ of nutrition.” In 1979 food sales for Adventist manufacturing and marketing companies totaled \$188

million, up 95% over 1974 sales of \$96 million, and up 3.68 times over 1970 sales of \$51 million. The most successful company is Sanitarium Health Food Company in Australia. Sales for the 5-year period 1975-79 totaled \$400 million. Their most popular product is read-to-eat “Weet Bix,” a breakfast cereal that outsells Kellogg’s Corn Flakes in Australia.

In Europe: Earned income figures for 1978 were impressive. DE-VAU-GE’s income was \$12.2 million (second only to Sanitarium Health Foods in Australia). Nutana’s was \$7.6 million (\$10 million in 1979), and Granose’s was \$1.8 million. Nutana showed an impressive tenfold sales increase from 1973 to 1979.

Profit figures, however, were not impressive. In 1978 Granose lost about \$295,000 and Nutana \$5,903. DE-VAU-GE’s profits were unknown. Granose had been a consistent money loser; between 1975 and 1978 it lost an average of \$101,000 a year and its net worth decreased from \$331,902 in 1975 to \$113,515 in 1978. Thus in October 1979 Sanitarium Health Foods of Australia was asked to take over the management of ailing Granose. Loma Linda Foods in the USA has also had problems. Though 1978 sales were \$11.7 million, they lost \$390,000. In April 1980 management and control of LLF was transferred to Sanitarium of Australia. In about 1978 Granix in Argentina and Superbom in Brazil entered the vegetable protein market with TVP and are currently producing 700 tons/year. In 1976 a “World Foods Service Expansion Program” was started to finance expansion of food production into countries having serious nutritional problems. Low-cost extrusion cookers making TVP were a key part of this program. Address: Rockville, Maryland.

881. *Soyfoods*. 1981. Giant tofu market: School lunches. 1(4):8-9. Winter.

• **Summary:** The federally-subsidized school lunch program serves an estimated 3,800 million meals annually. Thelma Dalman (director of Food Service for Santa Cruz city schools, a district that has experimented with tofu-based vegetarian meals for three years) and Richard Leviton (director of Soycrafters Association) went to Washington, DC, on 13-18 September 1980 to investigate the possibilities of having tofu “legalized” for school lunches. “The result was not only favorable but startling in significance.” Dalman and Leviton met with numerous senators and representatives who were sympathetic to enlist their support. “Aides to these congressmen each expressed lively and informed interest in tofu and a willingness of their office to cooperate. Dalman and Leviton presented a two-hour program on tofu and public schools to 15 members of the Nutrition and Technical Services Division (NTSD), a regulation advisory group in the Food and Nutrition Service. A request was made for the USDA to grant interim permission to use tofu at 30% substitution for the meat requirement (2 oz. lean cooked

meat) in the school meal pattern. For a lunch to meet the ‘reimbursable meal pattern’ its components must conform to a strict nutritional code, essentially based on meat protein. Textured Vegetable Protein (TVP) has been granted use in meals at 30% replacement... So the strategy was to bring in tofu on the shirttails of TVP. As it developed, we fared better than we had expected; the USDA, in fact, let us know they favored a higher equivalency rating for tofu than TVP and chose to regard tofu as a whole food rather than like TVP [which is considered a fortified, highly processed food].

“Henry Rodriguez, director of NTSD, stated: (1) Tofu may now be used as part of the reimbursable meal pattern based on section 210.H of the *National School Lunch Program*... (2) To obtain approval, individual school boards must apply to their Department of Education, Child and Nutrition Division, to request them to apply to USDA-FNS for permission to use tofu based on section 210.10.H. (3) Meanwhile FNS and SANA will draft a USDA *Specification* for tofu which will legalize and standardize tofu’s use in school meals.”

Richard Leviton made a second visit to Washington, DC on 24-27 Nov. 1980 to meet with the USDA again as well as with a handful of congressmen and the FDA.

882. *Food Engineering*. 1981. Peanut butter base is 80% extended. 53(3):108. March.

• **Summary:** Ottens Flavors (in Philadelphia, Pennsylvania) developed this formula which contains 20% natural peanut butter, 40% partially hydrogenated vegetable oil, 22% pulverized soybean (Textured Vegetable Protein #624 made by ADM), 8.25% glycerine, 8.00% brown sugar, and 1.25% salt (microfine). Ottens, known for its flavors, developed the prototype to demonstrate a tangible application of its flavor that simulates natural peanut butter. A taste panel found “no appreciable difference” between the formulation and peanut butter.

883. Langsdorf, A.J. 1981. Economics of soya protein products and outlook. *J. of the American Oil Chemists’ Society* 58(3):338-40. March.

• **Summary:** Table I shows wholesale prices of various soy protein products in the United States (as of late Oct. 1980, F.O.B. production point, varies with size, shape, color, and flavors). Soy flour 18-20 cents/lb. Soy grits 18-20 cents/lb. Textured soy protein (unflavored) 32-36 cents/lb. Soy protein concentrate 42-46 cents/lb. Soy protein isolate 92-102 cents/lb.

Table III shows the relative costs of protein from selected food sources (as of June 1980). For each source it gives the percentage of protein in the food, the retail price of the food (\$/lb), and the cost of the protein (\$/lb). The most expensive source of protein is Beef (round); the protein costs \$12.40 per pound, compared with \$6.77 for eggs (medium), \$3.25 for chicken, \$1.03 for soy protein concentrate, and

\$1.00 for textured vegetable protein [textured soy flour].  
Address: Archer Daniels Midland Co., P.O. Box 1470,  
Decatur, Illinois.

884. Sleeter, R.T. 1981. Effects of processing quality of soybean oil. *J. of the American Oil Chemists' Society* 58(3):239-46. March. [49 ref]

• **Summary:** Tables: (1) Relationship between amount of soybean damage vs. free fatty acid composition. (2) Fatty acid distribution as a function of triglyceride position. (3) Relationship of free fatty acid content as a function of processing step. (4) Mono- and diglyceride content of soybean oil vs. degree of processing. (5) Phosphorus content of soybean oil as a function of processing step.

(6) Relationship of phosphorus, magnesium and calcium content of soybean oils degummed at various pH values. (7) Tocopherol content at various stages of processing. (8) Effect of processing step on sterol and squalene content. (9) Effect of degumming on sterol content. (10) Summary of the effect of processing steps on the chlorophyll content.

(11) Effect of pH and amount of bleaching earths on color factors. (12) Effect of processing step on nitrogen content. (13) Amount of trace minerals which lower the keeping time of lard by one-half at 208°F. (14) Amount of some volatile oxidation products in relation to metal content. (15) Correlation of trace copper and iron as a function of processing step.

(16) Toxic trace elements as a function of processing step. (17) Peroxide value variation resulting from increased bleaching time. (18) Fatty acid content of hydrogenated soybean oils. (19) Comparison of positional isomerism of two hydrogenated soybean oils (nickel catalyzed). (20) Fatty acid composition of nickel-catalyzed, hydrogenated soybean oil.

(21) Effect of operation during hydrogenation on the resultant oil. (22) Effects of processing step on residual pesticide level. The pesticides are: Aldrin, Dieldrin, beta-BHC, ppi DDE, pp DDT, PCB. (23) Effect of processing step on added antioxidants. Address: Archer Daniels Midland, Decatur, Illinois.

885. Strayer, George M. 1981. Re: History of soybeans in America and of the American Soybean Assoc. Letter to William Shurtleff at Soyfoods Center, April 8—in reply to inquiry. 2 p. Typed, on letterhead.

• **Summary:** “In the late 1930’s several railroads sponsored not only exhibit cars but soybean trains. For instance, the Illinois Central Railroad sponsored a soybean train which would visit towns along the Illinois Central line, inviting people to come into the train, see the exhibits, see motion pictures and hear speeches. The Chicago Great Western Railroad and the Milwaukee Railroad also sponsored soybean trains. Normally there were two or three or four exhibit cars plus a car used for showing motion pictures and

a car where the speeches were delivered and the discussions held. These soybean trains were quite a factor in popularizing soybeans in those early days. The railroads, of course, were looking toward the ultimate revenue they might get from hauling the soybeans to the processing plants and hauling the oil and meal to the ultimate users, as well as viewing it from the standpoint of the general welfare of the communities involved and therefore the welfare of the railroads.”

Glen McIlroy, a farm manager in Irwin, Ohio, was one of the strong characters in the early days of Strayer’s association with the American Soybean Association (ASA).

“During the war years soy flour was manufactured in rather large quantities for the Army. In ASA we had been able to obtain a copy of a German army Soya cookbook, distributed to all chefs and cooks in the German army. It gave some very extensive directions on the use of soy flour in increasing protein content of many of the dishes served to the German army. This intense interest in soy flour was reflected in this country, and several companies started manufacturing, packaging and merchandising soy flour in consumer sized packages. The Honeymead Company, the Staley Company, Archer Daniels Midland all manufactured and merchandised soy flour in consumer sized packages during and immediately following the war years. It was this interest in possible use and promotion of soy flour which was responsible for the organization of the Soy Flour Association in 1939.

“Shortly after World War II animal proteins became much more plentiful and much cheaper in price, and consumer size packaging of soy flour largely passed out of the picture and has never regained its prominence, except through the health food stores.

“Jack Cartter and I were the two members of ECA Technical Assistance Team No. 1. This was the first technical assistance team sent outside the United States under the Marshall Plan. Our mission was to study the possibilities of soybean production in the northern European countries, and particularly the possible expanded use of soybeans as a source of protein in human nutrition. Prior to our going over in September of 1949 about 30 varieties of soybeans produced in the United States had been sent to a number of points in Europe, had been planted there, and we visited those trial plots. We also visited oil milling plants which were equipped to handle soybeans, and we visited with people in France, Holland, Germany and Sweden who were doing breeding work on soybeans. We wrote a report submitted to the Department of State, under whom ECA was administered, summarizing our findings. Basically, it was our belief that soybean production could never be a major factor in the northern European countries because of the climatic conditions there. However, we did return firmly convinced that there was a huge market for soy oil and for soy protein in many of those countries. Those findings have been brought out by the tremendous increase in sales of soybeans,

soybean oil and soybean meal into the European countries.

“After the work which I did in Japan in 1955 I was asked by USDA to go to Europe to do a similar study on market potentials. I visited nine countries of northern Europe on this study, and came back convinced that some countries offered markets for U.S. soybeans, others offered markets for U.S. soybean meal and protein, and still others offered markets for U.S. soybean oil. I came back convinced that the job was too big for the American Soybean Association as it was then constituted, so I arranged for a meeting of the Board of Directors of the American Soybean Association with the Board of Directors of the National Soybean Processors Association. Out of that meeting came the Soybean Council of America, which carried on the work in the European countries starting in 1957. In countries such as Italy and Spain, where olive oil dominated the oil markets, we set up programs to introduce high quality soybean oil. In Germany we set up a program designed to introduce soybean oil into margarine production. We also set up programs in Germany, Italy, France and the Netherlands to promote the use of soybean meal in livestock feeding. Working with the Foreign Agricultural Service, the promotional work was carried out in the European countries by the Soybean Council, of which Howard Roach was president and I served as executive director. We recognized that through a long period of time there was little likelihood of an organization made up of soybean processors and soybean producers continuing its work, but we were able to convince the processors that they, too, had a stake in the overseas markets and for a period of years they did participate extensively. However, we could see the handwriting on the wall and it was for this reason that in the early 1960’s we started the campaign to pass legislation in the various states which would allow the soybean check-off. When funds from growers became available in some quantity the Soybean Council folded and was replaced.” Address: President, Agricultural Exports, Inc., P.O. Box 266, Hudson, Iowa 50643. Phone: 319-988-4593.

886. Huang, Timothy. 1981. Early work with soyfoods distribution and the Yellow Bean deli in Detroit (Interview). Conducted by William Shurtleff of Soyfoods Center, April 9. 1 p. transcript.

• **Summary:** Timothy started a soyfoods marketing and distribution company called Yellow Bean Trading Co. in Detroit in about Sept. 1978. His first products were Soy Plant products from Ann Arbor, sprouts, TVP and soy flour (from Farm Foods), and soyfoods books. In March 1979 he and Carol Ann, his wife, started a soyfoods deli named Yellow Bean Vegetarian Foods at 15309 Mack Ave. in Detroit. They made 3 types of tofu pies (carob, cocoa, peanut butter) and a bulk tofu salad [like an eggless egg salad]. He was selling these 2 products to 25 accounts by summer 1979. Address: Detroit, Michigan.

887. Worthy, Ford S. 1981. The 500: The *Fortune* directory of the largest industrial corporations. *Fortune* 103(9):322-47. May 4.

• **Summary:** Companies are ranked by sales. Soy-related companies include: Ralston Purina (St. Louis, Missouri) is No. 72 with \$4,886 million in sales. Land O’Lakes (Minneapolis, Minnesota) is No. 109 with \$3,304 million. Archer-Daniels-Midland (Decatur, Illinois) is No. 139 with \$2,802 million. Central Soya (Fort Wayne, Indiana) is No. 207 with \$1,744 million. And A.E. Staley Mfg Co. (Decatur, Illinois) is No. 218 with \$1,656 million in sales.

Note: Cargill is not listed because it is privately owned. In 1981 Cargill’s sales were about \$12,000 million a year. Exxon was No. 1 on the Fortune 500 with \$103,142 million in sales. Mobil was No. 2 and General Motors was No. 3.

888. Shurtleff, William. 1981. Analysis of the U.S. and Western world tofu industry. Lafayette, California: Soyfoods Center. 1 p. May 17. Unpublished typescript.

• **Summary:** In this 1-page summary, prepared for Kikkoman Corporation, a table gives the following statistics for the years 1979, 1980, and 1981: Number of tofu manufacturers in the USA (120, 145, 159), Canada (7, 14, 19), other non-Asia, total. Raw soybeans used (tons/year) in USA. Percentage of total raw soybeans used for all soyfoods in the USA. Yield (pounds of tofu made from 1 pound of soybeans) (2.5). Tons of tofu produced in USA (16,250, 20,500, 26,000). Wholesale value (million dollars) (12.0, 17.5, 25.0). Retail value (million dollars) (23.2, 33.9, 48.5). Number of production employees (602, 759, 965).

Notes: The largest food uses of soybeans in the USA in 1981 are: Soy flour and grits (defatted) 52.6% (of all soybeans used), textured soy flour (incl. TVP) 19.7%, soy protein isolates 16.9%, soy protein concentrates 7.7%, soy sauce 1.2%, tofu 0.8%, soymilk and dairylike products 0.6%.

Estimates of regional markets for tofu: Largest market—California. Second largest—East Coast from Massachusetts to Maryland. Third largest—Pacific Northwest. Fourth largest—Northern Midwest (Wisconsin, Michigan, Illinois, Minnesota, Indiana).

Addresses of tofu manufacturers is included. Address: The Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

889. ADM Foods. 1981. Wouldn’t you know that when ADM put their protein knowledge to isolates—they’d be the best (Ad). *Food Processing (Chicago)* 42(5):35-38. May.

• **Summary:** A four-page color ad. Photos show: (1) A fit man and woman riding a tandem bicycle. (2-3) The woman looking at a variety of food products, each of which contains Ardex isolates made by ADM. A sign on the wall reads “Protein knowledge sold here.” (4) The couple riding away on their bike, with a wicker shopping basket on the back rack

filled with foods.

ADM makes Ardex D, Ardex DHV, Ardex F, and Ardex SP-6—each with unique characteristics for different food applications. Address: Div. of Archer Daniels Midland Co., P.O. Box 1470, Decatur, Illinois 62525. Phone: 1-800-637-5850.

890. Andres, Cal. 1981. The versatile soybean: Supplies two necessary food components—protein and fats—plus wide range of functional attributes. *Food Processing (Chicago)* 42(5):142-44, 146, 150, 152, 154, 156, 158, 163. May.

• **Summary:** This article is in the section titled “Ingredients handbook.” Contents: Introduction. Protein: Soy flour and grits (50-52% protein), soy protein concentrate (70% protein), and isolated soy protein (90% protein or more), extremely versatile, extruded products, spun soy protein made from isolated soy protein, functional benefits of using soy protein, analogs—products resembling conventional foods in appearance, color, flavor and texture (such as breakfast strips {bacon}, whipped toppings, and imitation cheese), soy protein makes excellent use of farmlands potential to produce protein, Gallup poll shows 71% of Americans view soy protein favorably, different types of soy flour.

Soy protein suppliers (tells what kinds of products are sold by each company): ADM Foods (Archer Daniels Midland), Cargill Protein Products Dept., Central Soya Co., Dairyland Products, Dawson Food Ingredients (Subsidiary of Dawson Mills), Farmland Agriservices, Inc. (formerly known as Far-Mar-Co., Inc.), Food Ingredients, Inc. (the U.S. “sales representative of a full-fat soy-protein flour produced in Germany), Griffith Laboratories, Kraft Foods (isolates), Lauhoff Grain Co. (soy flours and textured soy flour), Ralston Purina (regular isolates, “blends of isolated soy proteins plus other ingredients such as dairy products.” “Structured isolated soy proteins are available as a fiber and as a granular product. The fiber is the frozen, hydrated form and is retort-stable with no degradation of fiber. Texture is similar to that of muscle fiber”), A.E. Staley Manufacturing Co. (The Protein People; soy flours and textured soy flours, soy protein concentrates, whipping proteins, hydrolyzed vegetable proteins), Food Protein Council (Washington, DC; has two brochures).

Soybean oil. Suppliers: Capital City Products Co. (Div. of Stokley Van Camp, Inc.), Durkee Foods (Div. of SCM Corp.), Humco Products (Div. of Kraft, Inc.), A.E. Staley.

Lecithin. Lecithin suppliers: Ross and Rowe, Inc. (Div. of ADM; regular and granulated lecithin), Central Soya, A.E. Staley. On the last page is given the full name and address of each supplier mentioned in the article.

Photos in the article show the cover of the following brochures, each available from one supplier: (1) ADM Foods: “Look where soybeans go.” (2) Central Soya Co.: “Soy flours & soy grits.” (3) Food Protein Council: “Vegetable protein: Products and the future.” (4) Kraft: “The

new soy on the block.” (5) Ralston Purina: “Purina proteins: Product information.” (6) A.E. Staley: “The protein people.” (7) Food Protein Council: “Soy protein: Improving our food system.” (8) ADM: “Food oils.” (9) Capital City Products: “A complete line...” (9) Staley: “Refined oils.” (10) Ross & Rowe, Inc.: “Soybean lecithin: Yelkin T,...” (11) Central Soya Co.: “Lecithin from Central Soya naturally.” (12) Ralston Purina Co.: “Nutritional aspects of Ralston Purina isolated soy protein.” Address: Senior Associate Editor.

891. **Product Name:** Full-Fat NutriBits (Full-fat Textured Soy Flour).

**Manufacturer’s Name:** Archer Daniels Midland Co.

**Manufacturer’s Address:** Decatur, Illinois.

**Date of Introduction:** 1981 May.

**New Product—Documentation:** Processed Prepared Foods. 1981. May. p. 107. “Soy extended spread in 2 forms.” These full-fat soy flour particles, probably extruded soy flour, can be used as a peanut butter extender.

892. *Food Engineering*. 1981. Soy’s answer to peanut shortage. 53(5):128-29. May.

• **Summary:** A peanut spread (not peanut butter) has been developed by ADM. It contains specially processed Nutrisoy bits, and comes in two types—smooth, containing 40% peanuts, and a crunch type containing 45% peanuts. “To the non-expert, the peanut spread developed by ADM is virtually the same as peanut butter...”

893. *Processed Prepared Foods*. 1981. Soy extended peanut spread in two forms [with NutriBits]. May. p. 107.

• **Summary:** “NutriBits are a full fat soy particle that can be roasted with peanuts or added prior to grinding.” Made by ADM, they are probably nuggets of extruded full-fat soy flour. They can replace 55-60% of the peanuts in peanut butter. “ADM’s smooth style peanut spread contains 40% peanuts, while crunchy style contains 45% peanuts. The peanut spreads cost about \$0.45 less per lb than peanut butter, based on the market price of peanuts in late March 1981.”

“Government regulations require that peanut spreads be nutritionally equivalent to, or better than, peanut butter.” Address: Chicago.

894. ADM—Archer Daniels Midland Co. 1981. We unlocked a 5,000 year old secret of the soybean (Ad). *Soya Bluebook*. p. 31. June.

• **Summary:** In the top half of this full-page ad, an illustration shows a curved row of soybeans, each one larger as it approaches the foreground. The nearest and largest one is cut vertically into halves, which are joined (as with an invisible hinge) at the back. On the right half is a raised die of the letters TVP; on the left half is the sunken impression made by that die. The tag-line at the bottom of the page:

“Using America’s abundance to solve the world’s needs.”

The text: “5,000 years. That’s approximately how long the soybean has been cultivated by man. And all that time the soybean possessed the capability to provide life giving protein to people all over the world.

“But the vast potential of the soybean’s protein contribution was to remain largely untapped [outside of East Asia], until ADM scientists developed and perfected TVP Brand textured vegetable protein. TVP put the soybean on family tables everywhere in America and around the world.

“And our research and processing developments have brought about the most extensive variety of soybean oil, lecithin, soybean meal, and upgraded soy protein products available today.”

Note 1. In the *Soya Bluebook*, in the section on “Soyfood Manufacturers,” under “Soy flour, protein concentrates & isolates” the entry for ADM (p. 61) shows that the company makes: “Nutrisoy edible soy flours and grits, ADM soybean brew flakes, and soy protein concentrates.” They do *not* yet make or sell soy protein isolates.

Note 2. This exact same ad appears in the *Soya Bluebook* in 1982 (p. 4). Address: World Headquarters: Decatur, Illinois 62525. Phone: 217-424-5200.

895. Cadwallader, Sharon. 1981. Naturally. *Washington Post*. July 9. p. E14.

• **Summary:** “By now, most North Americans have some notion of what it means to be a vegetarian, but I think a remainder column is in order now and then.” Gives a brief history of vegetarianism starting with the Bible (Genesis 1:29), and the Greeks, Romans, followed by some of the major reasons that people become vegetarians, and her favorite books on the subject—*Diet for a Small Planet*, by Frances Moore Lappe, and *Laurel’s Kitchen*, by Laurel Robertson and Carol Flinders.

“I think that the quality of our future depends on rethinking our food habits. Right now there is a great deal of research going on in the field of soy foods.” Contains a recipe for Lasagna using “1½ cups textured vegetable protein (TVP), available in health food stores.”

896. Hooten, Dan. 1981. Dawson Mills’ protein analog plant. Protein prices. Isolate markets. Functional properties desired by industry (Interview). *SoyaScan Notes*. Aug. 17. Conducted by Walter J. Wolf of NRRC, Peoria, Illinois.

• **Summary:** Dawson Mills invested \$11 million in their protein analog plant. It was intended to have a capacity of 9.5 million lb/year but was actually capable of producing only about 400,000 lb/month or 4.8 million lb/year.

Soy protein prices (per lb): Flours and grits: \$0.14. Concentrates: \$0.31-33. Isolates: \$1.02—from Ralston Purina and Grain Processing Corp. \$0.90—from ADM. Note that ADM is working off inventory that they have accumulated

since start-up. A number of Central Soya’s former isolate customers have gone to other suppliers.

Isolate markets: (1) Health foods. (2) Infant formulas—Some doctors go to soy formulas directly to avoid potential allergy problems with cow’s milk. (3) Milk products. (4) Meat emulsions—In Europe fat, water and isolate are emulsified and then frozen. This emulsion is later mixed with meat in the preparation of products that are “stuffed into casings or cans.”

Japan is still a net importer (2-3 million lb/yr) of isolates.

Functional properties desired by industry: (1) Film forming ability—with strength. (2) Casein-like properties (the imitation cheese market is now about 150 million lb—uses 40 million lb of casein). Casein sells for \$1.35-\$1.40/lb. Address: Dawson Food Ingredients.

897. Lenetsky, Mark. 1981. Short course on soyfoods: What they are, how they are used. *Health Foods Business*. Aug. p. 46, 49-50, 52, 53. [2 ref]

• **Summary:** Contents: Introduction. Tofu or “soy cheese.” The many uses of tofu. Makings of miso. Tamari—by any name. Tempting tempeh. ‘High tech’ approach (TVP). Its a joy to cook with soy: Selected recipes from suppliers. Address: Nutritional consultant, Applegate Natural Foods, Tigard, Oregon.

898. Wallace, Dick. 1981. Re: History of ADM. Questions answered on Soyfoods Center letterhead (dated 11 Sept. 1981) and returned to SC on 3 Dec. 1981. 2 p.

• **Summary:** The largest ADM crushing plant at Decatur has a capacity of 4,000 tons of soybeans a day. ADM Foods was formed in 1980. British Arkady first produced TVP in 1965, and was acquired by ADM in 1974.

Dates when ADM first started producing certain soy products: Edible soy oils, 1930; Food grade lecithin, June 1934; Full-fat soy flour, 1935 (still producing); Cereal soy blends such as CSM, WSB, 1965-66 (CSM production has been discontinued); Soy protein concentrate, 1976; Textured soy concentrate, 1977; Bacon-flavored TVP, 1970.

Midland Linseed Oil Co. was incorporated in 1902, then reincorporated as Midland Linseed Products Co. in 1912. William O. Goodrich Co., located in Milwaukee, Wisconsin, was acquired by ADM in 1928. Dr. J. Hayward began employment with ADM in Sept. 1935 and worked as Director of Nutritional Research until 1956, when the position of Director of Nutrition was created for him. He worked in this position until the late 1950s. In the early 1960s he worked as a consultant for the company. On 1 July 1957 ADM acquired a soy protein isolate plant from The Drackett Co.

Note: That plant, located in Evendale [near Cincinnati] Ohio, made only industrial (not edible) soy protein isolates. Address: Decatur, Illinois.

899. Dunn, John R. 1981. U.S. cooperative soybean processors (Interview). Conducted by William Shurtleff of Soyfoods Center, Sept. 15. 1 p. typescript. [1 ref]

• **Summary:** It is now generally agreed that ADM has passed Cargill as America's leading soybean crusher—but both companies have about the same crushing capacity. According to his best information, America's top 12 soybean crushers are (as of Oct. 1979): 1. ADM. 2. Cargill. 3. A.E. Staley. 4. Central Soya. 5. Bunge. 6. Ralston Purina. 7. Gold Kist. 8. Farmland Industries. 9. Continental Grain. 10. Riceland Foods. 11. Quincy Soybean. 12. Land O'Lakes. Other leading cooperative crushers, in descending order of size, are Honeymead Products, Agri Industries, Boone Valley Processing & Marketing Assoc., and Missouri Farmers Association. All of these companies use solvent extractors.

The top 4 firms own and operate 54.5% of the processing capacity. The next 4 control 20.6%, for an 8-firm total of 75.1%. The next 4 control 11.2%, for a 12 firm total of 86.3%. Bunge, which is based in Argentina, has moved up on the list through some recent acquisitions, including a plant in Mississippi in July from Gold Kist.

Concerning cooperatives, each regional co-op is taken as a unit. They operate completely independently of each other. So it is not accurate to think of the co-ops as a whole—although they do have some areas of cooperation with one another, e.g. export sales efforts and domestic processed product sales. They operate independently on procurement and processing. The total amount of soybeans crushed by the cooperatives is probably less than that crushed by ADM or Cargill. Address: USDA Agricultural Cooperative Service (ACS), Washington, DC 20250. Phone: 202-475-4929.

900. Bunge Corporation. 1981. Re: Confirmation that Jose Zilio and Henri deKerchove will visit the Northern Regional Research Center on Oct. 21. Letter to Mr. Joseph J. Rackis, Northern Regional Research Center, 1815 N. University Avenue, Peoria, Illinois 61604, Sept. 24. 1 p. Typed, without signature on letterhead.

• **Summary:** These two gentlemen, who are with Bunge's client Samrig in Porto Alegre, Brazil, are very involved with soya processing, production of isolated soy protein, TVP, etc. "The purpose of their visit is to discuss protein technology and marketing of products they manufacture." Address: One Chase Manhattan Plaza, New York, New York 10005. Phone: Cable Address: BUNGSA.

901. Shurtleff, William; Aoyagi, Akiko. 1981. History of Archer Daniels Midland Company (1929+). Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 9 p. Sept. Unpublished typescript. Available online at [www.soyinfocenter.com](http://www.soyinfocenter.com).

• **Summary:** [www.soyinfocenter.com/HSS/archer\\_daniels\\_midland.php](http://www.soyinfocenter.com/HSS/archer_daniels_midland.php)

A comprehensive history of the subject. Address: Lafayette, California. Phone: 415-283-2991.

902. Soyfoods Center; Soycrafters Assoc. of North America. 1981. Soyfoods production in America and the West (Report). Lafayette, California. 1 p. Sept.

• **Summary:** See next page. This full-page table contains statistics for the following soyfoods and soy ingredients: Low technology, traditional. Tofu & tofu products. Tempeh. Soymilk & soymilk products. Soy sauce, shoyu & tamari. Soynuts & soynut butter. Miso. Soy sprouts. Whole dry or mature soybeans. Whole soy flour & grits, full fat. Fermented soymilk. Fermented tofu. Fresh green soybeans. Roasted soy flour & soy coffee. Natto, thua nao & kinema. Yuba. Soy nuggets (Hamanatto, tou-ch'ih [Fermented black soybeans]). Soy delis and restaurants. Secondary soyfoods prod-distributors. Soyfoods marketer-distributors. Subtotal.

High technology, modern [soy ingredients]: Soy flour & grits, defatted. TSP / TVP (extruded soy flour). Soy protein concentrates. Soy protein isolates. Meat analogs (secondary products), Soy oil.

Subtotal: High tech. Total: Low tech & high tech.

This table has 12 columns with information about each soyfood. (1) Type of soyfood. (2-5) Number of manufacturers: USA, Canada, Other West, Total. (6-7) Raw soybeans used (tons / year): USA, % of total used. (8) Yield (lbs of food from 1 lb of soybeans). USA only—(9) Tons produced. (10) Wholesale value (million \$). (11) Retail value (million \$). (12) Number of employees.

Note 1. Total retail value in USA is \$998 million.

Note 2. The statistics for soy oil are incomplete. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

903. National Soybean Processors Association. 1981. Yearbook and trading rules 1981-1982. Washington, DC: National Soybean Processors Association. ii + 106 + A1-12. 23 cm. Spiral bound.

• **Summary:** On the cover (but not the title page) is written: Effective October 1, 1981. Issued annually to all members of the association. Contents: Constitution and by-laws. Officers and directors. Executive office. Members. Associate members. Standing committees. Trading rules on soybean meal (first adopted 18 Oct. 1933). Sales contract. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}), sampling of soybean meal {at origin} (automatic mechanic sampler, pneumatic probe sampler, probe sampler), sampling of soybean meal (at barge loading transfer facilities), official weighmaster application, semi-annual scale report, manufacturers' certification—Installation of automatic sampler (at barge loading transfer facility), semi-automatic sampler certification (at barge loading transfer facility), official referee chemists (meal). Soybean

Copyright: The Soyfoods Center & Soycrafters Assoc of No. America

Soyfoods Production in America and the West

Year 1981 Month September

Type of Soyfood	Number of Manufacturers				Raw Soybeans Used (Tons/Year) ..... USA Only .....							
	USA	Canada	Other West	Total	USA	% of Total	Yield	Tons Produced	Whsl. Value \$ Million	Retail Value \$ Million	Number Employee	
LOW TECHNOLOGY, TRADITIONAL												
A	Tofu & Tofu Products	154	19	37	210	9,079	0.8	2.5	22,700	25.0	50.4	1258
B	Tempeh	32	2	8	42	282		1.75	494	1.5	1.78	50
C	Soymilk & Soymilk Products	14	1	47(1)	62	8,100	0.6	18.0	148,000	84.0	118.0	140
D	Soy Sauce, Shoyu, and Tamari	15	0	2	17	15,232	1.2	3.6	54,837	145.0	203.0	120
E	Soynuts & Soy nut Butter	12	0	3	15	3,600	0.2	0.8	2,750	3.3	4.6	48
F	Miso	10	2	4	16	454		4.4	2,000	3.4	4.8	30
G	Soy Sprouts	5	1	1	7	70		9.0	360	0.2	0.25	15
H	Whole Dry or Mature Soybeans	6	0	1	7	100		1.0	100	0.04	0.06	12
I	Whole Soy Flour & Grits, full fat	4	0	18	22	10		0.8	8	—	—	8
J	Fermented Soymilk	1	0	2(1)	3	1		18.0	9	—	—	1
K	Fermented Tofu	1	0	0	0	1		2.0	1	—	—	2
L	Fresh Green Soybeans	0	0	0	0	0		1.0	0	—	—	0
M	Roasted Soy Flour & Soy Coffee	1	1	0	2	1		0.8	1	—	—	0
N	Natto, Thua Nao, and Kenima	2	0	0	2	30		2.0	30	0.02	0.03	6
P	Yuba	1	0	0	1	30		0.5	15	0.02	0.03	4
Q	Soy Nuggets (Hamanatto, Tou-ch'ih)	0	0	0	0	0		2.0	0	0	0	0
R	Soy Delis and Restaurants	11	2	0	13						1.0	52
S	Secondary Soyfoods Prod-Distrib	3	0	0	3						0.3	12
T	Soyfoods Marketer-Distributors	12	0	1	13						8.0	36
Subtotal: Producers/ +Secondary RST		284	25	124	435	36,990	3.0		23,130	262.5	392.3	1794
HIGH TECHNOLOGY, MODERN												
U1	Soy Flour & Grits, defatted	12				666,700	52.6	0.6	400,000	136.0	190.4	120
U2	TSP/TVP (extruded soy flour)	2	2	23	55	250,000	19.7	0.6	200,000	128.0	179.2	120
U3	Soy Protein Concentrates	3				97,800	7.7	0.45	45,000	40.5	56.7	15
U4	Soy Protein Isolates	3				214,285	16.9	0.21	45,000	90.0	126.0	15
V	Meat Analogs (secondary products)	6	0	2	8				20,000	32.0	55.0	60
W	Soy Oil	(53)	(2)	(28)	(83)			0.15				
Subtotal: High Tech		36	2	25	63	1,228,785	97.0		710,000	426.5	615.6	330
Total: Low & High Tech		320	28	149	498	1,265,775	100.0		733,130	689.0	998.0	2124
(1) Includes Asia									941,305			

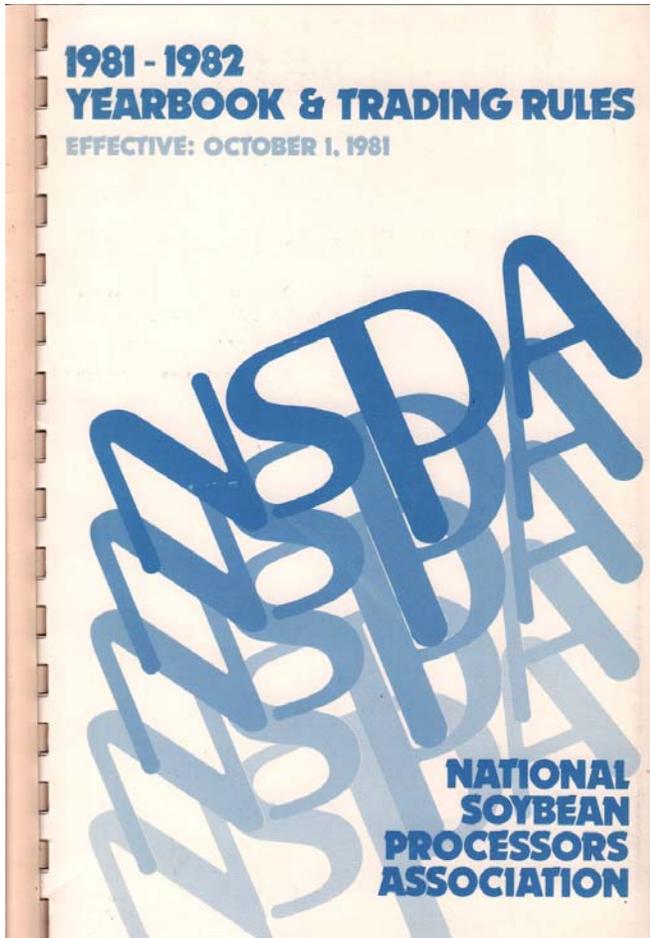
meal export trading rules: Minimum blending procedures for export meal blended at ports, sampling of soybean meal (at vessel loading facilities), manufacturers certification—Installation of automatic sampler (at vessel loading facility), semi-automatic sampler certification (at vessel loading facility). Trading rules on soybean oil (first adopted 21 May 1930). Sales contract. Definitions of grade and quality of export oils. Soybean lecithin specifications. Appendix to trading rules on soybean oil: Inspection, grading soybean oil for color (NSPA tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses; soap stock, acidulated soap stock and tank bottoms (only method numbers listed), official weighmaster application, semi-annual scale report, official referee chemists (oil). Soybean oil export trading rules. Uniform soybean oil export contract. Foreign trade definitions.

The page titled National Soybean Processors Association (p. ii) states: "During the past crop year about 1,000,000,000 bushels of soybeans moved through processing plants of

NSPA's 24 member firms. Approximately 50 percent of America's 1.8 billion-bushel soybean crop was bought and processed by NSPA members. Exporters account for another 36 percent of the crop, and the remainder [14%] is returned to farms for seed, feed, and residuals." Also discusses industry programs, soybean research, and international market development."

The section on officers, executive committee, and board of directors (p. 7-8) gives the name, company affiliation, and phone number of each person. Officers—Chairman: Gaylord O Coan, Gold Kist, Inc. Vice Chairman: Edward J. Cordes, Ralston Purina Co., President: Sheldon J. Hauck. Secretary: Donald H. Levinworth, Cargill, Inc. Treasurer: Lowell K. Rasmussen, Honeymead Products Co. Immediate past chairman: C. Lockwood Marine, Central Soya Co., Inc.

Executive committee: Richard G. Rypkema ('83), Agri Industries. Charles Bayless ('83), Archer Daniels Midland Co. David C. Thompson ('82), Bunge Corporation. Harold H. Leavenworth, Cargill, Inc. C. Lockwood Marine, Central Soya Co., Inc. Gaylord O. Coan, Gold Kist, Inc. Lowell K.



Rasmussen, Honeymead Products Co. Kermit F. Head ('82), Missouri Farmers Assn.–Grain Div. Sewell L. Spedden ('82), Perdue, Incorporated. Edward J. Cordes, Ralston Purina Co.

Board of directors (alphabetically by company; each member company has one representative on the board): Richard G. Rypkema, Agri Industries. Thomas H. Wolfe, Anderson, Clayton & Co. Charles Bayless, Archer Daniels Midland Co. Keith Voigt, Boone Valley Coop. Proc. Assn. David C. Thompson, Bunge Corporation. Harold H. Leavenworth, Cargill, Inc. C. Lockwood Marine, Central Soya Co., Inc. Ronald L. Anderson, Continental Grain Co. Donald M. Chartier, Farmland Industries, Inc. Gaylord O. Coan, Gold Kist, Inc. Lowell K. Rasmussen, Honeymead Products Co. Kenneth J. McQueen, Land O'Lakes, Inc. Kermit F. Head, Missouri Farmers Assn.–Grain Div. Robert E. Hicks, Owensboro Grain Co., Inc. Sewell L. Spedden, Perdue, Incorporated. Wilton L. Adcock, Planters Oil Mill, Inc. Thomas L. Shade, Quincy Soybean Co. Edward J. Cordes, Ralston Purina Co. William P. Hudson, Riceland Foods, Inc. J.D. Morton, Sherman Oil Mill. Styles M. Harper, Southern Soya Corp. Kenneth A. Robinson, A.E. Staley Mfg. Corp. Preston C. Townsend, Townsends, Inc. Tyler Terrett, West Tennessee Soya Mill, Inc.

Executive office, Washington, DC: Executive Director,

Sheldon J. Hauck. Director, Public Affairs: Murray C. Keene. Director, Regulatory Affairs: Rhond R. Roth. Administrative Asst.: Alicia B. Rickman. National Soybean Crop Improvement Council: Robert W. Judd, Managing Director. General counsel: Elroy H. Wolff, Sidley & Austin. Special counsel: Julian B. Heron, Jr., Heron, Haggart, Ford, Burchette & Ruckert.

Members (listed alphabetically by company; within each company, first the name of the official Association representative {who is on the Board}, followed by the other personal members listed alphabetically by surname. For example, Archer Daniels Midland Co., the company with the most personal members, has 23. After the name of each personal member is given with his address and phone number. In the listing below, the number of personal members is shown in parentheses after the name of each company, followed by city and state of the various locations): Agri Industries–Soybean processing division (2); Des Moines, Iowa. Anderson, Clayton & Co. (4); Phoenix, Arizona, Jackson, Mississippi, Houston, Texas. Archer Daniels Midland Co. (23); Archer Daniels Midland Co. (26); Little Rock, Arkansas; Augusta, Georgia; Decatur, Illinois; Galesburg, Illinois; Granite City, Illinois; Fredonia, Kansas; Mankato, Minnesota; Red Wing, Minnesota; Kansas City, Missouri; Clarksdale, Mississippi; Fremont, Nebraska; Lincoln, Nebraska; Kershaw, South Carolina; Memphis, Tennessee. Boone Valley Coop. Processing Assn. (3); Eagle Grove, Iowa. Bunge Corporation (9); Cairo, Illinois; Danville, Illinois; Logansport, Indiana; Emporia, Kansas; Marks, Mississippi; New York City, New York. Cargill, Inc. (20); Osceola, Arkansas; Gainesville, Georgia; Cedar Rapids, Iowa; Des Moines, Iowa; Sioux City, Iowa; Washington, Iowa; Chicago, Illinois; Wichita, Kansas; Burnsville, Minnesota; Minneapolis, Minnesota; Fayetteville, North Carolina; Sidney, Ohio; Memphis, Tennessee; Chesapeake, Virginia. Central Soya Co., Inc. (11); Gibson City, Illinois; Decatur, Indiana; Fort Wayne, Indiana; Indianapolis, Indiana; Belmond, Iowa; Bellevue, Ohio; Marion, Ohio; Delphos, Ohio; Chattanooga, Tennessee. Continental Grain Co. (11); Guntersville, Alabama; Chicago, Illinois; Taylorville, Illinois; New York City, New York; Cameron, South Carolina. Farmland Industries / Far Mar Co (4); Van Buren, Arkansas; Sergeant Bluff, Iowa; Hutchinson, Kansas; St. Joseph, Missouri. Gold Kist Inc. (6); Decatur, Alabama; Atlanta, Georgia; Valdosta, Georgia. Honeymead Products Co. (3); Mankato, Minnesota. Land O'Lakes, Inc. (5); Fort Dodge, Iowa; Sheldon, Iowa; Dawson, Minnesota; Minneapolis, Minnesota. Missouri Farmers Assn.–Grain Div. (6); Mexico, Missouri. Owensboro Grain Co., Inc. (2); Owensboro, Kentucky. Perdue Incorporated (2); Salisbury, Maryland. Planters Oil Mill, Inc. (2); Rocky Mount, North Carolina. Quincy Soybean Co. (4); Quincy, Illinois. Ralston Purina Co. (8); Bloomington, Illinois; Lafayette, Indiana; Iowa Falls, Iowa; Louisville, Kentucky;

Kansas City, Missouri; St. Louis, Missouri; Raleigh, North Carolina; Memphis, Tennessee. Riceland Foods, Inc. (9); Helena, Arkansas; Stuttgart, Arkansas. Sherman Oil Mill (1); Fort Worth, Texas. Southern Soya Corp. (1); Estill, South Carolina. A.E. Staley Manufacturing Co. (7); Decatur, Illinois. Townsend's Inc. (2); Millsboro, Delaware. West Tennessee Soya Mill, Inc. (1); Tiptonville, Tennessee.

Associate Members: ACLI Soya Co, White Plains, New York. Anderson Clayton Foods, Dallas, Texas. Balfour MacClaine International, Ltd., New York City, New York. Best Foods, a Unit of CPC International Inc., Englewood Cliffs, New Jersey. Canadian Vegetable Oil Processing—Div. of Canada Packers Inc., Hamilton, Ontario, Canada. Cobec Brazilian Trading & Warehousing Corp. of the U.S., New York City. Delta Cotton Oil & Fertilizer Co., Jackson, Mississippi. Durkee Foods, Div. of SCM Corporation, Chicago, Illinois (Millark M. Evak). Hunt-Wesson Foods, Inc., Fullerton, California. Kraft, Inc.; Glenview, Illinois; Memphis, Tennessee. Lever Bros Co., New York City, New York. Louis Dreyfus, Stamford, Connecticut. Maple Leaf Monarch Co., Toronto, Ontario, Canada (W.G. Milliken). Marwood Company, San Francisco, California. Overseas Commodities Corp., Minneapolis, Minnesota. Pillsbury Co., Minneapolis, Minnesota. Procter & Gamble Co., Cincinnati, Ohio. Schouten International, Inc., Minneapolis, Minnesota. Spencer Kellogg, Div. of Textron, Inc., Buffalo, New York. Alfred C. Toepfer, Inc., New York City, New York (Dierk Overheu).

Standing committees: For each committee, the function of the committee, the names of all members (with the chairman designated), with the company and company address of each are given—Export development committee, Crop Improvement Council. Meal trading rules. Oil trading rules. Safety, health, and loss prevention. Technical. Address: 1800 M. St., N.W., Washington, DC 20036. Phone: 202/452-8040.

904. Pink, Dave. 1981. Oilseed processor ready to reap area advantages. *Windsor Star (Essex County, Ontario, Canada)*. Nov. 9. p. 25.

• **Summary:** Maple Leaf Monarch (MLM) Company's Windsor plant opened for business in July 1979 with a capacity to crush 360,000 tonnes of soybeans each year and up to 95,000 tonnes "of the softer oilseeds including rapeseed (or canola), flax, and sunflower seeds." In Toronto the company could crush only 90,000 tonnes of soybeans and 50,000 tonnes of flax. The company was hoping that their new oilseed crushing plant in Windsor, in Canada's soybean heartland, would give it an edge over the competition. But after two years in production, company president William Milliken says a Windsor address hasn't made much difference—so far." Local soybean production hasn't grown much; MLM depends on the USA for 40% of its soybean supply. But Milliken is optimistic that the move will

eventually pay off. MLM has the best of both worlds. First, a 42-acre site on the Detroit River in Windsor's west end, gives access to a deep water port. Second, the surrounding counties of Essex, Kent, and Lambdon, are Canada's major soybean producing areas.

MLM, which employs about 115 (mostly skilled tradesmen) is owned equally by two parent companies: (1) Maple Leaf Mills, a division of Miami, Florida-based Norin Corp. which is now controlled by Canadian Pacific Ltd., and (2) Lever Bros., a division of the giant European multi-national Unilever Corp. MLM's only other Ontario competitor, Victory Soya Mills, has announced no plans to crush rapeseed. MLM supplies about 36% of Eastern Canadian soy products from its \$60 million Windsor plant—slightly behind Victory Soya Mills and slightly ahead of Canada Packers. MLM had sales of about \$200 million in 1980. These three Eastern Canada crushers combined were able to supply just 80% of Eastern Canada's one million tonne soybean meal market last year, with the balance coming from U.S. firms. The three crushers supplied 172,000 tonnes of soybean oil last year, including small amounts exported to North Africa and the Caribbean. Only 4,000 tonnes of U.S. soybean oil had to be imported into Eastern Canada. But the three Eastern crushers can't compete with U.S. companies for the Western Canadian market; Minnesota crushers can offer lower prices. MLM will continue to run 24 hours a day, 7 days a week, even though there is a soybean oil surplus.

A photo shows William Milliken in a hard hat, standing outside the MLM mill. Age 60, he is a 35-year veteran of the oil seeds business.

Note: This is the earliest document seen (Jan. 2005) that mentions "canola" together with soybeans. The word "Canola" is derived from CANada + Oil + LOw acid. Address: Star agriculture reporter.

905. Dunn, John R. 1981. Re: History of U.S. cooperative soybean processors. Letter to William Shurtleff at Soyfoods Center, Nov. 17—in reply to inquiry. 3 p. Typed, with signature. [2 ref]

• **Summary:** There are three basic organizational types for soybean plant cooperatives: (1) mills owned independently by single local cooperative associations, (2) mills owned by federated regional cooperatives which are, in turn, owned by local cooperatives, and (3) mills owned by centralized regional cooperatives, which are directly owned by farmer members. In reality, combinations of these three types are possible."

"Typically, the meal from cooperative soybean plants is sold either to cooperative feed mills (intra or inter-association sales) to non-cooperative feed mills, or to exporters. Very little meal is sold directly back to farmer owners.

"Most coop mills are not operated in direct conjunction

with local cooperative grain elevators, as you indicate in the text. This may have been the case in the 1940's perhaps, but since that time, mills have become more independently located, procuring soybeans from farmers, from several local elevators by truck, or from distant production regions by train.

"I believe that ADM is now the largest processor—slightly ahead of Cargill. I don't have good figures to back that, however, rather a growing consensus among industry experts.

"Since our study, Gold Kist has sold its plants in Marks, Mississippi, and Decatur, Alabama, to Bunge, dropping Gold Kist to a 15 rank and raising Bunge to 3rd. The net effect on total cooperative share of processing capacity was to lower it to about 17 percent.

"Finally, while ACS has worked closely with the cooperative processors over the years, it would probably be an overstatement to say that we have worked with them more than any other government agency—I just don't know on that one. The credit for cooperatives' success in soybeans accrues to cooperatives themselves, and what assistance we have provided pales by their accomplishment.

"The following table shows various cooperative soybean processors, where they have or have had mills, and when each mill started or was operated. (1) Gold Kist: Decatur, Alabama 1974-1981; Marks, Mississippi 1977-1981; Valdosta, Georgia 1968-present. (2) Farmland Industries: Van Buren, Arkansas 1960 [sic, Oct. 1959]; Sergeant Bluff, Iowa 1974 [sic, Aug. 1975]; St. Joseph, Missouri 1963 (Far-Mar-Co merger). (3) Riceland Foods: Helena, Arkansas 1965; Stuttgart, Arkansas 1958. (4) Land O'Lakes: Sheldon, Iowa 1970; Dawson, Minnesota 1980; Ft. Dodge, Iowa 1971. (5) Honeymead Products: Mankato, Minnesota 1960. (6) Agri Industries: Mason City, Iowa 1943; Manning, Iowa 1979 [Formerly North Iowa Cooperative Processing Assoc., managed by Glenn Pogeler from 1943-1964]. (7) Boone Valley Processing Association: Eagle Grove, Iowa 1943. (8) Missouri Farmers Association: Mexico, Missouri 1946."

On other subjects: Intrade was formed in 1968. Farmers Export Co. [FEC] started in 1968. SoyCot started exporting soybean products in 1979. Address: USDA Agricultural Cooperative Service (ACS), Washington, DC 20250. Phone: 202-475-4929.

906. Smith, Oak B. 1981. Re: Research—Wenger's accomplishments in the past 26 years. Letter to Joe Wenger, Lou Wenger, Don Wenger and Lavon Wenger at Wenger International Inc., Nov. 27. 8 p. Typed, on letterhead.

• **Summary:** I think we are observing an important development—"a technological revolution in food processing which may be the best and perhaps the only economic answer to the food and feed needs of the world which will see its population jump from four billion souls today to 7 billion by the year 2000."

"Extrusion cooking, of course, is but one small link in that food processing chain. I think, however, that we need to look at our own contributions towards solutions of major food problems, and hope that our past accomplishments will help point us towards equally important achievements in the future. What are those Wenger accomplishments in the past 26 years? [i.e., since 1957].

"1. We saw and understood the opportunity that extrusion cooking could give us as a company.

"2. We developed the first commercially available extrusion cooker, and it was all Wenger—we followed nobody else, copied no one, we learned to control our own (often irascible) machine.

"3. We learned how to apply moisture uniformly and how to develop temperatures with screws, with steamlocks, and with final dies.

"4. We learned the advantages of preconditioning with steam.

"5. We learned what gelatinization of starches and cereal flours was, and developed our own method of gelatinizing. We defined gelatinization, and we explained our method of gelatinizing fully and quickly to the industries of pet foods, breakfast cereals, snacks, starches, and industrial processing industries. We publicized the first article written about extrusion cooking and related that to pet foods, and we made this known around the world.

"6. We learned about the toxic constituents in oilseed and pulse proteins, and studied the methods by which heat labile growth inhibitors can be controlled in soybeans, in glandless cottonseeds, and in field beans and peas.

"7. We defined growth inhibitors, and proposed to the feed and food industries the possibilities of extrusion cooking of full fat soybeans."

"9. We explained the process for the extrusion cooking of full fat soybeans for control of growth inhibitors to U.S.D.A., and we were told by U.S.D.A. that our methods would never work in control of growth inhibitors in soy which (they said) needed to be cooked for 30 minutes at 220 degrees F. to control the growth inhibitors. U.S.D.A. did subsequently back down, but only after we had shown them the Purdue [Indiana] work.

"10. We explained to UNICEF the dual capability of controlling the growth inhibitors in soybeans, while simultaneously gelatinizing cereal flours, thus producing the first extrusion cooked, cereal based, protein enriched, mixed and fortified foods for children. We demonstrated that capability to UNICEF and (later) to U.S.D.A."

"11. We developed a good and simple method of dehulling soybeans.

"12. We developed a method of adding intermediate heads, screws, and steamlocks to provide additional dwell time in the extruder.

"13. We demonstrated to U.S.D.A. the first cooking of defatted soy proteins, thus producing the first chewy,

meat-like substance now called textured soy protein meat extenders. We, thereafter, demonstrated this capability to ADM, Swift, and to Ralston Purina and to others who have become the major producers of textured soy proteins around the world.

“14. We developed a secondary cooling and forming extruder, which in turn brought us into the production of third generation snacks, breakfast cereal flakes, and textured soy meat analogs.

“15. We demonstrated to the world our ability to make second generation snacks at unheard of capacities, and with a versatility which no competitor could approach.”

“21. We studied and mastered our ability to process foods at the maximum capacity per hour to a preselected degree of cook of any extrusion cooker manufacturer in the world. We did so with much less electrical energy and much less steam per ton of product. The economics of these achievements are probably the largest single reason why people buy Wenger equipment today, to the exclusion of others.

“22. We developed, perfected, and patented Uni-Tex, a product which is more like the structure, appearance, and mouthfeel of meat than any man-made product in the world. We have not done as well commercially with this product as it merits, but that is only because of inability to locate good meat-like flavors which will stand the temperatures of extrusion. We will find such flavors, and we will also apply flavors externally (which could not be used in soups or stews), but which could be used in casserole dishes, curries, ethnic foods, etc.

“23. We developed our first small machine in 1962, and managed to persuade the major food companies of the world to install the X-25 (and more recently the X-20) as a research and development machine in this country and abroad.”

“25. We have greatly improved our ability to produce, shape and continuously cook, shape and dry third generation snacks. This represents one of the best potentials for future business for us, in my opinion.

“27. We have mastered the processing arts of making dry expanded pet foods, soft moist, and semi-moist pet foods and fish foods. We have maintained our dominant position in pet foods, while developing dominant postures in the production of snacks, textured soy, breakfast cereals, instantized soups, and cereals processed for industrial purposes.” Address: [Chairman, Wenger International, Inc., 2400 Pershing Rd., Kansas City, Missouri]. Phone: (816) 221-5084.

907. Andres, Cal. 1981. Prototype products include higher protein, lower calorie, lower cost frozen desserts, milk based drinks. *Food Processing (Chicago)* 42(12):60-61. Nov.

• **Summary:** ADM Foods has used high fructose corn syrup (HFCS) and isolated soy protein to develop a new family of “dairy compatible” products that “will permit dairy managers to expand product lines and to improve equipment utilization

and operating costs. All products can be made under normal process conditions on existing equipment.” The two main product types are non-dairy frozen desserts and drinks. Ingredients, formulas, nutritional information, and cost savings are discussed.

Note: This is the earliest document seen that mentions either “high fructose corn syrup” or “HFCS” in connection with soy. Address: Senior Associate Editor.

908. Hannigan, Kevin J. 1981. Dressing oil mimics butter—but at much lower cost. *Food Engineering* 53(11):91. Nov. • **Summary:** Subtitle: “This soy-based product has all the advantages of butter for many uses. Even more, its pourable at room temperature and heat stable for 35 hours at 105°F.” Gold ‘N Flavor is a new soy-based liquid dressing developed by ADM Refined Oils, Decatur, Illinois. It can give popcorn that same rich aroma but at less cost than butter or butter substitutes. It contains lecithin, rich buttery flavors, and beta carotene for color. Some harder fractions are built into the oil via precision hydrogenation to give it the exact texture and stability desired.

909. Selliers, Francois de. 1981. Proposal for the financing of a systematic implementation of soya milk plants in the world. Brussels, Belgium: International Investment and Development Corp. 20 p. Nov. Unpublished manuscript. • **Summary:** This study, which is also said to be authored by the “Committee for the Promotion of Soya Milk Manufacturing in Low Income Countries ‘Comsoy,’” consists of several parts. (1) Proposal—11 pages, dated Oct. 1981. (2) Soja bean milk: Presentation for the state of Kenya—2 pages, dated 14 Dec. 1981. (3) Members of the Committee: Eleven who have formally accepted membership, one who has accepted membership in principle, and six who are being invited—1 page, dated 4 Nov. 1981. (4) Memorandum to members of Comsoy: Meetings of Mr. Deselliers; trips to the United States, October 4 to 8 and Oct. 17 to 29, 1981. Discusses persons met on the trip incl. at the IFC (International Finance Corporation), the World Bank, A.I.D., U.S. Department of Agriculture, UNICEF, Bristol-Myers Company, Archer Daniels Midland Co., Appropriate Technology—6 pages, dated 5 Nov. 1981. Address: Chairman, IIDC (International Investment & Development Corp.) Belgium, Belgium S.A., Rond-Point de l’Etoile 3, Boite 8, B-1050 Brussels, Belgium. Phone: (02) 640-68 00.

910. **Product Name:** Tofu, Tofu Burgers, Okara Cakes. **Manufacturer’s Name:** Regular Tofu Company Ltd. **Manufacturer’s Address:** 75 Chandos St., Leicester, LE2 1BU, England. Phone: (0533) 549839. **Date of Introduction:** 1981 December. **New Product—Documentation:** Form filled out by John Holt. ca. 1982. The company opened in Dec. 1981. He now uses 50-100 lb/day of dry soybeans to make regular tofu

(vacuum packed), tofu burgers, and okara cakes. Letter from John Holt. ca. May 1982. "Having used your book to learn how to make tofu, we now have a small business here making about 700 lb/week of tofu and about 2,500 tofu burgers per week. We give our okara to a pig farmer... We sell the nigari tofu vacuum packaged." Soyfoods Center Computerized Mailing List. 1982. Sept. 17. Owner: John Holt.

911. Soyfoods Center; Soycrafters Assn. of North America. 1981. Per capita use of soyfoods grows to nearly 9 lbs. in U.S. *Vegetarian Times* No. 52. Dec. p. 6.

• **Summary:** Based on a Sept. 1981 news release copyrighted by the Soyfoods Center and the Soycrafters Assoc. of North America, this summary of a market study gives for each major soyfood product the number of manufacturers in the USA, Canada, and worldwide. The tons/year of raw soybeans used. And (in the USA only) the tons of food produced, wholesale value, retail value, and number of employees.

In the USA, the number of manufacturers, tons of product produced, and retail value in million dollars are as follows for low technology, traditional: Tofu and tofu products (154, 22,700, \$50.4), tempeh (32, 494, \$1.78), soymilk and soymilk products (14, 148,000, \$118.0), soy sauce, shoyu & tamari (15, 54,837, \$203.0), soynuts and soynut butter (12, 2,750, \$4.6), miso (10, 2,000, \$4.8), soy sprouts (5, 360, \$0.25), etc. Subtotals for low-tech (284 manufacturers, 231,305 tons produced, \$392.25 retail value).

For high-technology, modern: Soy flour & grits, defatted (12, 400,000, \$190.4), textured, extruded soy flour (TSP/TVP) (2, 200,000, \$179.2), soy protein concentrates (3, 45,000, \$56.7), soy protein isolates (3, 45,000, \$126.0), meat analogs (secondary products) (6, 20,000, \$55,000). Subtotals for high-tech (26 manufacturers, 710,000 tons produced, \$615.6 retail value). Total low and high tech: 310 manufacturers, 941,305 tons produced, and \$1,007.85 million dollars.

The news release reads: "Americans are consuming an average of nearly nine pounds of foods made from soybeans per year, according to the Soycrafters Association of North America and the Soyfoods Center. The largest growth is occurring in the consumption of tofu (or beancurd) and tempeh (fermented patties).

"Traditional soyfoods, which include tofu, tempeh, soymilk, miso, soy sprouts, soynuts and soy sauce, account for \$390.7 million in annual retail sales. High technology, modern soy protein foods, which include soy flour and grits, soy protein isolates and concentrates, extruded soy flour and meat analogs, account for \$615.6 million in annual sales. This amounts to nearly \$1 billion worth of soy products consumed by Americans per year.

"Per capita consumption of the low technology foods is now at 2.13 lbs. per year, while consumption of the high

technology foods, which are generally used as ingredients in other products, is now at 6.45 lbs. These figures represent a steady growth in consumption of the large soybean crop produced annually; the greatest part of the crop goes to feed livestock. In 1980, for example, only 2.1% of the 60 million ton crop was used in America for food, which is believed to be the highest percentage ever; 57% of that crop, however, was exported.

"The director of the Soycrafters Association, Richard Leviton, and William Shurtleff of the Soyfoods Center have forecast the following trends for soyfoods use in the United States over the next five years:

"A steady growth in the use of tofu and tempeh by non-vegetarians.

"Growth in the use of convenient, prepared foods made from soyfoods.

"The Big Tempeh Boom" an upsurge in the use of fermented soy patties.

"Large corporations will start marketing secondary soyfoods (such as dips and dressings) via national advertising.

Also published in *New Age* (Jan. 1982, p. 17) under the title "Tofu Takes Over."

912. **Product Name:** [Textured Vegetable Protein].

**Manufacturer's Name:** ADM do Brasil TVP S.A. Technologia Em Vegetais E Proteinas S.A.

**Manufacturer's Address:** Cx. Postal 632, Campinas, SP, Brazil.

**Date of Introduction:** 1981.

**New Product-Documentation:** Soya Bluebook. 1981. p. 58.

913. **Product Name:** Arcon (Soy Protein Concentrates) [F, G, or S].

**Manufacturer's Name:** Archer Daniels Midland Co.

**Manufacturer's Address:** P.O. Box 1470, Decatur, IL 62525. Phone: (217) 424-5432.

**Date of Introduction:** 1981.

**New Product-Documentation:** Manufacturer's catalog, ADM Foods/Protein Specialties. 1981. *ADM edible products/81*. The section titled "Proteins" (p. 19) states that these three types of "soy protein concentrate products are manufactured by extraction of the water-soluble carbohydrates, minerals and other minor constituents, and inactivation of various enzymes.

"Acron F is an off-white, free flowing flour with a particle size such that 95% of the product passes through a 100 mesh screen.

"Acron G is available in off-white grit form consisting of irregularly shaped particles of such size that at least 90% is retained on a 100 mesh screen.

"Acron S is a highly functional soy protein concentrate that provides nutrition and versatility in many food

applications. Acron S is a white, free flowing flour with a particle size such that 95% of the product passes through a 100 mesh screen.”

**914. Product Name:** Arsoy Fiber (Dietary Fiber from Soybean Cotyledons).  
**Manufacturer’s Name:** Archer Daniels Midland Co.  
**Manufacturer’s Address:** Box 1470, Decatur, IL 62525.  
**Date of Introduction:** 1981.  
**Nutrition:** Moisture 7%, protein 20%, fat 1%, ash 4%, crude fiber 13%, other carbohydrates 55%, 100 calories/100 gm.  
**New Product–Documentation:** Manufacturer’s catalog. 1987. Total dietary fiber is 62-65%. For use in baked products, cereals, dietetic foods & beverages as a carrier for total fats, etc. ADM. 1987. “Look Where Soybeans Go.” p. 18. Total dietary fiber 60-65%, neutral detergent fiber 20-22%. Applications: Same as above. Talk with ADM sales dept. 1988. Sept. 15. This product was acquired at the time that ADM took over Central Soya’s isolate operation in Chicago. It is a by-product of soy protein isolate production.

**915. Product Name:** Soy Beverages [Raspberry, Banana, Strawberry].  
**Manufacturer’s Name:** British Arkady Co. Ltd.  
**Manufacturer’s Address:** Old Trafford, Manchester, M16 0NJ, England.  
**Date of Introduction:** 1981.  
**Ingredients:** Incl. soy protein isolates.  
**Wt/Vol., Packaging, Price:** Tetra Brik Aseptic carton.  
**How Stored:** Shelf stable; refrigerate after opening.  
**New Product–Documentation:** Soyfoods Center Computerized Mailing List. 1981. March 4. Soya Bluebook. 1982. p. 63; 1986. p. 102. Now a subsidiary of Archer Daniels Midland Co.

Richard Leviton. 1983. Nov. p. 22. At Anuga, British Arkady received lots of interest in their isolate soymilk. It was sold in Tetra Pak in raspberry, banana, and strawberry flavors.

**916. Product Name:** Do-Soy (Full-Fat, Enzyme Active Soy Flour).  
**Manufacturer’s Name:** British Arkady Co. Ltd.  
**Manufacturer’s Address:** Old Trafford, Manchester, M16 0NJ, England.  
**Date of Introduction:** 1981.  
**Ingredients:** Soybeans.  
**Wt/Vol., Packaging, Price:** 25 kg multi-ply sacks with a protective moisture-proof layer.  
**How Stored:** Shelf stable.  
**Nutrition:** Protein 41.0%, oil 21.0%, carbohydrate 24.0%, crude fibre 2.5%, ash 4.5%, moisture 7.0%.  
**New Product–Documentation:** Soya Bluebook. 1981. p. 63. 1986. p. 85. Company is now an affiliate of Archer

Daniels Midland Co. Ltd. Product information sheet. 1983. Do-Soy has strong enzyme activity. Add it at 7.0% on flour weight and with it an equal weight of extra water.

**917. Product Name:** Arkasoy 50 (Toasted Defatted Soya Flour).  
**Manufacturer’s Name:** British Arkady Co. Ltd.  
**Manufacturer’s Address:** Old Trafford, Manchester, M16 0NJ, England.  
**Date of Introduction:** 1981.  
**Ingredients:** Soybeans.  
**Wt/Vol., Packaging, Price:** 25 kg multi-ply sacks with a protective moisture-proof layer.  
**How Stored:** Shelf stable.  
**Nutrition:** Protein 50.0%, oil 1.0%, carbohydrate 32.0%, crude fibre 3.0%, ash 6.0%, moisture 8.0%.  
**New Product–Documentation:** Soya Bluebook. 1981. p. 63. 1986. p. 85. Company is now an affiliate of Archer Daniels Midland Co. Ltd. Product information sheet and form filled out by P. Fitch of British Arkady. 1983. Arkasoy is a defatted soy flour. Enzyme activity is negative. P.E.R. is 2.1. Total plate count 20,000/gm (max.). *Escherichia coli* and *Salmonella* are absent.

**918. Product Name:** Arkady Grits 55 (Defatted Soya Grits).  
**Manufacturer’s Name:** British Arkady Co. Ltd.  
**Manufacturer’s Address:** Old Trafford, Manchester, M16 0NJ, England. Phone: 061-872-7161.  
**Date of Introduction:** 1981.  
**Ingredients:** Soybeans.  
**Wt/Vol., Packaging, Price:** 25 kg multi-ply sacks with a protective moisture-proof layer.  
**How Stored:** Shelf stable.  
**Nutrition:** Protein 55.0%, fat 1.0%, fibre 3.0%, ash 5.5%, moisture 9.0%.  
**New Product–Documentation:** Soya Bluebook. 1981. p. 63. 1986. p. 85. Company is now an affiliate of Archer Daniels Midland Co. Ltd. Product information sheet. 1983. Total plate count 20,000/gm (max.). Yeasts and moulds 200 per gm (max.). *Escherichia coli* and *Salmonella* are absent.

**919. Product Name:** Granose Soya Dessert (Vanilla, Chocolate, Strawberry, or Banana).  
**Manufacturer’s Name:** Granose Foods Ltd. (Marketer). Made in Germany by DE-VAU-GE.  
**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.  
**Date of Introduction:** 1981.  
**New Product–Documentation:** Lindner. 1987. The World Soymilk Market.  
 Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by DE-VAU-GE, was introduced in 1981 in Vanilla, Chocolate, Strawberry, and Banana flavors. The desserts were made by Alpro in Feb.

1984.

Form filled out by Philippe Vandemoortele of Alpro. 1991. Sept. 4. The desserts were first made for Granose by Alpro in Feb. 1984 in Vanilla and Chocolate flavors.

920. **Product Name:** [S.I.O. Soy Flours].

**Manufacturer's Name:** S.I.O. Direction Proteines.

**Manufacturer's Address:** Chez Societe des Produits Excel, 26-36, Rue des Peupliers, 92000 Nanterre, France. Phone: (1) 785-69-01.

**Date of Introduction:** 1981.

**New Product–Documentation:** Soya Bluebook. 1981. p. 63. No contact person is given. See also SIO 1986. Note: This company seems to be related to Societe Industrielle des Oléagineux (SIO).

921. Daenzer, A. Walter. 1981. Soya-Eiweiss: Nahrung der Zukunft [Soy protein: Food of the future]. Zurich, Switzerland: Verlag Bewusstes Dasein. 84 p. Illust. No index. 21 cm. [Ger]

• **Summary:** Contents: 1. The long journey of a new basic food (TVP, or Soyameat). 2. How it came to Soyameat. 3. The significance of Soyameat for nutrition. 4. Meat or soy protein? (starts with a photo of 25 famous vegetarians). 5. Soy products, the Third World, and world food supplies in the future. 6. Tips and recipes.

This is Dänzer's first book, about textured soy protein (especially Soyana brand TVP), which his company sold. Born in 1947, he is a disciple of the Indian spiritual teacher, Sri Chinmoy. He wrote the book largely to promote his TVP, which he imported and packaged for the Swiss Reform Houses.

He calls TVP *Soya-Fleisch* or *Gefasertes Soya-Eiweiss*.

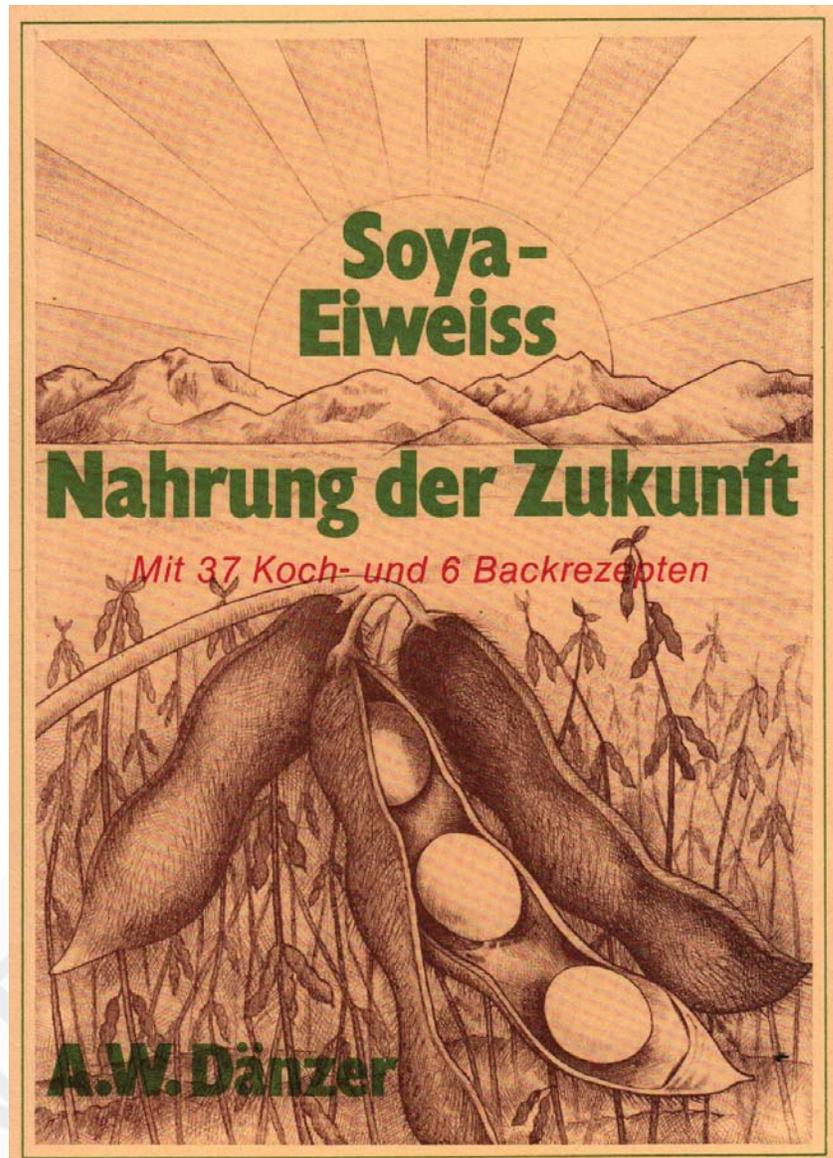
He writes a lot about the purines in meat, as well as the antibiotics, hormones, and cholesterol it contains.

By 1980, he says, there will be enough soy protein on earth to supply the protein needs of every person on earth. How can this be, when now it provides only 25%?

The future is determined by consumer decisions. You hold the future in your hand and in your pocketbook.

He prefers the word *Soya* to the more standard and widely used *Soja*.

Advantages of TVP: Good for food storage. Tasty. Can be prepared quickly. Nutritious. Versatile. Pure plant product with no antibiotics, hormones, cholesterol, or purines. Inexpensive. Abundant. Has a long shelf life at room



temperature.

He discusses *biologisch* [organically grown] and *Reformhäuser* (old-line health food stores). He emphasizes *biologische Soyabohnen* [organic soybeans] and *biologische Tofu* [organic tofu] made with nigari.

Living Farms was founded on 6 Jan. 1975.

Tofu makes all dishes lighter and easier to digest.

There is a need for solar-powered tofu shops in third-world countries.

He uses the nice word *Tofurei*. Who coined this German word and when?

He and his co-workers developed their own Swiss-style tofu recipes (100 recipes).

He has two brands: Soyana and Soyaquel. One is probably for supermarkets and one for Reformhäuser. Address: Soyana, Postfach 8039, CH-8002, Zurich, Switzerland.

922. Forster, Dorothy H. 1981. *Cooking with Tvp: Exciting, nutritious and economic dishes using textured soya protein*. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 96 p. Recipe index. 18 cm.

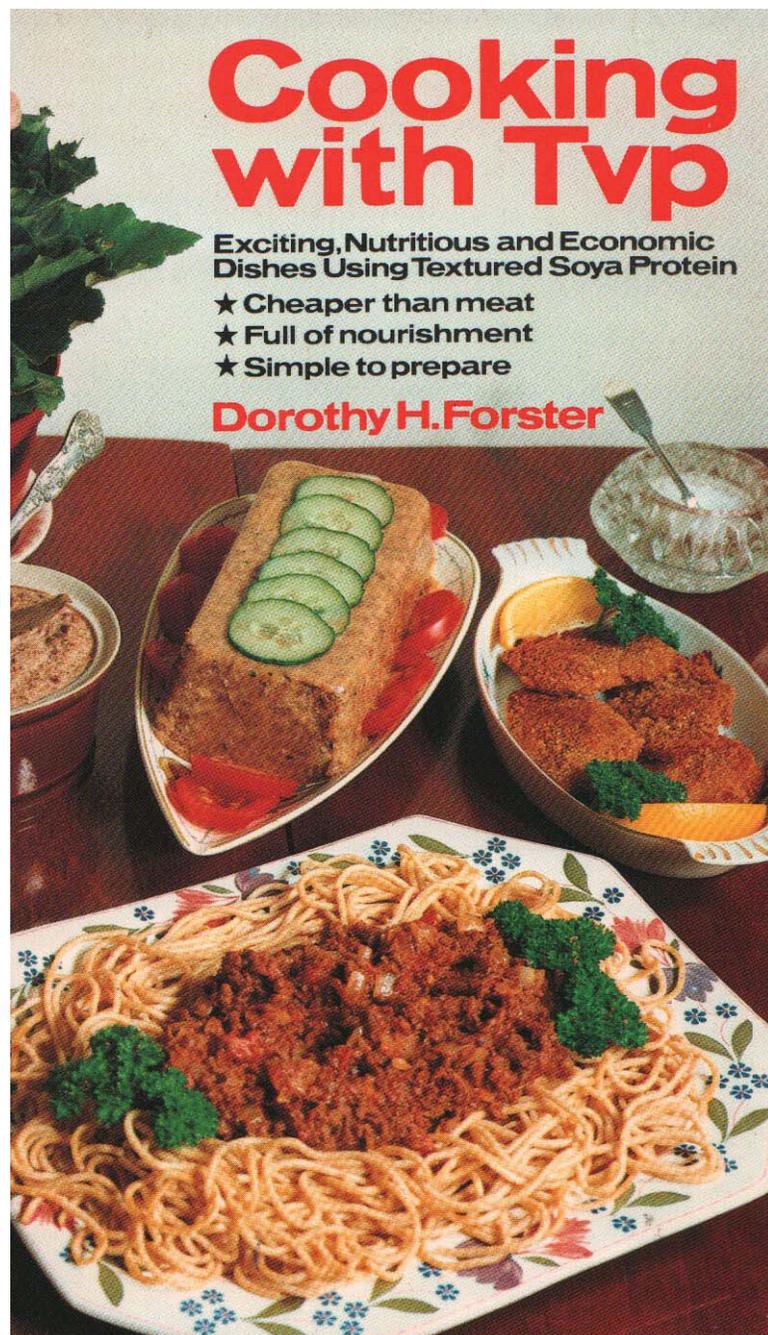
• **Summary:** Contents: Introduction. 1. Soups. 2. Sea food favorites [vegetarian, with dulse often used as a seasoning]. 3. Main meals with mince. 4. Main meals with chiplets. 5. Main meals with chunks. 6. Main meals with slices (or chunks). 7. Some dishes with soya grits.

Tvp is made from de-fatted soya flour which is extruded through a die, under pressure, to make the different sizes of

particles. "There are several varieties and we suggest you experiment until you find the type you are happy with... When reconstituted, Tvp can absorb twice its own weight in liquid. Thus 150g (5 oz) will be equal 450g (1 lb) of meat, when soaked."

Soya grits (with 2 recipes) and soya milk are also discussed. "There are several makes of soya milk on the market in either liquid or powder form as a useful alternative to milk." Miso is mentioned as a seasoning for TVP.

Suppliers of Tvp in the UK are: Lotus Foods Ltd. in London (formed by the author, Dorothy Foster), Direct Foods Limited in Petersfield, Hampshire (Proto-veg Tvp), Itona Products Ltd. in Wigan, Lancs., Life and Health Foods in Norwich, and Marigold Health Foods Ltd. in London (Vitpro Tvp). Address: England.



923. Francke, A. 1981. Plant proteins, the European experience. In: D.W. Stanley, E.D. Murray, and D.H. Lees, eds. 1981. *Utilization of Protein Resources*. Westport, CT: Food & Nutrition Press, Inc. 403 p. See p. 362-69. Chap. 19.

• **Summary:** Contents: Introduction. Vegetable protein sources. Production technology—soy. Application technology—soy. Market situation. Consumer acceptance. Legal acceptance. Conclusions.

"Unilever has played an active role in both the production and application of soy protein materials... In Europe the major source for the production of vegetable protein for human consumption is still the soybean..."

"Production of soy protein materials in Western Europe is concentrated in Denmark, The Netherlands and the United Kingdom. France and West Germany produce only small amounts... Some producers are U.S. firms (e.g. Cargill, ADM) or their European subsidiaries; others are European companies. Typical European producers are Aarhus Oliefabrik (Denmark), Unimills (The Netherlands), Spillers and British Soya Products (United Kingdom) and Edelsoy [Edelsoya?] (West Germany)..."

"Typical European producers of isolates are Oppenheimer (England) and Edelsoy (West Germany). Fibre spinning is still being studied, e.g. by Rhône Poulenc, France, although it has not made a real break-through. The protein department of Courtaulds (United Kingdom) who until recently, was the sole European manufacturer and supplier of spun soy fibres has been taken over by Mars..."

"The whole current range of soy protein materials is being used in Europe. The best information is available for the United Kingdom.

There, in 1972, 90% of the 45,000 tons of soy food ingredients used was accounted for by full-fat flour in bakery products and, to a lesser extent, in baby and health foods. Only 2,000 tons of soy materials, textured and non-textured flours and isolates, were used in meat products, mainly in institutional feeding and in the catering sector. This amount has increased to 5,000 tons in 1975. In 1977, the total consumption of soy materials amounted to 50,000 tons; thus no great change had occurred.” Address: Unilever Research Duiven, Zevenaar, The Netherlands.

924. Hoshijo, Kathy. 1981. *Kathy cooks... naturally*. The Self Sufficiency Assoc., P.O. Box 1122, Glendale, CA 91209. 497 p. Illust. Index. 28 cm.

• **Summary:** This excellent natural-foods, vegetarian cookbook, written with a nice balance of heart and mind, contains over 1,000 recipes—many written from an Hawaiian viewpoint. The lovely and talented author is the hostess of a popular TV series “Kathy’s Kitchen.” In the long chapter titled “Soybeans” (p. 349-92) is an introduction to the nutritional value of soybeans and soyfoods, plus many recipes for using and making the following at home: Whole dry soybeans (often cooked and mashed; 13 recipes), soy nuts (deep-fried or dry roasted), kinako (roasted soybean flour; homemade + 1 recipe), soy milk (homemade + 19 recipes), yuba (homemade + 11 recipes), okara (15 recipes), tofu (homemade + 50 recipes), frozen tofu (“Homemade TVP” + 7 recipes), miso (18 recipes). Address: Self-Sufficiency Assoc., 2525 South King St., Honolulu, Hawaii 96826, or P.O. Box 1122, Glendale, California 91209.

925. Windish, Leo G. 1981. *The soybean pioneers: Trailblazers, crusaders, missionaries*. Galva, Illinois: Published by the author. viii + 239 p. Illust. No index. 26 cm.

• **Summary:** Contains many interesting biographies, often based on the author’s first-hand knowledge. Contents: Section I: 1. A time to pause and reflect. 2. Dr. W.B. Morse. 3. The Cinderella crop of this century and some orchids long overdue. 4. First soybean crushing plant (Hull, England; Seattle, Washington; Elizabeth City, North Carolina). 5. George M. Strayer (Contains a good history of the American Soybean Association and Strayer’s role in it). 6. Ersel Walley. 7. Dr. Harry Miller. 8. Henry Ford. 9. Northern Regional Research Laboratory. 10. Dr. Reid Milner. 11. Soybeans in China. 12. The first combine harvesters, the western migration, and the passing of an era (a good history of combines in the USA from the 1850s to the present). 13. Prof. W. Ralph Nave (agricultural engineer, specializing in improving combine design for harvesting soybeans). 14. Soybean harvesting equipment.

Section II: 15. August Eugene Staley, Sr. 16. Eugene D. Funk, Sr. (and the Peoria Plan, p. 74). 17. Dale W. McMillen [of Central Soya]. 18. Jacob Hartz, Sr. 19. Archer-Daniels-Midland Company, Inc. 20. Jay Courtland Hackleman. 21.

Dr. Robert W. Howell. 22. Dr. W.O. Scott. 23. Program. 24. Crop improvement associations. 25. Illinois Crop Improvement Association. 26. Professor Emeritus Alvin L. Lang. 27. Morrow Plots.

Section III: 28. Dr. Clyde Melvin Woodworth. 29. Dr. R.L. Bernard. 30. Theodore Hymowitz. 31. A reluctance to accept change or progress. 32. Episodes. 33. Russian Tour. 34. South Farm buildings. 35. Soybeans again assert their value. 36. Taylor Fouts. 37. Excerpts from the Mumford Files. 38. Excerpts from the Hackleman Files. 39. Soybean variety and inoculation demonstrations. 40. The frosted green soybean dilemma. 41. Soybeans in the Deep South. 42. Mr. H.G. [sic, George Heartsill] Banks. 43. Dr. E.E. Hartwig. 44. U.S. soybean production. 45. Aquaculture... the world’s untapped resource, by Julian M. Weiss (Based on an article in the Dec. 1980 / Jan. 1981 issue of *From Lion* magazine. “While the history of fish farming is traced back to 500 B.C. when Chinese seafarers were successful in breeding carp, interest in improving technology fell behind other innovations. 1974 to 1979 the harvest from aquaculture more than doubled to nearly 7 million metric tons...”). 46. Almost a century of progress. About the author (autobiographical): Leo Gilbert Windish was born in 1909. A retired seedsman, he attended the University of Illinois in 1927 and 1928. He was close friends with Hackleman, and wrote this book in fulfillment of a promise he made to Hackleman, whom he described as “the soybean’s greatest missionary.” Windish also knew Burlison (the first to promote soybeans heavily) and Woodworth (the first soybean geneticist).

Note: Most of the chapters about people contain a portrait photo of the person on the first page. Address: 101 Exchange St., Galva, Illinois 61434.

926. Windish, Leo G. 1981. *Archer-Daniels-Midland Company, Inc.: Pioneer soybean processors who rank among the giants in the industry* (Document part). In: Leo Windish. 1981. *The Soybean Pioneers: Trailblazers, Crusaders, Missionaries*. Galva, Illinois: Published by the author. viii + 239 p. See p. 97-103. Chap. 19.

• **Summary:** The western world was slow to realize the possibilities of the soybean, which has been a mainstay of the Chinese diet since time immemorial, and has a recorded history dating back 5,000 [sic, about 3,000] years. Until nearly 1900, soybeans were grown only as a curiosity in botanical gardens or at agricultural experiment stations.

“The introduction of the soybean can be considered to date from 1898, when the Department of Agriculture started a program of research and began importing many varieties. It took a long time for farmers to become aware of the value of the plant, not only as silage but for its soil-building properties, as green manure. The nutritional value of the bean was not stressed, but in 1915 enough beans were harvested so that a cottonseed oil mill was able to use its presses on soybeans during a shortage of cottonseed. This experiment

was the first attempt to crush domestic soybeans; however, imported soybeans had been crushed by a mill as early as 1910 on the Pacific coast.

“The soybean first came into prominence after the United States entered World War I. Research on proteins resulted in a big increase in acreage, but it was 1924 before soybeans were available in commercial quantity, and another ten years before more than one-third of the crop was harvested as beans. The ratio did not exceed 50 percent until 1940, but as a result of great demand for soybeans during World War II, 90 percent of the crop was being harvested as beans in 1950.

“The first soybeans were raised on North Carolina farms, and they remained primarily a southern crop until the center of production shifted to the corn belt in the 1920’s. Since soybeans thrive on the same climate and soil as corn, this area now produces over three-fourths of the total crop.

“Intensive research by agricultural experiment stations has aided tremendously in furthering the production of soybeans. The development of special strains for specific areas has been extremely important because soybeans are acutely sensitive to soil and climate. Research has singled out varieties that fill demands for higher oil content, earlier maturity, or greater yield. The average yield, which doubled between 1925 and 1950, is now 22 bushels per acre. Of more than 10,000 varieties introduced by the Department of Agriculture, only about 100 are grown to any great extent.

“Soybeans are borne in typical legume-family seed pods containing one to four roundish seeds or beans, ranging in color from yellow through green to black. Darker-seeded varieties that contain less oil are still grown occasionally in the south, but for processing purposes the yellow-seeded types are preferable because of their higher oil content and lack of pigment which discolors the oil and flour.

“The development of the soybean industry, greatly stimulated by both world wars, stems directly from World War I. Such a shortage of fats and oils developed in 1918 that 336 million pounds of poor-quality Manchurian-pressed soybean oil was imported. After the war fats and oils continued to be in high demand, and made it seem worthwhile to try to crush domestic soybeans. The fact that the first processor could only obtain enough beans to make four tank cars of oil in 1920, did not deter another firm from entering the business in 1922.

“Those pioneer soybean processors were a determined lot who overcame seemingly insurmountable odds. It was extremely difficult, to get an adequate supply of soybeans, and just as difficult to dispose of the soybean oilmeal and flour, which no one would buy and few would accept as a gift. It was even difficult to sell oil because it was considered inferior to the imported variety.

“Though production rose to 5 million bushels in 1924, farmers still had to be prodded into raising soybeans as late as 1928, when one of the processors, to be sure of an

adequate supply, contracted to pay a set price for all of the soybeans planted on 50,000 acres. Production climbed very slowly until a 50 percent increase boosted the crop to 14 million bushels in 1930. Once processors realized that soybeans had a promising future they began to expand their facilities, and the public cooperated by readily accepting the new products.

“Not even the worst depression in history could hold back the soybean industry, that made its greatest strides when economic conditions were at their worst. Convinced that soybeans were a profitable crop, farmers boosted production more than three-fold to 49 million bushels in 1935, and nearly double that figure with the 99-million-bushel harvest of 1939. During the war years of 1942 through 1945 the crop ran nearly 200 million bushels, and by 1950 another 50 percent gain raised production to just under 300 million bushels.

“This tremendous increase in the crop reflected a corresponding increase in the demand for soybean products. In 1950, nearly 2½ billion pounds of oil and over 5% million tons of soybean meal were produced. Creating the demand to warrant such an output was a remarkable achievement, particularly since it was accomplished in a relatively short time. In 1924, when 950 thousand pounds of oil were produced, soybean oil was considered an inferior product, an adulterant, or a substitute drying oil used in the paint industry in place of the higher-priced linseed oil.

“None of the oil was of edible quality in the 1920’s, but farsighted importers had begun experiments in refining and clarifying Manchurian oil. The first large-scale use of soybean oil for edible purposes was by the margarine makers in 1930. It proved so successful that the next year’s consumption of oil showed a 275 percent increase. By 1939 margarine shortening and salad oil accounted for 80 percent of the half-billion-pound output. Though six times as much oil is now produced, 85 percent of it is used for edible purposes. Soybean oil has become the leading edible oil, and ranks as the greatest competitor of butter, since it furnishes nearly two-thirds of the margarine output.

“Practically all of the 6½ million tons of soybean oil meal now produced each year is used in livestock and poultry feeds. The meal is also made into soy flour, an important ingredient in ice cream, candy, baked goods, prepared mixes, macaroni products, and high-protein bread. Although industrial uses of the soybean have been highly publicized, they consume only a minute portion of the output. Nevertheless, the soybean is an important ingredient in a host of products as varied as plastics, cosmetics, wallboard, paper coatings, insecticides, paint, ethyl gasoline, and plywood.

“For nearly 100 years, there was little or no change in the method of extracting oil from seeds. The large crushers continued to use the hydraulic press that had been patented in 1850. Each of the two other methods of processing had

very serious drawbacks. The early-day expeller, a continuous screw press that operated on the same principal as a meat grinder, was not suitable for large-scale production of linseed oil but was used successfully in processing small quantities of other oils. The solvent process was commercially feasible as far as crushing was concerned, but since the meal was strongly impregnated by the fumes of naphtha used as a solvent, this 'New Process' meal was extremely hard to sell. In those days, purchasers naturally preferred 'Old Process' meal produced by the hydraulic press.

"There were no drastic improvements in any of the processes until the 1930's, when technical advances were made in all three to such a degree that there was a complete upheaval in the industry. An automatic cake-former eliminated some of the hand labor in the hydraulic process, yet the presses still had to be filled and emptied manually. Until 1935 the supremacy of the hydraulic press was unchallenged, but within a few years it was well on its way to becoming obsolete. An improved expeller press came on the market in 1935 that gave better results on soybeans than the hydraulic press. Three years later a further improved model produced superior results on flaxseed. Since this new expeller press left only a 4 percent oil content in the meal as compared with 5 to 7 percent left by the hydraulic press, the flaxseed industry began to convert to expellers" (Continued). Address: 101 Exchange St., Galva, Illinois 61434.

927. Windish, Leo G. 1981. Archer-Daniels-Midland Company, Inc.: Pioneer soybean processors who rank among the giants in the industry (Continued—Document part II). In: Leo Windish. 1981. *The Soybean Pioneers: Trailblazers, Crusaders, Missionaries*. Galva, Illinois: Published by the author. viii + 239 p. See p. 97-103. Chap. 19.

• **Summary:** Continued: "When ADM first started to process soybeans in 1929 at its Toledo and Chicago plants, the hydraulic presses that had been used for flaxseed were used for soybeans. No special equipment was installed because at that time this was the best available method of processing. ADM took a bold step in deciding to install a solvent extraction unit for soybeans at its Chicago plant. In this country solvent extraction, never used for volume production, made little headway because no satisfactory solvent had been found. The soybean industry was still in its early stage of development, and there was no certain assurance that it was on the verge of enormous expansion. Furthermore, it was still the depth of the depression, and in 1933 ADM's net sales were the lowest they had ever been. At this time plant superintendent E.W. Schmidt was sent to Europe to study solvent extraction and bring back the best equipment available. Solvent extraction had originated in Europe, having been introduced by an Englishman in 1843, but only in recent years had the process been perfected and come into wide use.

"The Hildebrandt unit that Schmidt selected in Germany

consisted of a U-shaped tube about 3 feet in diameter. Having been crushed and rolled into paper-thin flakes, the soybeans entered one end of the tube, through which they were propelled by revolving screws. The solvent, hexane, entered the other end of the tube and moved in the opposite direction while it extracted oil from the flakes. The oil and solvent mixture came out one end of the tube, and the meal the other. After the solvent had been removed by distillation, the oil was ready to be refined, and the solvent was available for re-use. This process was so effective that only 1 percent of the oil was left in the meal. The lower oil content made solvent-extracted meal very hard to sell at first, even though purchasers were being offered a protein concentrate that contained 44 percent protein as compared to the 41 percent produced by hydraulic or expeller presses.

"After the extraction unit had been installed in June, 1934, ADM started to produce lecithin, which is derived from crude soybean oil. Like the soybean itself, lecithin has a wide variety of edible, industrial, and medicinal uses. It is an important ingredient in bakery products, ice cream, and candy, being particularly valuable as a preservative coating for chocolate. Its industrial uses range from anti-knock gasoline to the textile field, and its medicinal uses include cosmetics and pharmaceuticals.

"Shreve M. Archer's reports to the stockholders usually contained a minimum of information stated as briefly as possible. The only clue to the significance of the announcement he made in the 1939 annual report lay in the fact that soybean was spelled with a capital 'S.' Because of the growing importance of the soybean industry the board authorized the construction of a modern plant in Decatur, Illinois. This location was chosen because of the availability of raw material and a favorable rate structure. Construction was started early in the year. This was to be the world's largest solvent extracting plant.

"Once again Mr. Schmidt, then ADM's general superintendent, had gone to Germany to investigate the latest developments in extraction. This time he ordered a Hansa-Muhle unit which carried the flaked bean in buckets on a moving chain. The continuous extraction unit also operated in a U-shaped tube, but in this case the solvent flowed through both sides of the U and drained out the bottom. The unit had a daily capacity of 400 tons, four times the capacity of any that had been used in Europe, and made ADM the largest processor in the world.

"Even if it had been foreseen that war would, break out in a few months, the new plant could not have been rushed to completion faster. The land was not purchased until June, 1939, but with three shifts working on a 24-hour basis the plant was completed by November. In addition to the solvent unit, which occupied a 5-story tower, storage capacity for 5 million bushels was provided.

"With this huge new plant ADM was ready, just in time, to take full advantage of the phenomenal increase in demand

for soybean products that came as a result of World War II. While the consumption of soybean oil was doubling and tripling, ADM laid plans for expansion, but they could not be implemented until war-time restrictions were lifted. In 1949 before a second unit was installed that more than doubled the original capacity of the plant.

“In recent years there have been a number of important additions to the Decatur plant. A continuous-flow refining unit was installed in 1949 and the following year an edible-oil refinery was completed. Up to that time ADM, while selling crude soybean oil to margarine and shortening manufacturers, had not produced edible oils. The new refinery made it possible for ADM to supply the food industry with cooking and salad oil, and to furnish edible soybean oil to large consumers such as canners of sardines and tuna fish. ADM became the largest producer of soy flour by virtue of the new processing plant installed at Decatur in 1949. Still another addition, completed in 1953, was a plant that uses vegetable oils, particularly soybean oil, in making vinyl plasticizers.

“A new solvent extraction plant for soybeans went into operation in November, 1950, at Mankato, Minnesota. This is conveniently located for processing both the Minnesota crop and that of northern Iowa. Even more important in the choice of this site was the fact that ADM already had a formula feed mill there. The solvent extraction plant was built adjacent to the feed mill so the meal could travel by conveyor belt from the extraction unit to the feed plant.

“The Chicago plant, with capacity of 6,000 bushels a day, was closed in 1953 because of its small size, and its proximity to the 54,000-bushel-a-day plant in Decatur which has varied facilities for special processing. Because of the demand for such products as flours and edible oils, production facilities at Decatur were modernized and those at Mankato greatly enlarged.

“When the solvent extraction plant was installed at Mankato in 1950, Minnesota had ranked sixth in annual soybean production with 17.8 million bushels. By 1956, when a record 457 million bushels were produced nationally, it had climbed to second place with 52.5 million bushels. The Mankato mill has been equipped to produce both edible soy flour for bakery products and prepared mixes and industrial flour for adhesives and coatings. Since one of the chief markets for industrial adhesives is the plywood industry of the west coast, Mankato’s location on three major railways makes it a very advantageous shipping point. From Mankato, too, the western market is supplied with high-protein soybean oil meal. Originated by ADM and first produced at Decatur, 50 percent protein meal is widely used in high-energy feeds for hogs and poultry” (Continued). Address: 101 Exchange St., Galva, Illinois 61434.

928. Windish, Leo G. 1981. Archer-Daniels-Midland Company, Inc.: Pioneer soybean processors who rank among

the giants in the industry (Continued—Document part III). In: Leo Windish. 1981. *The Soybean Pioneers: Trailblazers, Crusaders, Missionaries*. Galva, Illinois: Published by the author. viii + 239 p. See p. 97-103. Chap. 19.

• **Summary:** Continued: “Had it not been that most of the extraction and processing facilities were new and at top efficiency, ADM would have fared far worse during the period when marketing of soybean products was so seriously handicapped by economic factors. There were only 33 days during the 1953-54 crop year when soybean oil and meal together brought a better price than soybeans themselves. In 1955 ADM lost money on its basic soybean processing. Nevertheless, throughout these years ADM’s upgraded soy products continued to produce a profit.

“And thus another chapter in the pioneer history of soybean processing has been added, on the part of the Archer-Daniels-Midland Company. Their innovations and added capacity helped greatly to expand the growth of the soybean and its products (17).

“Back in 1926, the William O. Goodrich Co. was acquired by ADM... oil from soybeans and other vegetable seeds, using a Scott batch-extraction system. In 1933, Shreve M. Archer sent a representative to Europe to study the major solvent extraction plants, and the next year started a 150-ton-a-day Hildebrandt continuous solvent extraction unit, thus becoming the first in the country to process beans by that process. Walter Flumerfelt, then a successful processor in Waterloo, Iowa, had operated a small solvent plant at Monticello, Illinois for two years beginning in 1929. It was the first actual business venture of this type and Flumerfelt’s patent on continuous solvent extraction was later used on wheat-germ extraction. Much helpful information came out of the Monticello venture.

While Archer-Daniels-Midland Co. began processing by expeller in 1929, their big push in the industry came with entrance into the solvent extraction field. They were first in volume production and merchandising of this type of 44 percent protein meal. In research work and merchandising of solvent extracted soybean oil meal, long popular in Europe, they spent a fortune of substantial proportions. In this project alone there is an interesting story that has yet to be written as a guide to other industries. The following information was taken from pages 27-30, Chapter 4, titled *The Big Drive Starts*, from the book *Soybeans, Gold from the Soil*.

“At the outset the new solvent product was placed on consignment with all types of dealers and distributors over a wide area. Said Whitney Eastman, ADM vice president: ‘We might just as well have placed it on the shelves of jewelry stores in Iceland.’

“Years of intensive sales plugging and skillful merchandising policies brought about the present-day acceptance and a growing demand that absorbs a larger volume each year, Long before the Goodrich Co. was acquired by Archer-Daniels-Midland Co., it had studied the

refinement of Manchurian soybean oil and in the early 1920's clarified soy oil was developed, along with a number of other special oils. This was a forward step of some consequence.

"A Very Close Call: Only tariff protection saved the soybean industry from being nipped in the bud and permitted manufacturers to expand the grower's market. Even before the industry was developed there was a group of vegetable-oil processors and agriculturists seeking domestic protection from the Manchurian inroads, and progress was made after the tariff act of 1913. For the next eight years 'free traders' sought to destroy this protection. In these battles Whitney Eastman took an active part. In 1921 this small group fought through a duty of 20 cents a gallon on cottonseed and soybean oils, increases of taxes on some other competing oils, and a duty lift to 30 cents per bushel on flaxseed. There were further battles and further gains in 1922, 1930, and 1936, until the soybean farmer felt at least his expansion program could not be destroyed overnight by defective tariff rates.

"During the five years of the legislative drive beginning in 1930, Whitney Eastman had served as president of the processor's association. His company meanwhile moved ahead to the position it now holds as one of the giants in the industry. Other major companies which entered the field about that time were Allied Mills & Co. and Ralston-Purina Co., which entered the field in 1930 and at one time was the largest single consumer of soybean meal. Spencer Kellogg & Co. stepped into the industry in 1935 under the direction of Howard Kellogg, Jr., and Swift & Co. began operations in 1937 with one of their larger early plants located in Champaign, Illinois.

"Processors never lacked for courage. Even during the stock market crash in October, 1929, new soybean processing plants were being launched. Among them were Standard Soybean Mills and the Iowa Milling Co." Address: 101 Exchange St., Galva, Illinois 61434.

929. ADM Foods. 1981? ADM edible products/81: Sweeteners, milling, baking specialties, proteins, oils, malts, pastas. Box 1470, Decatur, IL 62525. 30 p. Undated. 28 cm. Catalog.

• **Summary:** Pages 19-21 describe the following soy protein products: TVP textured vegetable protein, TVP condiment types (bacon flavor bits and chips, sausage flavor bits, pepperoni flavor bits, cheese flavor bits, onion flavor bits, garlic flavor bits), Arcon soy protein concentrate, Ardex isolated soy proteins (Ardex D, Ardex DHV, Ardex F, Ardex SP-6), Nutrisoy 101 and Nutrisoy 102, Nutrisoy Fiber soy bran, Toasted Nutrisoy flour—defatted soy flour, Nutrisoy flour—defatted soy flour, Bakers' Nutrisoy—defatted soy flour, Nutrisoy 7B flour—defatted soy flour, Nutrisoy 220T—refatted soy flour, Soylec lecithinated soy flour and 15% refatted B.N., Soylec T-6, Soylec T-15 lecithinated soy flour, Toasted Nutrisoy grits 8-20, 20-40, 40-80, 80-0—defatted soy grits,

Defatted soy flakes (offered for brewers, etc.), Nutrisoy Bits, Arlec lecithin granules.

Note: In this catalog, ADM has changed the meaning of the brand name "Ardex" to refer to isolated soy proteins. Address: Decatur, Illinois.

930. ADM Foods. 1981? Look where soybeans go. Box 1470, Decatur, IL 62525. Undated. 28 cm. Catalog. \*

• **Summary:** On the cover is a huge yellow soybean, over a field of soybeans planted in rows facing the viewer. The title is written above the soybean in small letters. Address: Decatur, Illinois.

931. Honeymead Products Co. 1981? The history of Honeymead (Leaflet). Mankato, Minnesota. 2 p. Undated.

• **Summary:** Here are a few dates that are important to the growth and development of Honeymead.

"1937—A group of Mankato, Minnesota, businessmen buy an old tile plant and convert it to crush soybeans. Note: The company is named Mankato Soybean Products until 1947.

"World War II [1942]—Western Farmers [Washington Egg and Poultry Association], a Seattle, Washington, based Farmer Cooperative buys Honeymead to insure a steady supply of soy protein for their livestock feed.

"1947—The Mankato plant is purchased by Dwayne and Lowell Andreas and given its present name—Honeymead.

"1949—Solvent extraction is introduced.

"1957—Honeymead begins refining soybean oil.

"1960—Honeymead is purchased by the Grain Terminal Association [GTA], a grain marketing cooperative based in St. Paul [Minnesota]. We process 50,000 bushels of soybeans daily.

"1961—GTA purchases Minnesota Linseed Oil Company, at Fridley, Minnesota, a flax-crushing operation.

"1963 [sic, April 1964]—Honeymead begins producing hydrogenated or 'hardened' soybean oil, the basis for margarine or shortening. We're processing 240,000 lbs. or tank cars of hydrogenated oil per day.

"1964—Honeymead makes its first 40 tankcar shipment of 'hardened' oil to New Orleans [Louisiana].

"1965—Waste water control is instituted at our Mankato facility.

"1967—Minnesota Linseed begins to develop a new oilseed market—sunflowers. First contracts cover 10,000 acres.

"1974—Honeymead and Minnesota Linseed merge. Honeymead enters the consumer foods market with the purchase of Kent Products, a margarine manufacturer based in Kansas City, Missouri. Construction is started on a new processing plant in Mankato.

"1975—Honeymead purchases its second margarine plant, Carthage Creamery, Carthage, Missouri, and places it under Kent Products management.

“1976—Construction of our new soybean processing and edible flour plant is completed. Mankato now processes 80,000 bushels of soybeans each day.

“1977—Honeymead strengthens its position in the consumer foods market with the acquisition of Holsum Foods, an established food processing company.

“1979—Honeymead consolidates three plants: (1) Carthage Creamery, (2) Kent Margarine, and (3) Holsum Foods, Kansas City, into one operation, by completing construction of a new margarine plant in Olathe, Kansas.

“1979—With the purchase of Miami Margarine in Albert Lea, Minnesota, Honeymead continues to expand its lines of margarine and shortening.

“1979—Holsum Foods, with its headquarters in Waukesha, Wisconsin, is given management responsibility for all existing food processing and margarine operations.

“1979—Construction of a new extraction plant begins at Honeymead’s Fridley sunflower and flaxseed plant.

“1980—Honeymead completes construction of its new extraction plant at Fridley. We are now able to process 54,000 bushels of flaxseed or an equivalent amount of sunflower seeds each day.”

Note: The source of this document is unknown. Address: P.O. Box 29, Mankato, Minnesota 56001.

932. Boismenu, Clyde. 1982. Textured soy protein products in America today (Interview). *SoyaScan Notes*. Jan. 26. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The biggest present outlet for TVP (more precisely textured soy flour or TSF) is in the pet food industry, and some is used in the U.S. school lunch program. Occasionally a foreign country, such as Poland or the USSR, will buy some to extend meats.

The Briggs Amendment is a California state amendment of about 1975; it regulates the labeling of meat products containing soy. If you add soy to hamburger you must label it “imitation hamburger,” and even restaurants and institutions must state the names on the menu or, if there is no menu, in a sign on the wall, if the extender is bread crumbs. But the health inspectors overlook a lot of violations, as in small restaurants. Companies are not even allowed to use fanciful names such as “Superburger.” Because of all this, customers in California have stopped using soy in droves and brought sales to a crashing halt. Clyde thinks there may be a similar law in New York; he does not know how many other states have such restrictive laws.

Nationwide, imitation cheese must have the word “imitation” as the largest word on the box; it looks absurd.

A company that wants to make TSF must buy a number of large extruders. Each one makes 3,000 to 5,000 lb/hour, and most companies own 3 to 5. Every one of the major manufacturers for TSF or textured soy protein products is losing money. Prices are terribly low and the industry is operated at an estimated 10% of capacity in 1981.

ADM’s TVP is the most dense, but it gets too soft on cooking. Textured concentrates are too hard, and are like gristle or rubber in the finished product; they have less flavor but cause less flatulence. Textured isolates are too expensive, costing more than the meat they are intended to replace. All companies are desperate for a breakthrough.

ADM has never spent much money on developing imitation beef, ham, or chicken. Yet it the company has developed meatless entrees to increase profit margins. Uncle Archie’s line of meatless entrees included Pepper Steak (the first one developed), Chicken Almadine, Sweet and Sour Pork, and Hearty Stew. ADM wanted to move from TVP extender to meatless entrees about 2 years ago. Like everybody, they rushed to GNC (General Nutrition Corp.), which reformulated the pepper steak by removing the mushrooms. It didn’t sell well before or after the reformulation, so ADM tried to market it themselves under the Uncle Archie’s brand. From the start, they appealed to the Safeway mentality, using lots of artificial ingredients. The product now tastes good but it looks like they will flop anyway.

Worthington and Loma Linda are also having big, indeed disastrous, problems. All the TSP (textured soy protein) products are dying on the vine. Central Soya can’t sell textured concentrates. Loma Linda plans to try to duplicate the success of Sanitarium Food Co. [Australia] with breakfast cereals. Some health food stores have carried Loma Linda products, but natural food stores object to all the additives. And now even some Seventh-day Adventists are starting to be critical for the same reason. None of the natural- or health food stores will carry Clyde’s TVP because it contains so much artificial stuff.

Nabisco is no longer in the business, and Central Soya has discontinued the line of material they bought from General Mills. Cargill and Lauhoff are now in quite a precarious position. Cargill makes a good line of soy flours, but they also have a line of textured protein products that they have never been able to position correctly; they are operating at about 10% of capacity. Cargill got in early then in 1976 spent several million dollars more upgrading their plant so it is one of the nicest in the industry. A man with the inside scoop on Cargill is ADM’s manager in the western region, Bill Potter, phone 213-833-1389. He was Cargill’s sales manager and now lives in Los Angeles.

The three people and companies that hold all the process patents and pooled them were Nabisco, Swift & Co. and ADM; that jump-started this industry. All three had a slightly different process, so they cross licensed to get the TVP process going. Lynn Adolphson of ADM is the best man in the USA to ask about his; he really knows the industry.

General Mills was one company that really went into TSP in a big way. They had a line of flavored products that has never been duplicated since—all the TVP items that were used as meat extenders, including the Bontrae line which

were very fancy products. They introduced spun isolates in a really big way in both the bacon bits type products and their whole line of frozen meat analogs. One day they shut down the whole operation without any warning. They sold the frozen line to Dawson Mills, and sold the Bontrae process to Central Soya, both of whom have shut down these products in the last 18 months or so. Dawson Mills got completely out of the ISP business, but may still have a weak line of textured products. People keep hoping the market will materialize, but it never happens, so eventually they have to get out to cut their losses.

Three companies went out in the first washout: General Mills, Swift & Co., and finally the Marschall Division of Miles Laboratories. A division of National Can called National Protein Products or something like that made a compressed soy grit very similar to that made by Nabisco.

We're now heading for a second washout. Lauhoff is weak but has a little niche in the pet food industry. With the market collapsing and export sales bleak, everyone is going hook and tong after the pet food industry. Lauhoff was just bought by Bunge. Worthington is probably in a pretty precarious position. They have huge capacity with a market of 2-10% of capacity.

Lauhoff and Cargill will probably be the next ones out. Dawson Mills is sort of dragging along at the rear, a little weak. Clyde is not sure if they still sell textured products. They banked an awful lot on textured soy concentrate. They still have a few fairly large customers—such as SAGA Food Services. All three companies need big volume to run their machines economically.

ADM is definitely in the strongest, premier position among the makers of new soy protein products. ADM has strength across the board—not just in pet foods. They are the only company with a truly complete line of products and a decent line of flavored products. ADM is way out in front with the edible soy products because of better texture and flavor. Cargill, Dawson Mills, and Central Soya have sort of a nondescript product—not outstanding and not positioned well. They are losing money.

Central Soya is having problems with its textured soy protein concentrate. Staley is a dogged competitor. They have concentrated on a few items which they sell inexpensively; they do a good job with those, but they have no flavored products. Farmland (Far-Mar-Co) is also a dogged competitor. They have a line of flavored TSF that has never gone any where.

Each strong manufacturer has at least one pet food account from which they draw their financial life. All the companies are losing money on their pet food TSF but they have to have it to keep their overhead spread thin enough to make money on anything else. So the competition in the edible soy products industry is brutal.

What killed them all was Wenger Manufacturing Co. In the early days the pet food makers were happy to get TSF

at 60 cents/pound, which was much cheaper than beef. But soybean meal was 6 cents/pound. So pet food makers started to buy a lot—dozens of carloads. Then Wenger shows up and says, “Why not buy an extruder, buy soybean meal for 6 cents/pound, and make your own TSF?” This forced TSF processors to drastically lower rates to cost of meal plus a fixed processing charge. That still allowed the processors to work off a lot of scrap. Some bought Wenger extruders. That was the end of profits in the pet food industry.

Dwayne Andreas took an early liking to TVP. Dwayne is a very homey person, a Quaker [sic, Mennonite] in the true sense. He developed and made a flaked breakfast cereal out of TVP; it contained 100% of the RDA for everything and you just poured milk on it—not a hot cereal. Or it could be used as a tuna extender. But in about 1972 the cereal makers rejected it; they thought it was too concentrated. That was one of the first times ADM got burned—a sort of TVP tragicomedy. Bob Sullenberger is another key man and good source of information. Address: Basic Foods Co., 1211 E. Olympic Blvd. #204, Los Angeles, California 90021. Phone: 213-623-6686.

**933. Product Name:** Vegetable Protein Entrees [Uncle Archie's Chicken Almondine, Sweet 'N Sour Pork Style, Pepper Steak, or Hearty Stew Style].

**Manufacturer's Name:** Archer Daniel Midland Co.

**Manufacturer's Address:** Decatur, Illinois.

**Date of Introduction:** 1982 February.

**Ingredients:** Sweet 'N Sour Pork: TVP (soy flour), sugar, cornstarch, bell peppers, natural flavorings, vinegar solids, onion, tomato paste, garlic, sherry wine solids, monosodium glutamate (flavor enhancer), salt, spice, disodium inosinate and disodium guanylate (flavor enhancers), artificial flavor and colorings, citric acid.

**Wt/Vol., Packaging, Price:** 5.8 oz paperboard box.

**How Stored:** Shelf stable.

**Nutrition:** A 2/3 cup serving contains 10% of the U.S. RDA for protein, 138 calories, and less than 1 gm fat.

**New Product—Documentation:** Spot in Soyfoods. 1982.

Winter. p. 57. The product line is billed “An Oriental style entree based on textured vegetable protein and a delightful blend of vegetables served in a sauce designed to enhance their flavors.” The product is dehydrated.

934. Lauser, Greg C. 1982. History of Cargill's involvement in the soybean processing industry. Minneapolis, Minnesota. 5 p. March 15. Unpublished manuscript.

• **Summary:** Soybean processing: “1942—Cargill entered the soybean processing business with the acquisition of expeller plants in Springfield, Illinois (sold in 1950), and Cedar Rapids (east), Iowa. Note: These two plants were purchased from Ike Sinaiko and Joe Sinaiko respectively, but probably in 1943.

“1943—Cargill acquired Plymouth Processing

Company's plant and grain elevator at Ft. Dodge, Iowa (sold in 1971 [to Land O'Lakes]).

"1945–The company acquired from Honeymead solvent extraction plants in Spencer and Cedar Rapids (west), Iowa. The solvent-extraction process is used in modern plants today.

"1946–Cargill acquired the Washington, Iowa, soybean crushing plant and began crushing flax seed at a plant it built at Port Cargill in Savage, Minnesota. The same year, the company acquired from the Falk Corporation a flax processing plant in Minneapolis. Since 1967, that plant also has been crushing sunflower seeds.

"1947–The company opened a soybean crushing plant at Savage, Minnesota.

"1950–Cargill built its first plant specifically designed to crush soybeans in Chicago to serve domestic oil and meal markets. In 1956, a refinery was built adjacent to the crushing plant that produces industrial refined non-edible oil used in paints and other protective coatings and in vinyl products. Cargill also acquired a flax crushing plant in Philadelphia that was closed as a crushing plant in 1953.

"1957–Cargill opened a soybean processing plant in Memphis, Tennessee. A second plant was added adjacent to the first in 1970.

"1959–Cargill expanded the scope of its soybean crushing activities to the Southeast by opening a facility in Norfolk, Virginia, and acquired a plant in Sioux City, Iowa, from Sioux Industries.

"1960–The Wichita, Kansas soybean crushing plant was acquired from the Soy Rich Company.

"1961–The company acquired the Des Moines, Iowa soybean crushing plant from Spencer-Kellogg Co. In 1967, Cargill opened its first domestic salad oil refinery adjacent to this crushing plant.

"1965–Cargill began crushing soybeans overseas at its new plant in Tarragona, Spain.

"1968–The company opened a second overseas crushing plant in Amsterdam, the Netherlands.

"1970–A third seed crushing plant [named Soja-France, with Dominique de Clerq as chairman of the board and general manager] was opened at St. Nazaire, France. A crushing plant at Reus, Spain, also was added in 1970 and Australian cottonseed crushing operations were acquired in 1972.

"1967–The company opened the Gainesville, Georgia, soybean processing plant. A refinery, Cargill's first to produce hydrogenated or "hardened" oil for the Southeastern food manufacturing industry, was built adjacent in 1979.

"1970–Cargill built the Fayetteville, North Carolina, crushing plant and a refinery was added in 1976.

[1971–Soybean crushing plant at Fort Dodge, Iowa, sold to Land O'Lakes.]

"1973–Soybean processing complex began operations at Ponta Grossa, Brazil.

"1975–Acquired plant in Osceola, Arkansas.

1976–Soybean plant was built at Barcelona, Spain.

"1977–Soybean plant constructed and operations began at Brest, France.

"1978–The company opened a soybean processing plant in Sidney, Ohio, to serve domestic meal and oil markets. This facility was the company's first soybean processing plant designed to burn coal as its source of power.

"1980–Construction began on vegetable oil refinery adjacent to Wichita soybean crushing plant and operations started in late 1981. A crushing plant also was acquired in Antwerp, Belgium.

"1981–Company acquired a soybean crushing and vegetable oil refinery complex in Hartsville, South Carolina.

"1982–Cargill acquired a soybean crushing plant in Monte Alto, Brazil.

"Summary. Soybean Crushing: The company now operates soybean processing plants in the United States, the Netherlands, Belgium, France, Spain, Brazil. The plants range in capacity from 20,000 to nearly 120,000 bushels a day. In the U.S., the company operates 15 plants in Iowa, Illinois, Minnesota, Kansas, Virginia, North Carolina, South Carolina, Tennessee, Georgia, Arkansas and Ohio. It operates 6 U.S. refineries located in Gainesville, Georgia; Fayetteville, North Carolina; Des Moines, Iowa; Hartsville, South Carolina; Chicago, Illinois and Wichita, Kansas."

In a cover letter to William Shurtleff, Greg says: "I'd now like to answer the specific questions you posed in your letter:

"1. Ralston Purina is the largest animal feed producer, according to *Feedstuffs* magazine.

"2. Will Cargill is the focus of Cargill's early history because he was the founder and is generally regarded as the most innovative and enterprising, while his brothers' skills in administration and finance served the company well.

"3. Nutrena Mills were headquartered in Kansas City, Kansas, when they were acquired in 1945. While they may have used Cargill soybean meal in their animal feeds, it is highly unlikely because of the transportation costs between Kansas City and the nearest Cargill crushing plants at the time in Ft. Dodge and Washington, Iowa. Nutrena probably had closer sources of supply for meal.

"4. I've addressed the seeming contradictions you mentioned in the attached, edited version of your copy."

Address: Public relations, Cargill, P.O. Box 5625, Minneapolis, Minnesota 55440.

935. **Product Name:** Tofu: Soy Bean Curd.

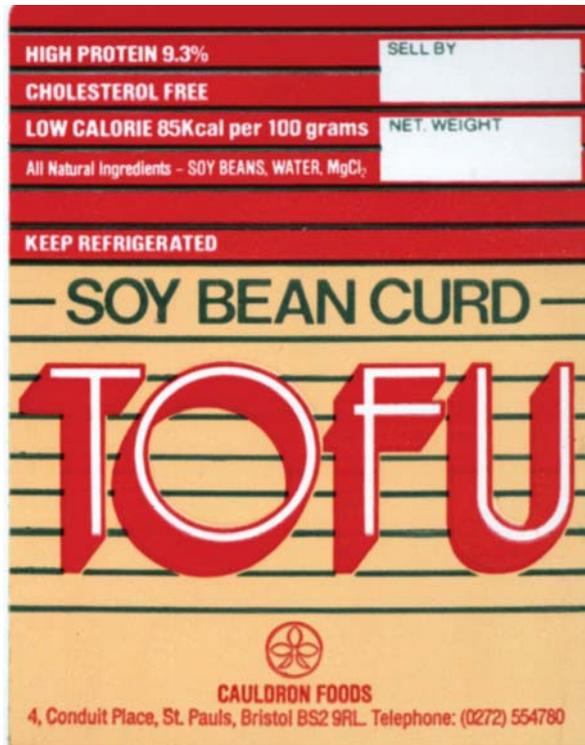
**Manufacturer's Name:** Cauldron Foods Ltd.

**Manufacturer's Address:** Sunny Bank, Chapel Lane, Fish Ponds, Bristol 16, England. Phone: 858-881.

**Date of Introduction:** 1982 March.

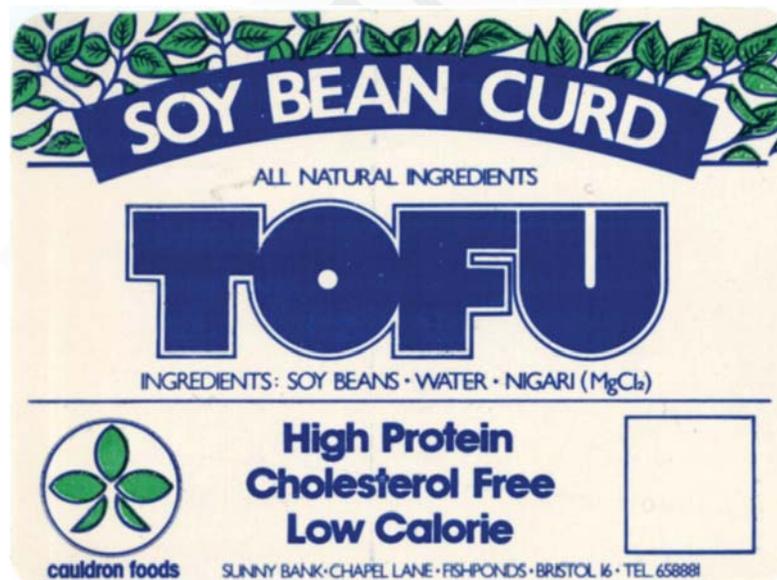
**Ingredients:** Soy beans, water, nigari, magnesium chloride.

**How Stored:** Refrigerated.



**New Product–Documentation:** Soyfoods Center Computerized Mailing List. 1983. June 20. Owners: Philip Marshall and Peter Fagan. Original address: Sunny Bank, Chapel Lane. Later: 4, Conduit Place, Lower Ashley Rd., St. Paul's, Bristol BS2 9RL, England.

Richard Leviton. 1983. Trip to Europe with American Soybean Assoc. Oct/Nov. Unpublished manuscript. p. 26-28. See history of the company. Philip Marshall and Peter Fagan started their partnership in Cauldron Foods in Sept. 1981. Philip was previously a partner with Paul Jones, and at the time he joined with Peter he was already a Bristol tofu



maker selling some tofu in bulk to the converted. They now make 1,200–1,500 lb/week of tofu, all in one day. They are planning to do a fermented tofu spread.

Labels. 1983. 4 by 3 inches. Self adhesive. Blue and green on white. Bean vine drawing. “Soy Bean Curd. All Natural Ingredients. High Protein. Cholesterol Free. Low Calorie.” Label. 1983, undated. 3 by 4 inches. Self adhesive. Red, beige, green, and white. “Soy Bean Curd. High protein 9.3%. Cholesterol Free. Low Calorie 85Kcal per 100 grams. All Natural Ingredients.” Address: 4, Conduit Place, St. Paul's, Bristol, BS2 9RL.

Soya Bluebook. 1985. p. 100. Ad in The Vegan. 1986. Summer. p. 4. “Cooking with tofu? Look for the mark of quality. Tofu and smoked tofu.” Address: 149A South Liberty Lane, Ashton Vale, Bristol, England.

Letter from Neil Robinson. 1989. Aug. 7. The three major tofu products in Britain, as far as I know, are (1) Tofeata Tofu by Haldane Foods (Hera), Leicester, England; (2) Cauldron Foods, Bristol, England; (3) Truehealth Tofu by Birchwood Foods, Wrexham, Wales.

Talk with Philip Marshall, founder. 1990. March 29. Cauldron Foods was founded in 1980 and began to produce tofu in late 1981 in Bristol. This was a pioneer tofu company in England.

Note: This is the earliest record seen (May 2019) in connection with Cauldron Foods Ltd.

936. **Product Name:** The Bristol Nut Burger (Meatless Tofu Burger).

**Manufacturer's Name:** Cauldron Foods Ltd.

**Manufacturer's Address:** Sunny Bank, Chapel Lane, Fish Ponds, Bristol 16, England. Phone: (0272) 554780.

**Date of Introduction:** 1982 March.

**Ingredients:** Tofu, brown rice, textured soy flour, peanuts, shoyu (soybeans, wheat, water, salt), soy oil, salt, hydrolysed vegetable protein, onion extract, citric acid, garlic.

**Wt/Vol., Packaging, Price:** 85 gm.

**How Stored:** Refrigerated.

**New Product–Documentation:** Label. 1983. 5.5 by 7 inches. Plastic. Dark brown, light brown and white. Poster. 1983, undated. 6 by 8 inches. Red and blue on white. “The Bristol Burger Range of Natural Convenience Foods are now available in 3 Varieties. Ready Cooked. Can be eaten Cold or Hot. Low Calorie and High Protein.” Richard Leviton. 1983. Trip to Europe with American Soybean Assoc. Oct/Nov. Unpublished manuscript. p. 26-27. This company was built on the burger, which contains TVP (purchased from British Arkady) to add chewiness.

937. Hannigan, K.J. 1982. Corn/soy-based frozen desserts: Taste & nutrition made to order. *Food Engineering* 54(3):92. March.

• **Summary:** ADM has developed a non-dairy frozen dessert in which butterfat is replaced by hydrogenated soy oil and casein is replaced by soy protein isolate (Ardex F). Three variations with formulas are available containing 10% fat (ice cream type), 4% fat (ice milk), and 2% fat (sherbet). The ingredients are soy oil, soy protein isolate, a 55% fructose 36DE corn syrup, and stabilizer/emulsifier. Various flavors have been developed and the formulas can be modified for higher protein, reduced sweetness, or reduced sodium.

938. Eldridge, Arthur C. 1982. Determination of isoflavones in soybean flours, protein concentrates, and isolates. *J. of Agricultural and Food Chemistry* 30(2):353-55. March/April. [9 ref]

• **Summary:** These commercial soy products have high estrogenic activity. Their total and individual isoflavone content was determined by high-performance liquid chromatography. Dehulled, defatted soybean flours (10 samples) contain the following mean isoflavone content (mg/100 gm): Genistin 119.8, daidzin 61.7, daidzein 32.8, genistein 26.6, glycitein 7-Beta-glucoside 12.9. The total of these numbers is 253.8. The same isoflavones were found in soy protein concentrates and isolates but in decreased amounts.

Preparation of extracts: Ground defatted soybean flour was extracted with several solvents. Refluxing with 80% methanol gave the maximum extraction and most reproducible results.

Of the commercial soy flours used, one was a true soy flour (Nutrisoy 7B, made by ADM), and eight were textured soy flours: TVP (unflavored, ADM), Textratein (Cargill), Centex 300, 300L, 400, and 400 SL (Central Soya Co.), Mira Tex (Staley), and Promote III, SL (Griffith Labs).

The soy protein concentrates tested were: Response (Central Soya Co.), Food protein concentrate (Swift & Co.), Pro Con 2000 (Staley), Promosoy 100 (Central Soya), and GL-301 (Griffith Labs). GL-301 had the highest total isoflavone content (317) and Promosoy 100 had the lowest (16)—a dramatic difference. Those with the highest isoflavone content were prepared by aqueous leaching of defatted soybean flours, whereas those with the lowest content were prepared by extracting hexane-defatted soybean meals with alcohols, which removed some of the isoflavones from the meal.

The soy protein isolates tested were: Edi Pro N, Edi Pro A, Supro 610, 620, and 710 (all made by Ralston Purina Co.). Supro 710 had the highest total isoflavone content (132) and Supro 620 had the lowest (105)—a relatively small difference. Address: Northern Regional Research Center, Peoria, Illinois.

939. *Food Processing (Chicago)*. 1982. Wet curd isolated soy protein has maximum functional attributes: Protein is essentially undenatured. 43(4):38-40. April.

• **Summary:** Contents: Introduction. Applications. Physical and chemical characteristics.

Research efforts on protein have gone through three major phases. Because of a perceived shortage of protein, the first major research efforts were aimed at finding new protein sources. “With realization that most of the developed countries have sufficient protein supplies, studies changed direction to producing proteins of high quality—combinations of proteins were designed to secure more desirable amino acid profiles. In more recent years, the primary goal of protein research efforts has been development of, and/or understanding, improved functional characteristics.” Address: ADM Foods, Box 1470, Decatur, Illinois 62525.

940. **Product Name:** Whole Earth VegeBurger (Dry Mix) [Herb & Vegetable, Chili, No-Salt (Aug.)].

**Manufacturer’s Name:** Yin-Yang Ltd. [Whole Earth]. Renamed The Realeat Company in June 1982.

**Manufacturer’s Address:** London NW10, England.

**Date of Introduction:** 1982 April.

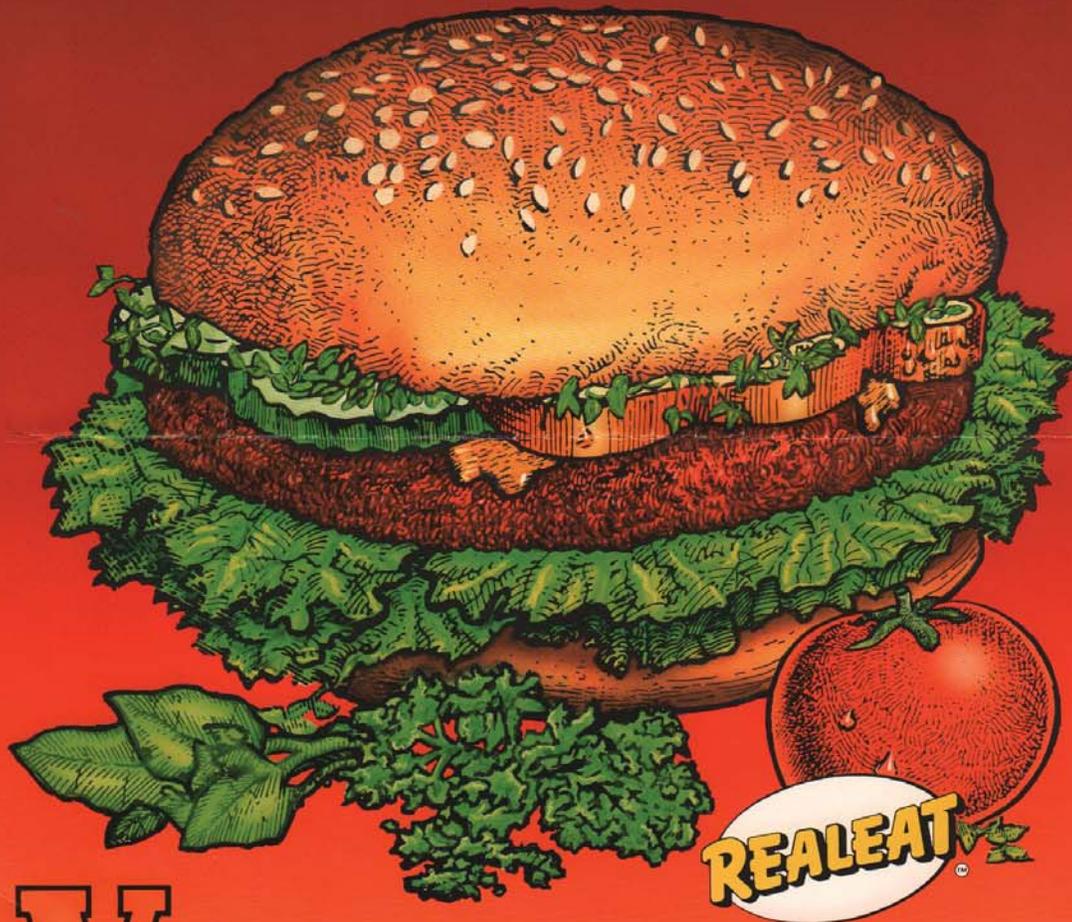
**Ingredients:** 1982: Sesame seeds, rolled oats, wheat gluten, textured soya flour, wholewheat rusk, dehydrated onion, dried mixed vegetables, yeast extract (Seasoning and seasalt vary between the 3 varieties).

**Wt/Vol., Packaging, Price:** 125 gm foil sachet, makes 4 x 70 gm burgers. Retail for 59 pence.

**How Stored:** Shelf stable.



**YOU'LL HAVE NO BEEF  
WITH OUR BURGERS!**



**VEGEBURGER<sup>®</sup>**

**THE SAFE ALTERNATIVE!**

**Nutrition:** Contains more protein, half the fat, and less calories than an average beefburger. Cooked product: Protein 19%, carbohydrate 17%, vegetable fat 6%, dietary fibre 5%, calories 190/100 gm when fried.

**New Product–Documentation:** Dee previous page. Low, Robert. 1983. “And here comes... the VegeBurger.” *Observer (The)* (London). Feb. 27. p. 4. Sunday. This meatless burger, which was created by Gregory Sams, was launched nationally last week.

Leaflet. 1986. VegeBurger. “Realeat made the VegeBurger famous in 1982...” But in other Realeat publications the year of introduction is given as 1983. Note: It was sold locally in 1982, then launched nationally in Feb. 1983. “You just mix it with water and egg (optional), wait for 15 minutes, and shape into burgers for frying.”

Ad in *The Vegetarian*. 1984. May/June. p. 12. “Vege Burger by Realeat. The alternative that works. From health and natural food stores everywhere.”

Letter from Gregory Sams. 1988. March 30. Says the product was introduced in 1982. Leaflet, undated. “A Recipe for success.” Gives detailed product information. “Realeat made the VegeBurger famous in 1982 with the launch of the first all-natural meat alternative that tasted better, cost less, and did you good—with convenience. It proved a powerful combination and paved the way to a new market in meatless foods.”

Talk with Philip Marshall of Cauldron Foods Ltd. 1990. July 9. This is probably the Haldane Food Group’s best-selling soy product. Greg and Craig Sams are brothers, and both American. Philip does not know if they still work with Haldane or if they are retained as consultants. Both are very talented guys, excellent at marketing, and probably made their money quite nicely. One is in a wheelchair, paralyzed from the waist down. In the early days, both were involved with Whole Earth and the early events at Portobello Road. Whole Earth became Harmony Foods, a large health food wholesaling company.

Color photo of package in *Linda McCartney’s Home Cooking*. 1990. p. 18. “Realeat Vege Burger Mix. Herb & Vegetable Style.” The package is orange, yellow, and brown. “All natural—All vegetable.” A large color illustration shows a burger between buns.

Letter (e-mail) from Gregory Sams, originator of the VegeBurger—in response to questions from William Shurtleff. 2007. Feb. 8, 9 and 12. “The initial VegeBurger was launched as a Whole Earth branded product when I was still running Whole Earth, located in London at NW10. That was in April 1982. The VegeBurger was launched in two flavours: Herb & Vegetable, and Chili. A No Salt variety came out in Aug. 1982. The *Official* name of the company was still Yin Yang Ltd. VegeBurger and I went solo as The Realeat Company in June 1982. Whole Earth was in deep financial trouble and our investors and bankers had no faith in the product which I’d created to help save us. I had faith and was

happy to pass the reins over to my brother Craig and to go off and work from home (at 2 Trevelyan Gardens, London, NW10 3JY—where I had been living since Feb. 1980) with my new baby [VegeBurger]. It was our joint rescue plan, and the backers and bankers bought it. It worked for both of us. By early 1983, VegeBurger was a best seller in health food shops throughout the country. The article by Low on the VegeBurger in *The Observer* (London; Feb. 27. p. 4. Sunday) was prompted by my press release, which tied into the launching of the frozen VegeBurger in Feb. 1983. In 1988 The Realeat Company moved from my home to a serviced location at Acorn House in Nearby Acton for six months prior to my sale of the company.” “Yes, those are the original ingredients. The base of the VegeBurger mix was virtually equal parts of the first four ingredients. The secret was the texture obtained from the combination of wheat gluten and soya protein.”

2015 May 31. “The Vegeburger—Gregory’s story.” from [www.chaos-works.com](http://www.chaos-works.com). “The VegeBurger was, actually, prompted by a case of hepatitis that had me house-bound for the last few months of 1981. For the fifteen years prior to that, in conjunction with brother Craig, I had been running various natural foods businesses, each one the first of its kind in the country. It started when I opened Seed Restaurant in 1968 at the age of 19, progressing to CERES natural food store on the Portobello Rd. This then led to the importation, manufacture, and distribution of natural products through Harmony Foods—which evolved into Whole Earth Foods. Publishing and cafes, a bakery and a bookshop, pop festival catering and all sorts were included in the mix over the years. Mom helped cook in the very first days of the restaurant and dad published Seed, the Journal of Organic Living for six years. All of this set the scene for the VegeBurger to be such an instant success. In 1982, I was in charge of Harmony Foods/Whole Earth with my brother Craig doing the marketing. We sold hundreds of tons of natural foods every week but were in dire financial straights. Our equal shares had a negative value, and the investors who owned nearly half of the company were very upset about it all.

“In 1981 I returned from a trip to Colorado’s Rocky Mountains and came down with hepatitis. The only way to cure it was an enforced stay-at-home rest from the frenzy of keeping up with the relentless demands of Harmony Foods. With this enforced ‘free’ time I decided to work on something that could breathe new life into the company, without being a drain on its resources. I wanted something unlike our huge range of grains and beans and seeds and basic products, but still appealing to the same market.

“I had been vegetarian from the age of 10, at a time when I knew of no other vegetarians in any of the subsequent four schools I attended. Having been brought up by a health-conscious mother in a pre McD era, I had never even tried a hamburger. The idea of creating an alternative to the hamburger with an easy-to-make mix appealed to me as

being quite unlike bagging up beans (there will always be somebody who can put a pound of beans in a bag for less than you). I spent about four months experimenting with different ingredients and mixes, working on texture first, and then the vegetables, herbs and seasoning. It was after about three months that I knew I was getting close when my long-suffering wife, Sandy Sams, asked for a second bite of the latest sample forced upon her.

“There was nothing on the market then that provided a natural alternative to the hamburger, and the product needed a name. I wrote out a list one evening of the options, including Plantburger, Sesameburger, Vegeburger, Earthburger and Greenburger. They all sounded strange at the time but after a few days ‘VegeBurger’ came to the fore. As a brand new word, which did not seem descriptive at the time, it was not a problem to register it as the trade mark VegeBurger. Vegetarians were not yet termed Veggies.

“The VegeBurger was launched in March 1982 under the Whole Earth label and much as I extolled its virtues, our bankers and backers were not impressed, pointing out that 90% of all new food product launches fail. I wanted to devote myself to this new ‘baby’ and, by the 18th of June 1982, I had negotiated myself a resignation as Chairman and M.D. of Whole Earth Foods. I gave my shares to brother Craig who gradually developed the company into a solvent Whole Earth Foods and later launched Green & Blacks chocolates with wife Josephine. I set up my dream business, trading as The Realeat Company. It was all managed on my Apple IIe computer from an in-house office conversion, utilizing reliable outside contractors and having no employees. This is now called a “virtual company” and it allowed me to spend my time demonstrating, promoting and marketing. I had no bureaucracy, no fixed overheads, and it was a joy to run this free-flowing enterprise.

“The VegeBurger quickly became a nationwide success, especially boosted by the press coverage it received following release of the first Realeat Survey in 1983, commissioned to tie in with the launch of the frozen VegeBurger. I commissioned Gallup to conduct a poll of public attitudes to meat consumption, getting the first ever vegetarian head-count. It was news, with more of a move away from red meat consumption than anybody had realized. VegeBurger was on television, radio and newspapers to such a degree that, when I wasn’t being interviewed on radio or responding to a press query, all my time was spent keeping retailers stocked with the new hit. The survey brought a huge number of latent vegetarians ‘out of the closet,’ especially young women who realized they were not alone in their aversion to meat.

“The secret of the VegeBurger was simple in retrospect. It had a better flavour than your average beefburger, cost you less, didn’t kill cows, and made you feel a whole lot better—all done with natural ingredients.

“By 1988 things were getting a bit too complicated to

keep on running by the seat of one’s pants. It was clear that I could either get out of the business now while it was all going well, or start wearing suits, and employing them, in order to eventually have loadsa money, while risking it all going down the drain if I screwed it up.

“So I sold the Realeat Company on the 8th August ’88 and left the food industry altogether. One of my most treasured “pay-offs” from all those years is the ability to easily buy healthy organic foods that I once had to import, pack, sometimes manufacture, and always introduce, if I wanted to include them in my own diet—which I did.”

941. Holt, John. 1982. Re: New developments at The Regular Tofu Co. Letter to William Shurtleff at Soyfoods Center, May 1. 1 p. Handwritten, with signature on letterhead.

• **Summary:** “Having used your book to learn how to make tofu, we now have a small business here making about 700 lb/week of tofu and about 2,500 tofu burgers per week. We give our okara to a pig farmer... We sell the tofu vacuum packaged. As yet we don’t have a means of packaging soya milk. It is sold over here in Tetra Briks and is very expensive. We want to expand the business to make larger quantities of tofu (regular and silken if possible) and to sell soymilk more cheaply... At present, our equipment is very similar, I should imagine, to a small Japanese tofu shop. We use nigari.

An accompanying form states that this company started business in Dec. 1981 and now uses 50-100 lb/day of dry soybeans. Address: 75 Chandos St., Leicestershire LE2 1BU, England. Phone: (0533) 549839.

942. Pautz, Jane Abe Cadwell. 1982. Re: Directory of soyfoods manufacturers in Sao Paulo, Brazil, and comments on the availability of these foods. Letter to William Shurtleff at Soyfoods Center, May 29. 3 p. Typed.

• **Summary:** List all known companies in Sao Paulo that make soyfood products. A separate listing is given for each product with the full company name and address. The product categories include: Tofu and tofu products (2 companies). Soymilk (4). Shoyu (3). Sellers of whole dry soybeans (1). Lecithin (1). Soyflour (1; soyflour is available in many stores without a brand name). TSP / TVP (2).

“As you know we have a large Japanese colony here in the country. I am only aware of what is here in Sao Paulo.”

“Soynuts are available in health food stores in small unlabeled packages. I have not seen soy nut butter. Miso (miso) is plentiful. Soy sprouts are sometimes available in open-air markets along with other Japanese products. They aren’t common. Fresh green soybeans [edamamé] are also available at certain times of the year in these markets. Of course there is lots of soy oil. I think that Sanbra [SANBRA] is one of the big producers or sales company of the beans [soybeans]. In some of the health food stores there is a product available called ‘carne de soja’ (literally “soy meat

[textured soy flour]). There is no brand name and I have not experimented with it.”

“I will be working on a book of tofu recipes during this vacation. The publisher wants to publish it yet this year.

“Last year I gave 3 lessons in working with soyfoods at the Nestlé experimental kitchen here in Sao Paulo, and may be working with a new health foods store / restaurant in developing foods. I would like to see them try some typical soy-deli kinds of things. There is a lot of interest here, new stores of ‘produtos naturais’ [natural food products] and vegetarian restaurants are quite popular.” Address: Rua Spinagés 1974 Apto. 61, 01258 Sao Paulo, Brazil.

943. Thornock, Kaylene. 1982. The usability of tofu in schools and colleges. Jack’s Beanstalk, P.O. Box 26615, Salt Lake City, Utah. iii + 102 p. May. No index. 28 cm.

• **Summary:** Contents: About tofu. Acknowledgments. Agreement for research on tofu. Statement of objectives. Research objectives #1-6. Summary of research findings by objectives.

Tofu was served and evaluated by students at Brigham Young University in a number of popular recipes. Generally, the more students knew about tofu, the higher their acceptance level. Tofu was very well accepted in both entrees and dessert items. A cheesecake, in which tofu was substituted for one-third of the cream cheese, was preferred almost 2-to-1 over that without.

Among the recipes tested which contained tofu were: Brownies, burritos, chow mein, chili rellenos, cheesecake, enchiladas, French toast, fruit smoothies, guacamole dip, onion dip, pizza, pumpkin pie, quiche, scrambled tofu, spaghetti sauce, stroganoff, tofu stew, and yakisoba (fried buckwheat noodles).

Cost savings: Ground beef at \$1.39/lb was found to be 74% more expensive than tofu at \$0.80/lb. At 50:50 extension a foodservice operation would save \$29.50 per 100 lb of food product, or 21%. If 600 lb a week was served, this would result in an annual savings of \$9,204 in one entree item. Foodservice directors find this very impressive. Tofu may replace all or part of the following ingredients to realize substantial cost savings: Bleu cheese \$4.60/lb. Mozzarella cheese \$3.60. Cream cheese \$2.95. Round steak \$2.15. Beef sirloin roast \$1.79. Ground beef \$1.39. American cheese \$1.29. Tofu \$0.80. Other economical substitutions are for mayonnaise, salad dressing, cottage cheese, sour cream, ice cream, eggs, chicken, sausage, pork. Note that TVP (textured soy flour) is now widely used by foodservice institutions in tacos and to some extent in hamburgers.

Nutritional value: Tofu is a star, being free of cholesterol, low in total fats and saturated fats, very low in calories, and free of salt... in addition to being an excellent source of high-quality protein.

Acceptability: Jack’s Beanstalk (a tofu manufacturer in Salt Lake City, Utah) introduced a 50-50 mixture of tofu

and ground beef under the catchy name of “Burgerlite” in college food lines. “Where tofu content has been 25-50% and all recipes tested have been in a form familiar to the college students (i.e. meat loaf, tacos, spaghetti sauce, etc.), acceptability has been equal to that of products not containing tofu.” The more education and exposure people have concerning tofu, the more their general level of acceptance increases. The more accurate information they have, the less they fear change. To boost acceptability, two things are important: educate frontline foodservice employees and give general (or, even better, specific) recommendations for using tofu. In addition, develop a general strategy for introducing tofu as a new food to students, much as you would launch any new product. For example, prepare a campaign slogan: “Tofu, the new and upcoming food of the future is coming your way.” Tofu seems to work best in desserts, entrees, salads and dressings, sauces, soups, and beverages. Try to develop recipes to yield at least 75 to 100 portions.

944. Nave, Robert W. 1982. Re: History of work with soyfoods and soybeans at SPRA in India. Letter to William Shurtleff at Soyfoods Center, June 5. 7 p. Typed (single spaced), with signature on letterhead.

• **Summary:** Gives details of his pioneering work, starting in 1968 when he was working at the Nave Technical Institute, Shahjahanpur, UP, India. In March 1970 Nave visited Joe Wenger and his plant in Sabetha, Kansas. He was impressed and the Wenger company then offered to give him the machinery (a Wenger X-25 extruder) necessary to set up a pilot project making extruded soy flour in India. During 1970 USAID in Delhi and the G.B. Pant University joined the proposed project. “From 1970 to late 1971 or early 1972 the project operated as NTI Soya Products. It was set up as a Part of Nave Technical Institute. After the University became a partner, the name was changed to Soya Production & Research Association. The association has been set up as a charitable company...”

“SPRA produced Nutri Nugget (TVP), Protesnac (a soya-rice spiced snack), Protein Plus (a corn-soya weaning food), Nutriahar (a wheat-soya–fullfat [full-fat]–weaning food) and extruded fullfat soya flour. SPRA has not produced soymilk, tofu, etc. except on an experimental basis.”

SPRA started building a factory in March 1971 at Bereilly. In July 1972 SPRA produced 40 tons of corn-soy weaning food for some feeding trials to be conducted by USAID in Madras state. Nutri Nugget (TVP) was the company’s first product; the defatted soybean meal was originally purchased from Prag Ice & Oil Mills, and then from General Foods of Indore (owned by the Sahara brothers). In 1978 the company began having problems with its factory manager (George Grundy) and with production. Grundy and an electrical contractor, Kalim, had been approached by the Sahara brothers to build an extruder for

them and set up a competing factory. “Grundy and Kalim then took our machinery apart on the pretext of maintenance and copied it, mostly at SPRA expense.”

“Nutrela is produced by Ruchi. Ruchi is the name of one of Kailash Shahra’s daughters after whom the company is named. The first extruder they used in this plant is the one made by Grundy as explained above. Unfortunately and in spite of their large media campaign their impact has been negative. They have gone so far as to provide retailers with new packages into which to fill the contents of the outdated packages which did not sell. Because they have little or no quality control, neither Meal Maker nor Nutrela sell well in the markets where Nutri Nugget is available. Both took the wordings used on their boxes and in their ads almost verbatim from the Nutri Nugget boxes and ads...”

“Dr. Al Nelson was the key figure in setting up the soybean utilization lab at Pantnagar. Dr. Surjan Singh was head of the department of Food Science and Technology and in charge of the utilization lab. Both were key people in the University’s roll in working with us when we were setting up the SPRA—although it had already existed for almost a year at NTI Soya Products.

“As far as I know, no one is extracting soy oil by expellers. All is being extracted by solvent. In Nagpur, someone who had been in the states for some time set up a soy milk project which has local distribution and was a private commercial effort...”

“The government figures on soybean cultivation are not accurate. It is less than they say—largely because certain agricultural officers pad figures in order to make their efforts look better. However, cultivation is on the increase and will increase even faster when the market becomes adequately developed to assure sale of the crop.

“Almost as long as I can remember, it has been possible to get tofu in various foods in Chinese restaurants in India. I assume the Chinese were making this for their own limited use but did not try to market it outside.

“I have heard of soy flour being used in idli but think it is very limited if at all. Defatted soy flour and soybeans just aren’t available in most places. I have never seen defatted soya flour on sale in retail stores anywhere. If it is now available, it has come very recently...”

“TVP is the major soy food product in India. I imagine the total production of this is not much more than 200 tons per month at present but that this is more restricted by ability to produce than lack of market.

“I think the first solvent extraction of soy oil was in about 1969 or 1970.

“When I was in India last April 1982, the milk production at Pantnagar was closed and Sipso was not doing well. In both cases it seemed to be more because of management problems than anything else. The product was good. I have no knowledge of the Jabalpur plant.

“Possibly 50% of the people in India would eat eggs,

meat, fish or poultry if they could afford them. Perhaps 20% eat these regularly. There is a great market for soy foods in India and it will grow at an increasingly rapid rate until India is one of the biggest users of soy foods in the world. It is a natural for soya foods if they are produced in a way that suits Indian tastes and conditions.”

Attached is a 3-page news release (undated) about: (1) Dr. Vivian Erasmus, a native of India and general manager of SPRA in Bareilly, Uttar Pradesh, who will be in Minnesota from June 24 to July 13. A full-page biography is given. (2) SPRA in India; it is an association of the Methodist Church in India through the Nave Technical Institute (80% shares) and the G.B. Pant University of Agriculture (20% shares). The Methodist Church in India is affiliated to the United Methodist Church of the U.S. “All surplus earnings of the association are use to support charitable projects.” The “main impact of SPRA has been in private homes through distribution and sales of its products in retail outlets. It now has nation-wide distribution. Its products include textured soy protein under the name of Nutri Nugget, a soy rice snack, a wheat soy weaning food and full-fat soy flour. Due to the pioneering work of SPRA, soybean based foods are now well established in India.” Address: Compatible Technology, Inc., 7600 Harold Ave., Minneapolis, Minnesota 55427. Phone: (612) 545-0378.

945. Shurtleff, William; Aoyagi, Akiko. 1982. Soyfoods industry: directory and databook. 2nd ed. Lafayette, California: Soyfoods Center. 56 p. June. 28 cm. [24 ref]

• **Summary:** A detailed study of the rapidly emerging soyfoods industry and market. Contains original statistics compiled by the Soyfoods Center through interviews with companies. Contents: 1. Terminology: The many types of soyfoods. I. Traditional low-technology soyfoods. 1A—Nonfermented soyfoods: Fresh green soybeans, whole dry soybeans, soynuts and soynut butter, soy sprouts, whole soy flour & grits, roasted soy flour [kinako] & soy coffee, soymilk and dairylike soymilk products, tofu (eight types), okara or soy pulp, yuba.

1B—Fermented soyfoods: Tempeh, miso, soy sauce, shoyu & tamari, natto & thua-nao, fermented tofu & soymilk, soy nuggets [fermented black soybeans] (Hamanatto & tou-ch’ih).

II. Modern soy protein foods: Defatted soy flour, grits & flakes, soy protein concentrates, textured soy protein products, soy protein isolates.

III. Soy oil products: Soy salad oil & cooking oil, soy oil margarine & shortening, soy lecithin.

2. Soyfoods industry directory: Names and addresses of over 850 soyfoods manufacturers in the Western world, plus major soymilk, miso, shoyu, and yuba manufacturers in East Asia. 3. Analysis of the soyfoods industry in the U.S.

4. Trends in U.S. and world soybean production: Graph of world soybean production (1922-1979) including graphs

for the world total, USA, Asia total, and Latin America. Graph of U.S. soybean production, yields, and exports (1924-1979).

5. Analysis of the tofu industry in the West: The U.S. tofu market: overview and outlook. Graph of the number of tofu (and tempeh) manufacturers in the West from 1975 to 1982. Four-year analysis of the tofu industry in the West. Listing of North America's largest tofu manufacturers and their weekly tofu output. Japan's largest tofu manufacturers and their daily output. Favorite tofu, soymilk, and tempeh recipes as served at U.S. soyfoods, delis, cafes, and restaurants, or marketed as ready-to-serve products. Books on tofu published in America.

6. Analysis of the tempeh industry in the West: Graph of number of tempeh manufacturers. Recipes. Listing of North America's largest tempeh manufacturers and their weekly output.

7. Analysis of the worldwide soymilk industry: Analysis of the soymilk industry in the United States. Analysis of the soymilk industry in Japan. Major Japanese soymilk companies and their products.

8. Analysis of the soy sauce / shoyu and miso industries worldwide. Statistics on fermented soyfoods in East Asia. The soy sauce market in the United States (1981). U.S. imports of soy sauce. Graph (1947-1981. Source: U.S. General Imports, Schedule A. Commodity by Country. U.S. Dept. of Commerce, Bureau of Census). U.S. imports of soy sauce. Table (1947-1981. Source: U.S. General Imports, etc. See above). The shoyu / soy sauce market in Japan. Graph. (1886-1980. Includes: Number of manufacturers. Per capita consumption. Shoyu production. Kikkoman's market share (%)). The miso market in Japan. Graph. (1930-1980. Includes: Per capita consumption. Total miso production. Factory production. Number of manufacturers. Home production. Amount of soybeans used). Overview of the miso market in the United States. Miso exports from Japan (1981). Japan's ten largest miso manufacturers and their output.

9. Other: Analysis of the soynuts industry in the U.S. North America's larger soyfoods delis, cafes & restaurants. The soybean crushing industry; overview.

10. Soyfoods terminology and standards (Glossary of soyfoods terms): I. Traditional nonfermented soyfoods: Fresh green soybeans, okara, roasted soy flour (soy coffee, soy chocolate), soybeans, soymilk (soymilk ice cream, soymilk soft serve, frozen soymilk yogurt, soymilk mayonnaise, soy shakes, soy nog, soymilk whipped cream), soynuts, soy sprouts, tofu (regular tofu, deep-fried tofu {deep-fried tofu cutlets called nama-age or atsu-age in Japan, deep-fried tofu burgers or burger balls, called ganmodoki or hiryoze in Japan, deep fried tofu pouches (called aburage in Japan; the words "deep-fried" may be dropped from the names after the initial usage, and in recipes or on package labels, if desired}), silken tofu {made without separation of curds

and whey, called kinugoshi in Japan; modern types, all made with glucono delta-lactone as coagulant, and all known in Japanese as juten-dofu, are packaged lactone silken tofu, bagged lactone silken tofu (fukuro-dofu), sealed lactone silken tofu (buro-dofu), and Ever-Fresh Lactone Silken Tofu (in Tetra-Pak}), grilled tofu, frozen and dried-frozen tofu. (Note 1. It is illegal to describe the latter product as "freeze-dried tofu," since freeze-drying is a completely different process), terms associated with making tofu {fresh soy puree, a coagulant or curdling agent, forming box, filter bag or pressing sack, tofu comes in cakes, not blocks}), whole soy flour, flakes and grits, yuba.

II. Traditional fermented soyfoods: Fermented soymilk products (soymilk yogurt {Soy Yogurt, Soyogurt, Soygurt}, acidophilus soymilk, soymilk kefir, viili, piima, buttermilk {Soy Kefir, etc.}), fermented tofu (wine-fermented tofu, brine-fermented tofu), miso (rice miso, barley miso, soybean miso, Chinese soybean chiang), natto (thua-nao from Thailand and kinema from Nepal; all are non-salted), fermented black soybeans [fermented black soybeans] (Chinese fermented black soybeans know as shih, tou-ch'ih, tou-shih, or dow-si; savory fermented black soybeans called Hamanatto in Japan, Daitokuji fermented black soybeans called Daitokuji natto in Japan, Philippine fermented black soybeans called tausi or tao-si in the Philippines, Indonesian soy nugget paste called tauco, formerly spelled tao-tjo, Malaysian soy nugget sauce called tao-si), soy sauce (shoyu). The five basic types of Japanese shoyu are: regular shoyu called koikuchi shoyu in Japanese, light-colored shoyu called usukuchi shoyu, tamari shoyu, clear shoyu called shiro shoyu, and rich shoyu called saishikomi shoyu), tempeh, other fermented soyfoods.

Note 2. This is the earliest document seen (Sept. 2012) that uses the word "Soygurt" to refer to soy yogurt.

III. Soy oil and modern soy protein foods: soy oil, defatted soy flour, flakes and grits, soy protein concentrate, soy protein isolate, textured soy protein products (TSP, TVP is a registered trademark of the Archer Daniels Midland Company and cannot be used as a generic name for this product), meat analogs (foods typically made from spun soy protein fibers to resemble meat, fish, or poultry products).

11. Names of soyfoods around the world: Names of 40 products. Brazilian / Portuguese names. British English names. Chinese names (fermented tofu is Toufu-ju or Sufu). French names. German names. Japanese names. Spanish names.

12. Key institutions working with soyfoods in the West: The Soyfoods Center, Soyfoods Association of North America, INTSOY, American Soybean Association, Bean Machines, Inc., Soycrafters Apprenticeship Program, USDA Northern Regional Research Center, Sojaquelle.

About The Soyfoods Center.

Note 3. This is the 2nd market study published by Shurtleff. Address: Soyfoods Center, P.O. Box 234,

Lafayette, California 94549.

946. *Soyanews (Sri Lanka)*. 1982. New instant soyafood. 4(10):1. June.

• **Summary:** “The Cereal Products Factory in Kundasale is now marketing soya flakes. Soya flakes are made by boiling dehulled whole beans and passing them through a roller to flatten them wafer thin. The flaked beans are then artificially dried.” In this form they need no further cooking. They work well in instant dhal. “Soya flakes are marketed at Rs. 16/ a kilo (wholesale price). At this price it is virtually a give-away when compared with the prices for the imported Textured Vegetable Protein now on sale at prices ranging from Rs. 55/ a kilo to Rs. 86/- a kilo.

“The TVP, however, is chewy and more meatlike while the soya flakes come closer to the texture of dhal. The soya flakes retain nearly all the protein (43%) and fat (20%) in the whole bean while the TVP, which is made from defatted [soyabean] meal contains around 52% protein.”

947. **Product Name:** Ardex (Soy Protein Isolates) [DHV, D, F, SP-6, or R].

**Manufacturer’s Name:** Archer Daniels Midland Co.

**Manufacturer’s Address:** 4666 Faries Parkway, Decatur, IL 62526.

**Date of Introduction:** 1982 July.

**How Stored:** Shelf stable.

**New Product–Documentation:** Manufacturer’s catalog, ADM Foods/Protein Specialties. 1981. *ADM edible products/81*. The section titled “Proteins” (p. 19) describes these four types of “Ardex isolated soy proteins: Isolated Soy Proteins have the specific functions of imparting to products the added value of nutrition and replacing costly ingredients that are either diminishing in availability or expanding in cost. Many times both.

“An isolate also functions to control the quality in the production process. It allows for production variables, where the ingredients it replaces probably won’t.

“The result is a more quality consistent product. Consequently, many food producers use isolates in combination with their present formulations to increase product consistency as well as reduce ingredient costs.”

Manufacturer’s catalog. 1982. Feb. “Soy beverage concepts using Ardex isolated soy proteins.” Ardex F and Ardex SP-6 are recommended for making milk-like beverages. Ardex R with pH properly adjusted can also be used. The ingredient cost of 8 oz. of whole milk is 8.6 cents, compared with 3.2 cents for unflavored soy beverage, 3.7 cents for chocolate soy beverage, and 8.3 cents for soy fortified milk. Ingredients in the unflavored soy beverage are Ardex F 3.62% (dry weight basis), ADM 468 partially hydrogenated soy oil 2%, Cornsweet 42 (fructose) 8%, emulsifier 0.25%, salt 0.08%, and stabilizer 0.02%. Total solids are 13.97%, protein 3.47%, fat 2%, and calories 67.7

per 100 gm.

*Soyfoods*. 1982. Summer. p. 7-8. Ardex F is a highly dispersible isolate that can replace nonfat milk solids.

Soya Bluebook. 1982. p. 64. No brand names given. Note: This is the first time that ADM has appeared in the Soya Bluebook as a maker of edible soy protein isolates. Soya Bluebook. 1983. p. 64. No brand names given.

Manufacturer’s catalog. 1987. DHV is salt tolerant, non-dusting, highly dispersible. D is adhesive, emulsifier & emulsion stabilizing. F and SP-6 are non-gelling, readily dispersible. RH is isoelectric pH isolate.

948. Mandoe, Bonnie. 1982. Soy power. Part III. Soybeans, soy grits, and TVP. *Bestways*. July. p. 96, 98.

• **Summary:** Discusses and gives recipes for whole soybeans, soyburgers, soy sandwich spread, soynut butter, soy-grit wheat bread, TVP moussaka, and TVP stuffing (for tomatoes, green peppers, or zucchini). “The more I study and use soybeans the more impressed I am with these versatile, high-protein legumes. It’s no exaggeration to say that there are hundreds of ways to use them.”

949. **Product Name:** California Meatless Chili.

**Manufacturer’s Name:** Meatless Foods, Inc.

**Manufacturer’s Address:** Hollywood, California.

**Date of Introduction:** 1982 July.

**Ingredients:** Red kidney beans, textured vegetable protein [soy flour], onions, tomatoes, herbs, shoyu, honey.

**Wt/Vol., Packaging, Price:** 1.5 lb in plastic tub with preprinted film lid.

**How Stored:** Frozen.

**Nutrition:** 8 oz. contains 417 calories and 30% of the protein RDA.

**New Product–Documentation:** Spot in *Soyfoods*. 1982. Summer. p. 56. “Vegetarian Chili with TVP.”

950. **Product Name:** Hera Meatless [Hamburgers, Croquettes, Goulash Mix, Chili Mix, Stroganoff Mix, Goulash, Tomato Soup, Vegetable Soup].

**Manufacturer’s Name:** Pharma Food (Distributor). Made in England by Haldane Foods Ltd.

**Manufacturer’s Address:** Netherlands.

**Date of Introduction:** 1982 July.

**New Product–Documentation:** Food Report (Lehmann). 1982. July. The hamburgers and croquettes in 200 gm cartons retail for Hfl. 5.95. The goulash mix, chili, and stroganoff also in 200 gm boxes for Hfl. 2.95. The goulash, tomato and farmers vegetable soup in 125 gm packs, sufficient for making 1 liter of soup, at Hfl. 2.85.

951. *Soyfoods*. 1982. ADM’s soy miracle premiers on national TV. Summer. p. 51, 53.

• **Summary:** Slogans for three TVP television ads are “Quality,” “Experience,” and “Acceptance.” “Over 200

# ADM'S SOY MIRACLE PREMIERS on NATIONAL TV

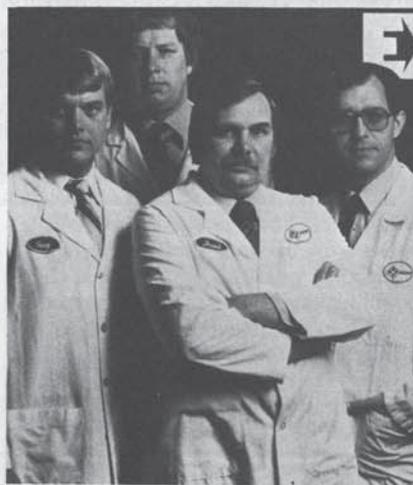


## QUALITY

There is no substitute for quality ingredients. And that's as true when you're using TVP® and other soy protein products as it is with any other ingredient. Note that we said ingredient, because properly utilized, that's what soy protein is. It's a functional, high-quality source of protein that lets you maintain your profit margins. And we have a staff that will show you how you can use soy protein in conjunction with other ingredients to maintain present quality standards for your product.

We've already developed over 350 different formulations of TVP for our customers over the years. And if one of those formulations isn't just what you need, we'll work with you to develop a new one. You may have your own reasons for not having used soy proteins in your products up until now. But lack of product quality isn't one of those reasons. For more information on ADM soy protein products, write or call ADM Foods, Protein Specialties, Box 1470, Decatur, Illinois 62525, (800) 637-5630. A Division of Archer Daniels Midland Company.

ADM FOODS  
ADM



## EXPERIENCE

Our competitors buy the same systems we use. They can even buy the same machinery to produce it. But one thing they can't buy is ADM's wealth of experience in applying soy protein technology to processed foods. Back in 1970, not fewer than ten other companies had to look only to extrude textured vegetable protein. But only ADM made the commitment to build large-scale plants to turn out the product. We did this, because we believe in the product. Today, using soy protein is accepted practice as an ideal method of protecting profit margins.

But you naturally want to do all this while assuring yourself that you'll maintain your product quality. And the answer here is to rely on our staff of expert technologists. Our facilities include a meat lab with the capability of doing everything from product reformulations to food preservation innovations. And with our experienced staff, we'll show you how you can incorporate soy protein into your existing systems, resulting in an ideal product that has excellent sensory qualities. Finally, if one of our 350 formulations of TVP isn't just what you need, we'll be happy to produce a new one for you. For more information, call or write ADM Foods Protein Specialties, P.O. Box 1470, Decatur, Illinois 62525, (800) 637-5630. A Division of Archer Daniels Midland.

ADM FOODS  
ADM



## ACCEPTANCE

Not every food processor has accepted the use of TVP textured vegetable protein for processed foods. Which is too bad, because the public already has. Fact: Consumers have been eating pizza with a combination meat/TVP topping for ten years, with nary a complaint. And Americans have also been happily consuming bacon bits, chili, stews, soups, tamales, enchiladas, TV dinners, and entrees containing TVP. Altogether, over 200 million pounds of TVP have been used in over one thousand different consumer products. The lesson is this: The public is more willing to accept TVP in food products than you realize.

The key, of course, is to incorporate TVP properly. And we have the staff to show you ways of utilizing it in your products. And I'll show you how you can protect your profit margins without sacrificing one bit of quality. We've got over 350 different types of TVP, many of which were created for a specific client need. And if one of these isn't just what you need, we'll be happy to come up with a new one. Consumer acceptance is just one part of the ADM TVP story. For more information, just call or write ADM Foods, Protein Specialties, P.O. Box 1470, Decatur, Illinois 62525, (800) 637-5630. A Division of Archer Daniels Midland Company.

ADM FOODS  
ADM

million lb of TVP have been used to date in over 1,000 different consumer products."

"Malthus said it would take a miracle to feed the world. Here it is—the soybean. Thus ran a nationally placed two page advertisement for soy protein during 1981 sponsored by the Archer-Daniels-Midland Company (known as ADM), a multifaceted Midwest grain processing firm with annual sales of \$3.6 billion. The ad, which portrays a soybean and its protein, oil and lecithin components, is only a part of ADM's overall image-building campaign for soy protein, a campaign that recently ventured into national network television advertising.

"ADM's 1981 print campaign featured at least three full color double page spreads in various influential food industry magazines including horizontal publications (that reach a wide cross-section of food and beverage industry executives) such as *Food Engineering*, *Food Development*, *Processed Prepared Foods*, *Cereal Foods World*, and *National Provisioner*. Vertical publications (that target special interest groups) such as *Meat Processing* and *Meat Industry* were used because the application of soy protein ingredients in meats represent ADM's largest market for its soy line.

The ads, reproduced here, stress 'Quality, Experience, Acceptance.' ADM's branded TVP (textured vegetable protein), which comes in 350 different formulations, is positioned as a quality ingredient, 'a functional, high quality source of protein that lets you maintain your profit margins.'

"In 'Acceptance' ADM admonishes the food industry for being reluctant in trying TVP because 'the public is more willing to accept TVP in food products than you realize.' Consumers, the reader is told, have enjoyed pizza with a combination of meat and TVP toppings for 10 years.

"Americans have also been happily consuming bacon bits, chili, stews, soups, tamales, enchiladas, TV dinners: and entrees containing TVP.' Over 200 million pounds of TVP, the ad states, have been used to date in over 1000 different

consumer products.

“The ‘Experience’ ad completes their message by stressing ADM’s ‘wealth of experience in applying soy technology to processed foods,’ and the concept of incorporating soy protein within existing food products. TVP is positioned as a food ingredient useful in protecting profit margins in meats.

“ADM’s 1982 print ad plans call for a retrenchment because of the depressed economy: ADM will promote its larger corporate image rather than its specific products such as corn sweeteners, soy concentrates, and soy flour (ADM happens to be the world’s second largest producer of high fructose corn sweeteners and the largest of soy flour).

“In August 1980 ADM planners ventured into national television advertising when they purchased a 25% sponsorship of NBC’s ‘Meet The Press,’ aired on Sunday mornings. Thirteen weeks later they increased their involvement to 50%, sharing the sponsorship with United Technologies of Connecticut.

“Pleased with their initial foray into television, ADM next bought a partial sponsorship, in January 1982, of ABC’s ‘This Week with David Brinkley,’ also on Sunday morning and immediately following NBC’s program. The ads are image-oriented, designed to increase public awareness of ADM as a company and are not intended as marketing tools for specific consumer products.

“Of the ads themselves, ‘Solar Protein’ focuses on the soybean, how it captures sunlight and converts it to protein, how soybeans can help feed a hungry world through products such as wheat-soy flour blends and textured vegetable proteins (used as meat supplements or main entrees). ‘Pioneering’ reviews ADM’s research with margarine, fructose, and TVP, while ‘Blended Foods’ speaks of ‘America’s agricultural abundance’—corn, wheat, soybeans—and ADM’s work to make nutritious foods from them to help curb world hunger.

“The two Sunday news programs were carefully selected, notes ADM’s advertising account executive Gerald Kleckner, of Martin Williams Inc., in Minneapolis, because they represent ‘the highest demographic available on TV.’ Some 80% of the viewing audience, Kleckner states, is in the \$30,000-plus income bracket. ‘Meet The Press’ reaches 5.1 million households, while Brinkley’s show captures another 4.4 million, and both Sunday morning programs—selected also for their highly educational, political, topical formats and world famous personalities—reach 9.5 million American households.

“It’s not surprising that ADM would be the first soy protein company to begin national television advertising. ADM has been an innovator since their founding back in May 1923 when the Archer-Daniels Linseed Company merged with Midland Linseed Products to become the world’s largest linseed oil producer. In 1929 ADM moved into soybean processing and by the 1930s had installed

one of America’s first solvent extraction plants to process soybean oil. In 1934 ADM branched out into lecithin, again a first, and, in 1939, they established their present massive plant in Decatur, Illinois, that handles 4000 tons of soybeans daily. The 1950s saw them involved with soy isolates. In 1965 ADM pioneered the texturizing of soy protein with their patented TVP product line.

“ADM, ‘using America’s abundance to meet the world’s needs,’ is also involved with soy flour milling, corn sweeteners, soybean oil, gasohol, soy concentrates, and hydroponics. As head of the world’s second largest soybean processing company, it is little wonder that ADM’s Chairman would be lauded by *Fortune* magazine: ‘No individual has made a greater success of processing and merchandising the pale yellow bean than Dwayne Andreas.’”

952. *Soyfoods*. 1982. Soy isolates: New tofu ingredient? [ADM Foods]. Summer. p. 7-8.

• **Summary:** “ADM Food’s search for new applications for its high protein soy isolates have led them to frozen soymilk dessert, a flavored soymilk beverage, imitation cheeses, and, most recently, silken tofu.

“ADM, one of the nation’s largest soy isolate producers, located in Decatur, Illinois, has been devoting considerable research effort to find new product applications for its basic soy ingredient, isolated soy protein. Initial commercial interest in isolates (which contain 90% protein, as most of the carbohydrates have been removed) began in the 1930s when they had industrial uses such as paper coatings. But by 1967, at least 22 million pounds were produced, and by 1981, annual production was estimated at 90 million pounds as isolates were used in numerous foods.

“Soy isolate production begins with defatted soybean flakes, from which protein is extracted, in an aqueous solution, from the insoluble residue with the aid of screens or centrifuges. The ‘soy curd’ is precipitated at the isoelectric point (pH 4.5, where the solubility of the protein is at a minimum) using a food grade acid such as acetic or phosphoric. The curds and whey are separated by centrifuging, the curds are washed, then neutralized with food grade alkali. Finally the isolate is spray-dried for storage.

“Recently ADM Foods announced the development of a ‘wet’ curd isolated soy protein” that has maximum functional properties. The curd is suitable for interaction with milk, whey, and egg proteins in foods. The wet curd can be used as a partial replacement (up to 50%) for casein (a milk-derived protein) in imitation mozzarella cheeses, and as a coffee whitener that will not coagulate after immersion in the hot liquid. The soy isolate slurry is not heat denatured, has a pH of 4.5, solids content of 23%, is easily pumped, can be delivered in stainless steel tanks of 45,000 pounds capacity, and is stable for two days at room temperature.

“At first glance, soy isolates may seem a world away

from everyday tofuming, yet this year ADM researchers began experimenting with their Ardex isolated soy protein for a silken tofulike product and even custom designed yogurt type desserts. A soy beverage base, made from soy isolate, is heated to 80°C; then 1% (by weight) glucono-delta-lactone (GDL) is added. After 20 minutes the milk has set to a yogurt-style smooth consistency. To make a 'firmer' silken tofu, ADM scientists added (5% by weight) kappa-carrageenan and 0.5% tetrapotassium phosphate to the beverage before heating.

"This method, ADM researchers suggest, greatly simplifies the tofuming process while providing significant cost reductions. 'These products can be formulated to achieve up to 80% ingredient cost reductions compared to conventional tofu,' their report states. The use of soy isolates also allows for the extension of several dairy systems using soy such as puddings, sour cream, yogurt, baby food, and frozen desserts.

"ADM Foods has experimented with three processing methods for preparing a soymilk beverage including batch pasteurization, high temperature, short time pasteurization, and ultra high temperature (UHT) for aseptic packaging.

"For the batch method, water at 50-55°C is agitated while the soy isolate powder is mixed in, followed by corn sweetener (fructose) and vegetable oil. The mix is heated to 60°C and held for 30 minutes with constant agitation.

"Next comes a two stage hot homogenization (at 2500 psi, then 500 psi) followed by immediate cooling to 5°C. Flavorings are added and the product is packaged for storage. The ingredient cost per 8 fluid ounce serving for unflavored soy beverage is \$0.032 compared to \$0.086 for whole milk. The cost per pound of protein served is \$1.701 compared to milk's \$4.938. The soy beverage's nutritional profile includes 3.47% protein, 2.00% fat, total solids 13.97%, and 67.70 calories per 100 grams.

"The soy isolate has been applied in making frozen soymilk ice creams that yield protein contents twice the level of those in standard ice creams. With the isolate-based desserts, as the fat content is reduced, the caloric density is also reduced, so that a 4% fat soy dessert has about 20% less calories than standard ice cream, while a 2% fat dessert has nearly 30% fewer calories. The ingredients include Ardex soy isolate, sucrose, CornSweet (corn sweetener), corn syrup, stabilizer, emulsifier, while the ingredient cost is \$0.017 compared to \$0.048 for standard ice cream—a savings of 64.6%. Nutritionally, the product is comparable to standard ice creams, with 1.8% protein, 2.00% fat, 142.50 calories per 100 grams, and 117 calories per 4 fluid ounce serving.

"ADM representatives provided samples of their strawberry soymilk dessert along with chocolate and unflavored (but sweetened) soymilk beverage at the recent U.S. International Food Show in New York City."

953. *Food Engineering*. 1982. Ingredients report: soy

protein. 54(8):107-08, 110.

• **Summary:** "Soy protein suppliers exhibiting at Food Expo '82 mainly stressed functionality by demonstrating new applications for existing products.

Grain Processing Corp. showed its 21-product lineup of ProFam soy protein isolates.

Central Soya Co. demonstrated the rapid hydration characteristics of its Response 4400 line of "structured soy protein concentrates."

A.E. Staley Mfg. Co. demonstrated its broad line of soy protein products featuring Procon 7241 textured soy protein concentrate and its StaPro 3000 soy protein concentrate.

Gunther showed its "D-Series" of whipping proteins.

ADM demonstrated Ardex isolated soy protein sweetened with CornSweet 42 high-fructose corn syrup. Ardex F can also be used to fortify milk.

Also mentions Cargill, Lucas Meyer America, San-J, and Kikkoman International.

954. Vinall, Geo. H. 1982. The processing and marketing of oil seeds in Ontario. *Notes on Agriculture (Guelph, Ontario)* 18(1):24-27. Aug.

• **Summary:** Begins with the early history of Canadian Vegetable Oil Processing (CVOP, the writer's company) in Hamilton, Ontario. Oilseed processing in Ontario started during World War II.

Note: Documents show that six companies started crushing soybeans to make oil and meal before 1940: (1) 1930 March-Milton Oil Refineries, Ltd., Milton. (2) 1932-Dominion Linseed Oil Co., Baden. (3) 1932-The Soya Bean Oil and Meal Co-operative Company of Canada Ltd., Chatham. (4) 1936-Edgar Soya Products, Ltd., Belle River. (5) 1936-Soya Mills Ltd., Stratford. (6) 1938-Toronto Elevators Ltd., Toronto.

From 1940 to 1942 Canada was finding it difficult to obtain enough vegetable oil to satisfy growing domestic demand. A good supply of ground nuts [peanuts] was located in India, Canada's war-time government then negotiated with an Australian (Sir Walter Carpenter) to move a small expeller (oil seed) processing plant from British Columbia to Ontario. In 1942 this plant, which had been processing copra (coconut) on a Vancouver dock side, was moved to the Hamilton harbour waterfront. Canada's federal government then arranged to have thousands of tons of peanuts (in jute bags) delivered to Hamilton for processing. From 1943 to 1948 peanut deliveries were intermittent and this other oilseeds such as sunflowers, flax, palm kernel and copra were crushed in Hamilton. After the war, the Hamilton plant began looking for a more local source of oilseeds and in 1948 began crushing American-grown soybeans.

"G.S. Boulter was the prime person in the transfer of the oilseed processing plant from Vancouver to Hamilton. In 1944 he left W.R. Carpenter and, starting that same year, was instrumental in building another oilseed crushing plant



(Victory Mills Ltd.) in Toronto. Later in the 1940s a third plant was built by Toronto Elevators Ltd. (later Maple Leaf Mills Ltd.) in the Toronto harbour.

The plants that processed oilseeds during the 1940s used expellers to separate the oil from the seed.

In 1979 Maple Leaf Mills closed their Toronto Plant and relocated in Windsor, increasing their capacity by 1,200 tons per day.

“In 1967 the United Kingdom [UK] joined the E.E.C. which effectively cut off a market for Canadian soybean oil and meal. Up to that time Ontario crushers always had an alternative to the domestic market... Thus the application of duties by the UK effectively restricted soybean products (except in dire situations) to Canadian markets.”

Tables show: (1) Current daily capacities (tonnes per day) for Ontario oilseed processors: Victory Mills Ltd., 1,360 soybeans. CVOP 1,200 soybeans + 600 soft seed. Maple Leaf Monarch 1,100 soybeans + 280 soft seed.

(3) Production of soybean oil and rapeseed oil, 1976-1981. Rapeseed oil figures were always larger. (4) Consumption of soybean and rapeseed oils, 1976-1981—for margarine, shortening, salad oils and total. Address: Canadian Vegetable Oil Processing, Hamilton, ONT, Canada.

955. Steele, Leon. 1982. Re: History of Funk Bros. work with soybeans. Letter to William Shurtleff at Soyfoods Center, Sept. 28. 2 p. Typed, with signature on letterhead. [1 ref]

• **Summary:** The first ad for soybean seeds in a Funk Bros. catalog appears in the 1903 catalog. In the early years, soybeans were described as a hay crop and as a soil builder with “nutritive” grain. Then as Funk built their first mill in 1924, the emphasis shifted to grain and later to the products that interested feeders—soybean meal.

“Funk bought a feed mill and elevator at Taylorville [Illinois, about 70 miles south of Bloomington] in 1929, installed machinery to process soybeans in 1930. (Used machinery from cotton seed mills.) The plant became operative in 1930 and by 1931 the Funk catalog listed the soybean mill at Taylorville as well as the one at Bloomington. The plant Funk bought did not have soybean

crushing machinery.”

Both Funk plants, at Bloomington and Taylorville, used expellers to crush the soybeans.

“Funk enlarged their solvent extraction plant in 1963, moving from 250 ton per day to 500 ton per day. A new solvent recovery system, new flaking system, and a new extractor were part of the expansion. Funk operated the mill at a good profit through 1963, but in 1964 crushing margins had declined to the point that Funk decided to lease the mill to ADM. ADM operated the mill through 1966 and in 1967, Funk sold the machinery and the mill was dismantled and the building torn down.

“Funk’s current interest in soybeans is in the growing, processing, and marketing of soybean seed. We now have large processing plants for soybean seed at Bloomington, Illinois and Belle Plaine, Iowa. We have extensive breeding nurseries and research facilities at Bloomington, Illinois and Greenville, Mississippi, operated by a staff of qualified breeders. Funk now markets public varieties and proprietary varieties from their own breeding.”

Note that Funk is now a seed company owned by Ciba-Geigy. Address: PhD, Research Consultant, Funk Seeds International (a Company of Ciba-Geigy Corp.), 1300 West Washington St., P.O. Box 2911, Bloomington, Illinois 61701. Phone: 309/829-9461.

956. *Soyanews (Sri Lanka)*. 1982. Deep frozen tofu. 5(1):3. Sept.

• **Summary:** Describes frozen tofu and tells how to make it in homes that have a deep freezer. Gives a few recipe ideas. “Deep frozen tofu when thawed and oven or solar dried turns into a chewy meaty product like TVP.”

957. Eichberg, Joseph. 1982. Re: Early history of lecithin in the United States and Europe. Letter to William Shurtleff at Soyfoods Center, Oct. 8. 2 p. Typed, with signature on letterhead.

• **Summary:** The letterhead reads, “Since 1929, 1st in America. Lecithin products for every purpose.” An image of the company trade mark shows an eagle with outspread wings above a circular shield, inside which is written:

“American Lecithin Company. Best in America.”

In small letters in the far upper left of the letterhead: “In New York: 32-34 61st Street, Woodside, L.I. [Long Island], N.Y. 11377. Telephone: (212) 274-4350.”

To answer your questions: “1. Lecithin was first used commercially in margarine in Germany in the early 1920’s. 4. Egg yolk on a dry basis would contain 8-10% lecithin. 5. In chewing gum, lecithin is used for its softening, plasticizing, and release effects.

“6.  $Mg_2P_2O_7$  would be I believe magnesium diphosphate [actually probably magnesium pyrophosphate] and perhaps contain some water in the molecule.

8. Glidden started making lecithin in Chicago in 1935.

11. In the early days, we represented Hansa Muehle in the USA; they were the leading producers of lecithin in Europe and owned the patents of Bollmann, Rewald, and others. In 1935 a new American Lecithin Co. was organized with Glidden and ADM as stockholders. 12. The three largest uses of lecithin today are probably in the baking industry, the coatings industry, and in the manufacture of margarine.

“Commenting in general: I do not believe egg lecithin was ever commercially important; small quantities were used in Germany years ago in the preparation of various “pharmaceutical” products but for food use it was usually much too expensive and usually had unpleasant odor and taste characteristics. Calcium phosphate is used in the oil-free lecithin granules or powder as a flow agent.”

“I would guess that Unilever is probably the largest in lecithin in Europe. Lucas Meyer, to the best of my knowledge, does not make commercial lecithin and never did—they buy it from oil mills for resale and for some refining of the commercial lecithin. Lucas Meyer are large sellers of lecithin, buying the output of numerous mills; Unilever use large quantities of lecithin in their own production of margarine and to sell to others.

“ADM’s soy processing plant was in Chicago and at this location they produced America’s first domestic lecithin, followed in 1935 by Glidden who also had a solvent extraction plant for processing soybeans in Chicago.”

The most widely used grade of lecithin is the standard commercial fluid unbleached soybean lecithin; the acetone extracted purified type, which is rather expensive, goes chiefly to the health food trade; however other uses for deoiled granules and powder are being developed in the food industry and even for some industrial applications. Address: President, American Lecithin Co., P.O. Box 4056, Atlanta, Georgia 30302. Phone: 404-522-7060. Telex: 54-2238. Cable Address: “Armand”.

958. Nave, Robert W. 1982. History of work with soyfoods and soybeans at SPRA in India (Interview). Conducted by William Shurtleff of Soyfoods Center, Nov. 25 and 28. 3 p. transcript.

• **Summary:** SPRA was founded by Robert W. Nave, an

American who was born and raised in India and worked there as a missionary since the late 1950s. His interest in improving the well-being and economic status of low-income people in India led him in the 1960s to establish the Nave Technical Institute (NTI), a Methodist missionary foundation and school at Shahjahanpur, Uttar Pradesh. In 1968 Nave and co-worker Peter Chowfin visited Dick Matsuura, director of the soy program at Pantnagar. Matsuura encouraged them to consider a church-sponsored program for producing soyfoods—since no private businesses were willing to take the risk and the work was clearly of real importance. In 1970 Nave founded a nonprofit, charitable organization called NTI Soya Products. Joe Wenger and his Wenger Manufacturing Company, old friends of Nave’s parents, donated a Wenger X-25 extrusion cooker to the new organization to help in setting up a pilot project in India making textured soy protein foods. Soon additional funding was obtained from the USAID, Pant University, Bread for the World of West Germany, the Methodist Church, and Nave Technical Institute. Nave started building a factory at Bareilly, an industrial center 50 miles northwest of Shahjahanpur, in March 1971. Key people helping to start the new company were Prof. A.I. Nelson, Surjan Singh, Dick Matsuura, and Eldon Rice.

“In early 1972, in order to raise additional funds and to cement ties with Pant University, Nave sold 20% of the stock in NTI Soya Products to the university; NTI owned the rest. At that point the company was renamed Soya Production and Research Association (SPRA) and converted to a profit making organization, but with all the profits to be used for socially beneficial activities. In July 1972 SPRA produced its first large run, 40 tons of a corn-soy blend to be used in an AID feeding program in Madras. Defatted soybean meal was especially made for SPRA by the Prag Ice and Oil Mills in Aligarh.

In the fall of 1972 SPRA started to make its first commercial product, an extruded/textured soy flour (TVP). Recipes were developed and the product was marketed at a low price in inexpensive packaging for the poor. But they wouldn’t take it even when it was given to them. So SPRA took a new approach, marketing the product for the rich to reach the poor. The company chose a catchy name (Nutri Nugget), developed a fancy box written entirely in English for snob appeal, and introduced the product only in the finest stores, with demonstrations at colleges and for upper income women’s groups. After much hard work, the product caught on. Its success was assured when Sikhs started using it at their wedding dinners to satisfy both vegetarian and nonvegetarian guests. Soon all TVP came to be referred to by the public as Nutri Nugget (or Soy Nugget or Nugget). During the first year SPRA sold about 10 tonnes of Nutri Nugget. In 1973 they added their next product, Protesnac, a soy-rice spiced snack, a fortified analog of the puffed rice which was popular, especially in Bengal, on festive

occasions. By 1974 the company had introduced Protein Plus (a corn-soy weaning food), Nutri Ahar (a whole soy flour-wheat weaning food), Paustic Ahar (a sweetened ready-to-eat corn-soy blend), and an extrusion cooked whole (full-fat) soy flour (Singh 1978). By 1974 840 tonnes a year of these products were being produced, with about half being sold through the retail trade.

In 1974 SPRA, in cooperation with G.B. Pant University, introduced a soybean extension program in the plains of Rohilkhand Division of Uttar Pradesh, an area on the plains near Bareilly where soybeans had not been grown economically before. SPRA hoped to develop a closer, more reliable source of soybeans. Using a grant from the Central Agency of West Germany, SPRA worked with hundreds of farmers, providing certified seeds, fungicide, Rhizobium inoculum, and careful supervision, plus a guarantee to buy all soybeans produced at a predetermined price. R.N. Trikha of Pant University was head of the program, which conducted hundreds of demonstrations and established demonstration plots (40% of which had yields over 2,000 kg/ha or 29.6 bu/a), published a Soybean Technical Newsletter and other extension literature, had an advisory service, and conducted many training sessions, soybean field days, and crop yield competitions. As a result of all this important local work, yields and production increased markedly (Trikha and Nave 1979). This extension program was still active as of 1982. Soya Production and Research Association (SPRA) expanded considerably during the late 1970s and early 1980s. In about 1977 a larger extrusion cooker, a Wenger X-155, replaced the original X-25. But as the products, especially the basic Nutri Nugget (plain TVP), grew in popularity, competitors sprang up on all sides, in most cases imitating almost exactly SPRA's product and marketing techniques. By 1981 SPRA had 50% of the Indian TVP market, but there was competition from four other companies. Still SPRA was able to sell all it could produce and was planning to double production. In May 1981 Nave established a new nonprofit corporation named Compatible Technology, Inc., which was registered and located in Minnesota. Though legally unrelated to SPRA, its funding was raised by Nave and its purpose was to transfer ideas and technology to India. Projects in 1981 included development of: low-cost packaging techniques for whole soy flour, 5-to-10 horsepower low-cost extrusion cookers, small soy oil extraction plants, a soy-based cookie for feeding programs (a soy-fortified flour would be sold to local bakers and institutions, which would bake the cookies for fresh local consumption), tempeh, and a soyfoods training center. In 1981 SPRA made and sold roughly 2,000 tonnes of Nutri Nuggets (TVP) plus 120 tonnes of Protein Plus for net sales of \$2.5 million. SPRA has done pioneering work with soyfoods and soybeans in India, being the first company to interlink soyfoods research, product development, processing, and marketing with soybean crop extension.

Address: Compatible Technology, Inc., 7600 Harold Ave., Minneapolis, Minnesota 55427. Phone: (612) 545-0378.

959. Shurtleff, William; Aoyagi, Akiko. 1982. History of Soya Production and Research Association (SPRA) (Document part). In: William Shurtleff and A. Aoyagi. 1982. History of Soya in the Indian Subcontinent. 36 p. See p. 24-26, 30-31. Unpublished manuscript. Available online at [www.soyinfocenter.com](http://www.soyinfocenter.com). [1 ref]

• **Summary:** "SPRA was founded by Robert W. Nave, an American who was born and raised in India and worked there as a missionary since the late 1950s. His interest in improving the well-being and economic status of low-income people in India led him in the mid-1960s to establish the Nave Technical Institute (NTI), a Methodist missionary foundation and school at Shahjahanpur, Uttar Pradesh. In 1968 Nave and co-worker Peter Chowfin visited Dick Matsuura, director of the soy program at Pantnagar. Matsuura encouraged them to consider a church-sponsored program for producing soyfoods—since no private businesses were willing to take the risk and the work was clearly of real importance. In 1970 Nave founded a nonprofit, charitable organization called NTI Soya Products. Joe Wenger and his Wenger Manufacturing Company, old friends of Nave's parents, donated a Wenger X-25 extrusion cooker to the new organization to help in setting up a pilot project in India making textured soy protein foods. Soon additional funding was obtained from the USAID, G.B. Pant University, Bread for the World of West Germany, the Methodist Church, and Nave Technical Institute. Nave started building a factory at Bareilly, an industrial center 50 miles northwest of Shahjahanpur, in March 1971. Key people helping to start the new company were Prof. A.I. Nelson, Surjan Singh, Dick Matsuura, and Eldon Rice.

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960. *SoyaScan Notes*. 1982. Chronology of soybeans, soyfoods and natural foods in the United States 1982 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Jan. White Wave in Colorado is the first company to get its tofu placed in the yogurt / dairy case in supermarkets.

Jan. Legume, Inc. launches Tofu Lasagna, frozen in a box. It is soon followed by Tofu Ravioli.

Jan. *The Incredible Tofu Cookbook, California Style*, by Immegart and Dansby self published.

Jan. New England Soy Dairy launches "Year of the Dog" Chinese New Year tofu promotion and nets 47% immediate sales increase.

Jan. Food Protein Council, a trade association, changes its name to Soy Protein Council, since all of its members make only soy protein products.

Jan. Island Spring survives industry's first publicized tofu recall and the discovery of new tofu spoilage microorganism, *Yersinia enterocolitica*.

Jan. ADM becomes a sponsor of "This Week with David Brinkley" on Sunday ABC TV, with 4.4 million viewers.

Jan. Soyfoods Unlimited in California introduces tempeh burgers and ships them air freight to East Coast markets; Pacific Tempeh in California follows suit.

Feb. Yuba is first produced and sold commercially in the Western world by Ken Lee of Soyfoods of America, in Duarte, Southern California. Trial production had begun in Nov. 1981.

Feb. *Soyfoods* magazine No. 6 (yellow cover) published.

Feb. Many large ads run by San-J (tamari), New England Soy Dairy, and Legume in major national trade journals.

Feb. Unicorn Restaurant in Miami, Florida, has \$15,000 gourmet, soy / natural foods banquet to welcome chef Ron Pikarski, who makes elegant tofu dishes and carves a swan from soy butter.

Feb. Nasoya buys \$50,000 Kutter vacuum-packaging machine, which helps to popularize this packaging style for tofu.

March. *Tofu Fantasies*, by Juel Andersen published by Creative Arts.

March. USDA issues new school lunch regulations, fails to approve tofu for use.

March. Inaccurate, damaging article on iron binding by soy proteins appears in San Francisco Chronicle and Los Angeles Times.

March. Fifteen soyfoods companies exhibit at Natural Foods Expo, Anaheim, CA. Richard Leviton gives key speech. 5,000 visitors see expo. Pacific Tempeh unveils new full-color tempeh burger poster.

March. Auenland Tofu und Soja Produkte (Prien-Chiemsee, Germany), founded by Peter Wiegand, starts to make 7 tofu products from day one: (1) Tofu Pizza, Tofu; (2) Apple Tart, or Tofu Slices; (3) Tofunafish Salad or Tofu Salad; (4) Tofu Mayonnaise; (5) Tofu Burger (Ready-to Eat, Vacuum Packed); (6) Auenland Tofu; (7) Baked Tofu Sandwich. Peter had learned how to make tofu at Wildwood Natural Foods, Fairfax, California.

March. Cauldron Foods Ltd. of Bristol, England, founded by Philip Marshall and Peter Fagan, starts making: (1) Tofu: Soy Bean Curd; (2) The Bristol Vegetable Burger (Meatless Tofu Burger); (3) The Bristol Chilli Burger (Meatless Tofu Burger); (4) The Bristol Nut Burger (Meatless Tofu Burger).

March. Big increase in European soyfoods companies; there are now eleven.

March. Name of *The Beanfield* newsletter changed to *Soyfoods Monthly*.

March. Great Eastern Sun trading company founded in North Carolina by Barry Evans.

April. At New York's International Food Show, Quong Hop, Yeo's, and President brand soymilks, and Veda's Bayou Delights (tofu / tempeh pot pies) exhibit. ADM serves soy isolate ice cream and soymilk.

April. Quong Hop unveils its new Soy Deli marketing concept for retail using posters and tofu entrees sold frozen.

April. Jack's Beanstalk in Utah does creative work at introducing tofu to institutions. Develops 30 bulk recipe cards scaled to 100 servings.

April. ADM unveils work with glucono delta-lactone (GDL) and soy isolates in making tofu.

April. *Toyo Shimpō*, Japan's tofu newspaper, gives extensive coverage to upcoming Soyfoods Come West conference in Seattle, Washington.

May. Island Spring releases two 5-minute color video tapes demonstrating tofu cooking for showing in supermarkets.

May. Public schools in Hawaii are granted permission to use tofu in meals.

May. *Soyfoods Directory and Databook*, (1st ed.) by Shurtleff and Aoyagi published by Soyfoods Center, the first book of its type listing all soyfoods companies and industry and market statistics, 21 pages. Based on many phone interviews with company owners. Second edition published in June as *Soyfoods Industry: Directory and Databook*, 52 p.

May. William Shurtleff and Mark Fruin receive a grant from Kikkoman to write a book on soy sauce.

May. *Cook with Tofu*, by Christina Clarke is 2nd runner-

up in R.T. French's Tastemaker awards for cookbooks.

May. Clearway Tofu sponsors the first Mother's Day Tofu Fair in Santa Cruz, California, with tofu recipe competition, music, and prizes.

June. Vitasoy USA runs color display ads for soymilk on San Francisco buses.

June. Kibun of Japan exhibits four flavors of soymilk in Tetra Pak cartons at National Restaurant Show in Chicago, Illinois.

June 16. *The New York Times* runs an article on Dieter Hannig, Director of Food Research for Hilton Hotels. His many tofu recipes on microfiche are sent to 86 Hiltons worldwide.

June. *Bestways* magazine begins a 3-part series on soyfoods by Bonnie Mandoe.

June. *The Soy Dairy: A Way to Save the Small Farm*, by MacCormack published by Sunbow Farm.

June. *The Book of Nigari Technique* (in English) published by Yoshikawa Kagaku in Japan.

June. Metta Tofu Products in Denman Island, BC, Canada, introduces Frozen Buddha soymilk ice cream.

June. Haarmann & Reimer debuts flavors for tofu and okara at IFT convention in Las Vegas.

June. Royal American Foods is launched in Kansas City, Missouri, with \$1 million startup capital to sell TVP entrees, tofu-like products via multi-level marketing system.

June. Granny Goose Potato Chips does extensive radio advertising in California for a new potato chip. Ad makes frequent, positive reference to tofu. First national radio ads mentioning tofu.

June. Farm Foods presents Ice Bean at American Booksellers Convention at Anaheim, California, along with previews of their new tofu cookbook.

July. "Discover Tofu" published by *Cosmopolitan* magazine.

July. Farm Foods receives a U.S. trademark for "Ice Bean" as a soy ice cream.

July. Bob Davis of Light Foods excites NNFA convention in New Orleans, Louisiana, with debut of Light Links, the world's first tofu hot dogs.

July. Eden's Orchard tofu / soymilk ice cream introduced in New York by Heller Enterprises.

July. Richard Jennings announces a new formula for okara / barley tempeh; later purchases Southwest Soyfoods, relocates company in Santa Fe, New Mexico. Continued.

961. Archer Daniels Midland Co. 1982. Annual report. P.O. Box 1470, Decatur, IL 62525. 33 p. 27 cm.

• **Summary:** Net sales for 1982 (the year ended June 30) were \$3,712.977 million, up 1.8% from \$3,647.491 in 1981. Net earnings for 1982 were \$154.99 million, down 12% from \$175.98 million in 1981.

In the ADM Foods Division is the Protein Specialties Division. Sales of the company's line of isolated soy protein

products experience strong growth.

Note: Page 32 states that Ralph Bruce is Vice Chairman of the Board and Retired Executive Vice President. Address: Decatur, Illinois.

962. **Product Name:** [Soy Flour].

**Manufacturer's Name:** ADM do Brasil TVP S.A.

**Manufacturer's Address:** CEP 13100, Cx. Postal 632, Campinas, SP, Brazil.

**Date of Introduction:** 1982.

**New Product–Documentation:** Soya Bluebook. 1982. p. 64.

963. **Product Name:** Ardex Soya Protein Isolate, and Arcon Soya Protein Concentrate.

**Manufacturer's Name:** British Arkady Co. Ltd.

**Manufacturer's Address:** Old Trafford, Manchester, M16 0NJ, England.

**Date of Introduction:** 1982.

**How Stored:** Shelf stable.

**New Product–Documentation:** Soya Bluebook. 1982. p. 66. Form filled out by P. Fitch of British Arkady. 1983. He calls it "isolated soy protein."

Manufacturer's brochure. 1990. Ardex SP6 Soya Protein Isolate. "Applications include cooked meats, powdered beverages, dairy type products, and dietetic foods requiring a low sodium content." Note: All Arkady isolates contain a minimum of 90% protein on a dry basis.

Manufacturer's brochure. 1990. Ardex F Soya Protein Isolate. "Ideal for all dairy applications including soya beverages, high protein drinks, frozen desserts and ice creams because of its low flavor profile and excellent dispersibility properties... It contains a minimum of 90% protein (on a dry weight basis)."

Manufacturer's brochure. 1990. Ardex DHV Soya Protein Isolate. "Can be used in many meat applications requiring emulsification of fat and water, stabilization of comminuted meat products, water binding, cohesion and formation of heat stable gels."

Manufacturer's brochure. 1990. Ardex D Soya Protein Isolate. "Is suitable for all applications including cooked meats, powdered beverages, dairy type products, and dietetic foods requiring a low sodium content."

964. **Product Name:** Lecithin.

**Manufacturer's Name:** British Arkady Co. Ltd.

**Manufacturer's Address:** Old Trafford, Manchester, M16 0NJ, England.

**Date of Introduction:** 1982.

**New Product–Documentation:** Soya Bluebook. 1982. p. 58; 1986. p. 81. Now an affiliate of Archer Daniels Midland Co., Decatur, Illinois. W. Pringle, Sales Director.

965. **Product Name:** Lecithin.

**Manufacturer's Name:** Maple Leaf Monarch Co.

**Manufacturer's Address:** 365 Evans Ave., Toronto, ONT, M8Z 5W7, Canada.

**Date of Introduction:** 1982.

**New Product–Documentation:** Soya Bluebook. 1982. p. 58.

966. **Product Name:** [Soyoptim, Soyassim, Protisoya, Dynasoya, and Flocosoya Soy Flours; Panisoy Soy Flour Mix].

**Manufacturer's Name:** Societe Industrielle des Oleagineux (SIO).

**Manufacturer's Address:** Direction Proteines, Groupe Lesieur, 122 Av. du General De Gaulle, Boulogne-Billancourt, 92103, France. Phone: (1) 604 30 32.

**Date of Introduction:** 1982.

**New Product–Documentation:** Soya Bluebook. 1982. p. 66, 70. Contact: Guy Deneck, Proteins Dir. 1986. p. 86. Only Protisoya soy flour is produced. Address is now 30 Rue des Peupliers, 9200 Nanterre, France.

967. **Product Name:** [Lecithin].

**Manufacturer's Name:** Societe Industrielle des Oleagineux (SIO).

**Manufacturer's Address:** Direction Proteines, Groupe Lesieur, 122 Av. du General De Gaulle, Boulogne-Billancourt, 92103, France.

**Date of Introduction:** 1982.

**New Product–Documentation:** Soya Bluebook. 1982. p. 58.

968. Archer Daniels Midland Co. 1982. American agriculture: Our heritage and hope (Brochure). Decatur, Illinois: Archer Daniels Midland Co. 14 p.

• **Summary:** This brochure, interesting in both format and content, combines an overview history of agriculture in the USA, with two-page color photos of American farm scenes showing increasingly modern farm equipment at work. Each photo is accompanied by a bold quotation for its era, by Dwayne O. Andreas, Booker T. Washington, Franklin D. Roosevelt, and President Ronald Regan, respectively. A color photo on the cover shows a modern tractor pulling a plow. Inside the back cover is a portfolio pocket.

The text of the first foldout states that during the period from 1910 to 1979, "soybeans enjoyed the single most phenomenal growth of any farm product." Address: Decatur, Illinois.

969. Barbara, L.; Mazzella, G.; Cornia, G.L.; Testoni, S.; Pironi, L.; Roda, E. 1982. Hepatobiliary effects of soybean protein diet. In: G.C. Descovich and S. Lenzi, eds. 1982. Soy Protein in the Prevention of Atherosclerosis. Lancaster [Lancashire], Boston, The Hague: MTP Press. 110 p. See p. 39-44. Chap. 5. [18 ref]

• **Summary:** “Lithogenic” refers to promoting or undergoing the formation of calculi, or little stones in the body. “Litholytic” means: Tending to dissolve calculi. Textured vegetable proteins (TVP) appear to exert a hypocholesterolaemic effect in man (Sirtori et al. 1977; Carroll et al. 1978; Descovich et al. 1980) and animals (Kritchevsky et al. 1981; Huff et al. 1980), although the mechanism of their action is still unknown.

“Furthermore, the substitution of vegetable for animal proteins in lithogenic diets significantly inhibits the formation of gallstones in hamsters (Kritchevsky et al. 1979) and a soy-protein enriched diet, after 40 days of lithogenic diet, has an apparent litholytic effect in hamsters” (Angelin et al. 1979). Address: Univ. Bologna, Via Massarenti 9, 40138 Bologna, Italy.

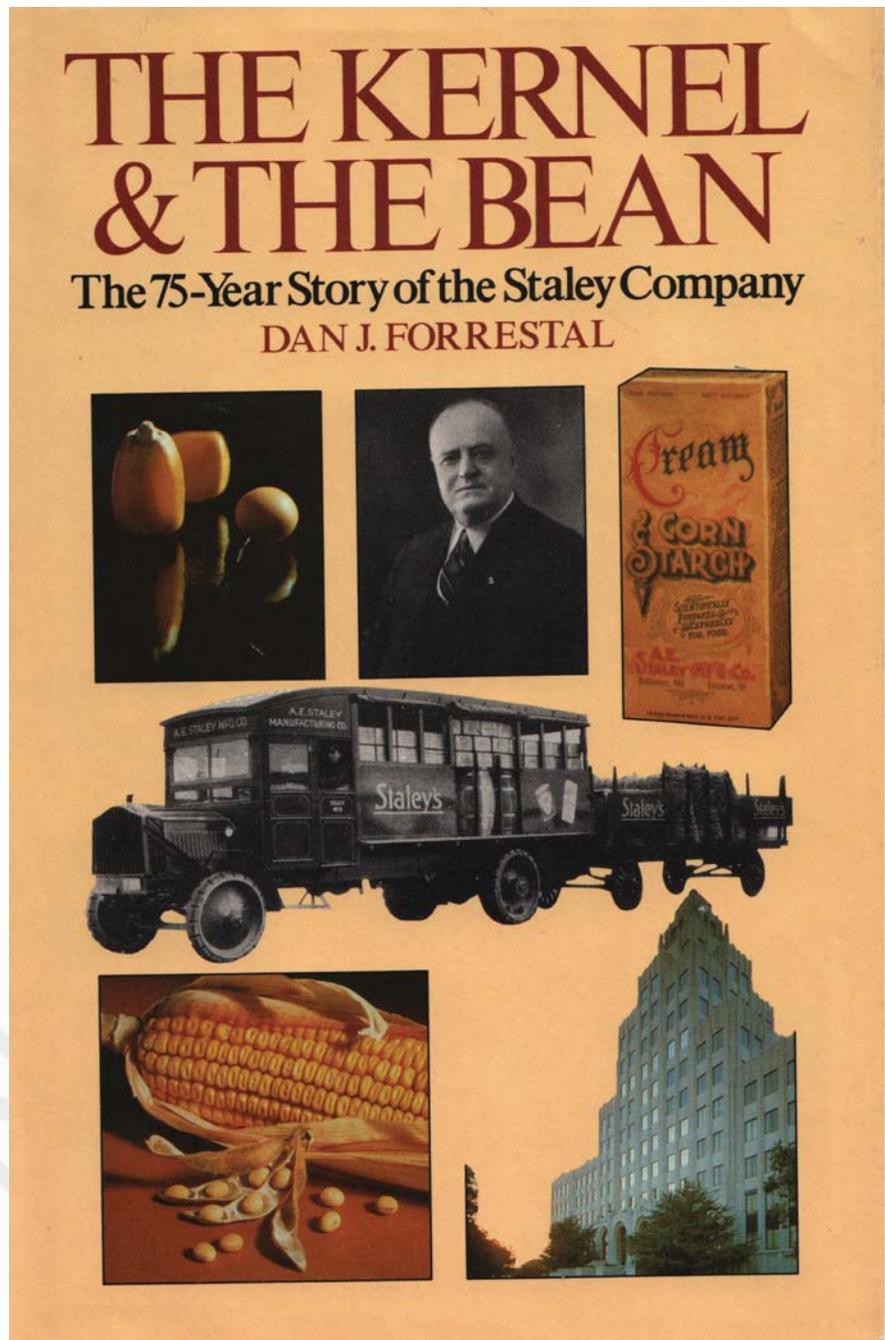
970. Berman, Louis Arthur. 1982. Vegetarianism and the Jewish tradition. New York, NY: Ktav Publishing House, Inc. xxi + 119 p. Illust. General index. Index to Biblical references. Nutrition and cookery index. 24 cm. [115\* ref]

• **Summary:** Contents: Preface and acknowledgments. Foreword by Rabbi Zalman Schachter. Introductory remarks on vegetarianism by Dr. Jean Mayer. 1. One man’s meat is another man’s porridge. 2. Compassion for animals in the Hebrew Bible. 3. The psychological roots of human compassion. 4. The craving for flesh. 5. Slaughter as a mode of worship. 6. The dietary laws as atonements for flesh eating. 7. The celebration of life. 8. What science can tell us 9. Steps toward vegetarianism in recent Jewish life. 10. Eight questions and answers. Appendixes: I. What’s cooking? II. Protein complementarity. Notes.

Foods mentioned include: Gluten (wheat protein). Lecithin. Marmite. Peanut butter. Tofu (p. 82, 106). TVP (p. 76). Address: Univ. of Illinois at Chicago Circle.

971. Forrestal, Dan J. 1982. The kernel & the bean: The 75-year story of the Staley Company. New York, NY: Simon and Schuster. xxv + 315 p. Illust. Index. 22 cm.

• **Summary:** This is the best (and only) history of the A.E. Staley Manufacturing Company.



Contents: The kernel [corn]. The bean [soya]. 1. How it all began. 2. The high road to debt and Decatur. 3. Staley makes history in sports. 4. Soybeans come to the U.S. 5. What’s good for Decatur is usually good for Staley and vice versa. 6. Trials and triumphs of the thirties (In 1938 Staley launched Sweetose corn syrup, made with enzyme technology). 7. Countdown for a weary pioneer. 8. New management and a new world war [World War II]. 9. Strictly business. 10. Smooth road ahead, except for the bumps. 11. The shock waves of the sixties. 12. That Shangri-La called retail. 13. The sweetest story ever told. 14. A little thing

called fermentation. 15. The soaring seventies. 16. The new Staley Company. Directors and corporate officers (1951-1981). Honor roll of service.

Augustus Eugene Staley was born on 25 Feb. 1867 in a log cabin on a 265-acre farm near Julius, North Carolina. His father was William Staley [1840-1885] and his mother was Mary Jane Ledbetter Staley [1842-1906]. Augustus was the eldest child. The three other children in the family were Arthur E. Staley [1869-1930], Georgiana Staley [1872-1952], and Wilhelmina C. "Willa" Staley [1885-1950]. Growing up on a farm with many chores to attend to, little Gene had little time for primary school, except during the winter months; he was a self-taught and self-made man.

"At one camp meeting, in 1880, Gene Staley's father met a Methodist [other accounts say Baptist] missionary who had recently returned from China and who had brought back a basket of strange beans called soybeans. Gene Staley later recalled, 'The missionary gave my father a handful of the beans. My father turned them over to me to play with. I planted two rows of the beans in the family vegetable garden. I was proud of them. I weeded them and picked them. Then I planted some more. The missionary said they would be good for the soil. I believed it—even if no one else did.'"

In 1881, at age 14, he began selling some produce from the family farm in Randleman, the nearest town; it contained 300 people and was 9 miles away. He drove the farm's wagon alone and barefoot, and by mid-day, having sold everything, he headed home and declared "I'm going to be a businessman."

In Sept. 1883 he saw a sign in Greensboro, North Carolina, that read "Boy Wanted—\$15 a Month." He went to the Odell Hardware Company's retail store on South Elm Street and got the job. There he was given the hard work of lifting farm implements in the back room. He learned how to stretch \$15 a month, of which \$10 went for room and board. At Christmastime he was fired.

For the next 14 years, from 1883 to 1897, Gene Staley was a successful traveling salesman. He visited such distant places as Seattle, Washington. He made good money although he had to work long hours and had no fixed location to call home. In 1896, his net profit was \$5,000—a fortune at the time. More important, he learned a great deal about how to be a successful salesman, and about business and people.

On 14 Dec. 1898 Gene Staley, age 31, was married to Emma Tressler, age 23, and the daughter of Andrew J. and Emeline Richardson Tressler of Bryan, Ohio. She was a fine pianist. She agreed to his proposal on the condition that he "Settle down in Baltimore and have a home I can share with you." They lived in a rented house at 1721 St. Paul Street. She continued her piano lessons at a Baltimore conservatory. Gene's starch suppliers were giving him a hard time, so he decided to start his own starch manufacturing company. On 12 Nov. 1906 the "A.E. Staley Starch Manufacturing Co. of Baltimore, Maryland, was incorporated under the favorable

auspices of Delaware law, with Gene Staley as president and Charlie Schuster as secretary-treasurer." He found shareholders to fund his new operation among the roughly 2,600 starch retailers who knew him directly. The company was capitalized at \$3.8 million. In early 1908 he learned that a 13-year-old starch manufacturing plant in Decatur, Illinois, was in receivership. The location he knew was ideal. In 1909 he bought it for \$45,000 and began to fix it up. (p. 19, 25).

Though corn refining by the "wet milling" process would continue to be A.E. Staley's principal business, in 1922 founder Gene Staley declared: "The day will come when our plant will process more soybeans than corn." By 1950 this prediction had come true, as the Decatur facility handled 50 carloads daily of soybeans versus 30 of corn.

As early as 1918 Gene Staley had begun his own soybean investigations, and in 1920 he ordered two expellers from the V.D. Anderson Company of Cleveland, Ohio. The manufacturing equipment was ready by 1921 but two delays held up the commencement of soybean crushing: (1) A special ramp for trucks bringing soybeans into the plant needed to be built, and (2) 1921 was a year of economic depression for both the nation and the company; Staley's expenses exceeded income by \$692,000. Finances were so tight that it was deemed prudent to delay the pioneering venture into soybean processing for another year.

In 1922 the company issued two formal announcements: (1) June 1922: "The A.E. Staley Manufacturing Company announces that in response to the general and urgent desire on the part of farmers in Central Illinois, it has been decided to install a soybean plant in conjunction with the Decatur starch and glucose manufactory.

"A satisfactory building is now in readiness. Several expellers have been purchased and delivered. Bean dryers are under construction. Storage for 150,000 bushels of beans is ready for use. The plant is planned so that large increases in capacity may be had without expensive changes. The first unit will have a capacity of about 500 bushels a day. It will be finished in ample time for the 1922 harvested crop."

(2) Oct. 1922: "On September 30, the new soybean plant of the A.E. Staley Manufacturing Company was put into operation, thus inaugurating a new industry for Central Illinois and providing the growers of this territory with a market for their beans."

Staley's first actual purchase of soybeans occurred on September 28, 1922, from the Andrews Grain Co. of Walker, Illinois. The transaction involved 1,547 bushels at \$0.9975 per bushel. Subsequently 5,674 bushels were purchased from various sources. However after operating for only 16 days and producing 209,300 lb of soybean meal and 42,036 lb of oil, the expellers ran out of beans and had to be shut down. Later more beans were found but the new mill was in operation for a total of only 74 days in 1922 and 57 days in 1923. When the 1924 season approached, soybeans were rather plentiful—but at \$1.50 a bushel. Although soybean

production and acreage in Illinois were now growing rapidly, times were still hard for the company. A letter written by Gene Staley in May, 1924, in response to an inquiry from West Virginia, said, in part: "The result of our experience in the soybean industry so far has been both unprofitable and discouraging, but it is our intention to leave the machinery in our plant for another year. If the operations are not profitable, we'll dismantle the plant and discontinue the soybean business altogether... Our company refused to pay over \$1.50 [a bushel; some new companies have paid up to \$1.80] but on 34,000 bushels we lost more than \$12,000."

Fortunately a major upswing came in 1925. The company bought almost 70,000 bushels of soybeans for \$1.30 a bushel and stayed in operation for 7 months. This increased to 8 months in 1926. Staley continued to buy all the soybeans that farmers brought him (p. 60-62).

Page 54: "Soybeans come to the U.S.: In 1922, the city fathers of Decatur, Illinois, never envisioned their community hosting such organizations as Soy Capital Bank & Trust Company, Soy Capital Electric Inc., Soy City Electric Supply Co., Soy City Marine Inc., Soy City Motel, Soy City Tire & Retreading Inc., Soy City Towing Co., Soyland Power Cooperative Inc., and Soyland Service Center, Inc.

"Not to mention radio station WSOY.

"Back in 1922, Decatur was a beanless sort of place, content to be in the heart of the Midwest's sprawling farm belt where corn ruled as king of the realm, and content to have the Staley company spearheading corn's golden era."

The term "The Castle in the Cornfields" is in the Index and appears on pages x, 83, 91, 93, 188, and 245. Page 87 states: "the editors [in 1929 and 1930] began to call it 'The Castle in the Cornfields.'"

The amazing story of this building's construction appears on pages 83-91. The story of its sweltering interior and how air conditioning finally arrived is on pages 188-91. The ground was broken on 16 Feb. 1929 and the new offices were occupied on 19 April 1930 (p. 87). However the building was not finished until 1931.

Note 1. Soyinfo Center believes that (in some areas) this book is more colorful than it is accurate. For example, the crucial "Peoria Plan" of 1928 is not mentioned.

Note 2. The biggest weaknesses of this excellent book are: (1) it has no bibliography, endnotes or footnotes. So we generally don't know the author's source of any particular piece of information. (2) It contains almost no genealogical information about A.E. Staley's family; when and where were his children born? when and where were they married, and to whom? (Continued). Address: Decatur, Illinois.

972. Forrestal, Dan J. 1982. The Soybean Special train (spring 1927). Helping to establish the National Soybean Oil Manufacturers Association (1930) (Document part). In: Dan Forrestal. 1982. The Kernel & the Bean: The 75-Year Story

of the Staley Company. New York, NY: Simon and Schuster. xxv + 315 p. See p. 64-68.

• **Summary:** Gene Staley was concerned that farmers would not be farsighted enough to plant enough soybeans to keep up with his ambitious plans. He felt he would need more than 300,000 bushels of soybeans by the mid-1930s. So he decided to conduct a massive education program throughout central Illinois by hiring a train! He announced that "the newest thing on rails will be the Soybean Special." Working together with the Illinois Central Railway Company, the University of Illinois College of Agriculture, and Southern Illinois Normal University, Staley helped put together a promotional marvel. The project was planned in 1926 and began operation in the spring of 1926.

When the Soybean Special rolled out for inspection on 28 March 1927 in Decatur, it was "whistle-tooting proof that Gene Staley was a salesman, an 'operator,' an entrepreneurial innovator, and a spirited crusader for the lowly bean."

The Soybean Special consisted of an engine and six cars. "At the rear was an office car containing dining and sleeping quarters for officials." There were two cars contained exhibits and displays on soybean planting, cultivation, processing, and utilization, prepared with the help of Professor J.C. Hackleman of the University of Illinois. There were also two cars converted into motion picture theaters and a lecture car. In 1927, between March 28 and April 17, a total of 33,939 passed through the train as it traveled 2,478 miles and made 105 scheduled stops.

A special touch of showmanship, suggested by Staley, was a contest—with prizes were awarded in seven districts of the 19 counties visited by the train. Each prize was the same—50 tons of soil-enriching limestone. The game involved guessing the number of soybeans in a 5-gallon glass jug.

"Frederick Wand, articulate expert on soybeans, was the Staley company's principal and constant representative on the train, but Gene Staley went aboard for some parts of the excursion. When a young visitor asked Staley if he was the 'inventor' of soybeans, and displayed a sense of modesty which was appropriate under the circumstances but otherwise atypical. When a newspaper reporter asked Staley if he ever had time to cultivate a hobby, he replied, 'Sure.' When the reporter followed through with the question, 'What might your hobby be?' the Decatur entrepreneur answered, 'Soybeans—just soybeans I guess.'"

"The year 1927 showed the Staley company far out in front in the soybean industry, crushing 216,000 bushels and accounting for 39% of all beans processed by an industry that was now up to 18 processors. (This leadership role was destined to be staunchly maintained by Staley until 1957 when Cargill Inc., the formidable Minneapolis [Minnesota] company, unceremoniously jostled Staley off the peak.)"

The early years were difficult because, before 1922, not many soybeans were grown on farms around Decatur. Gene Staley recalls (p. 68): "But I worked hard and wound

up losing money on soybeans in the start-up years... even though I always knew we were on the right track and would need perseverance and patience in order to achieve profits." I was nice to have a profitable corn refining company to support these new, experimental ventures.

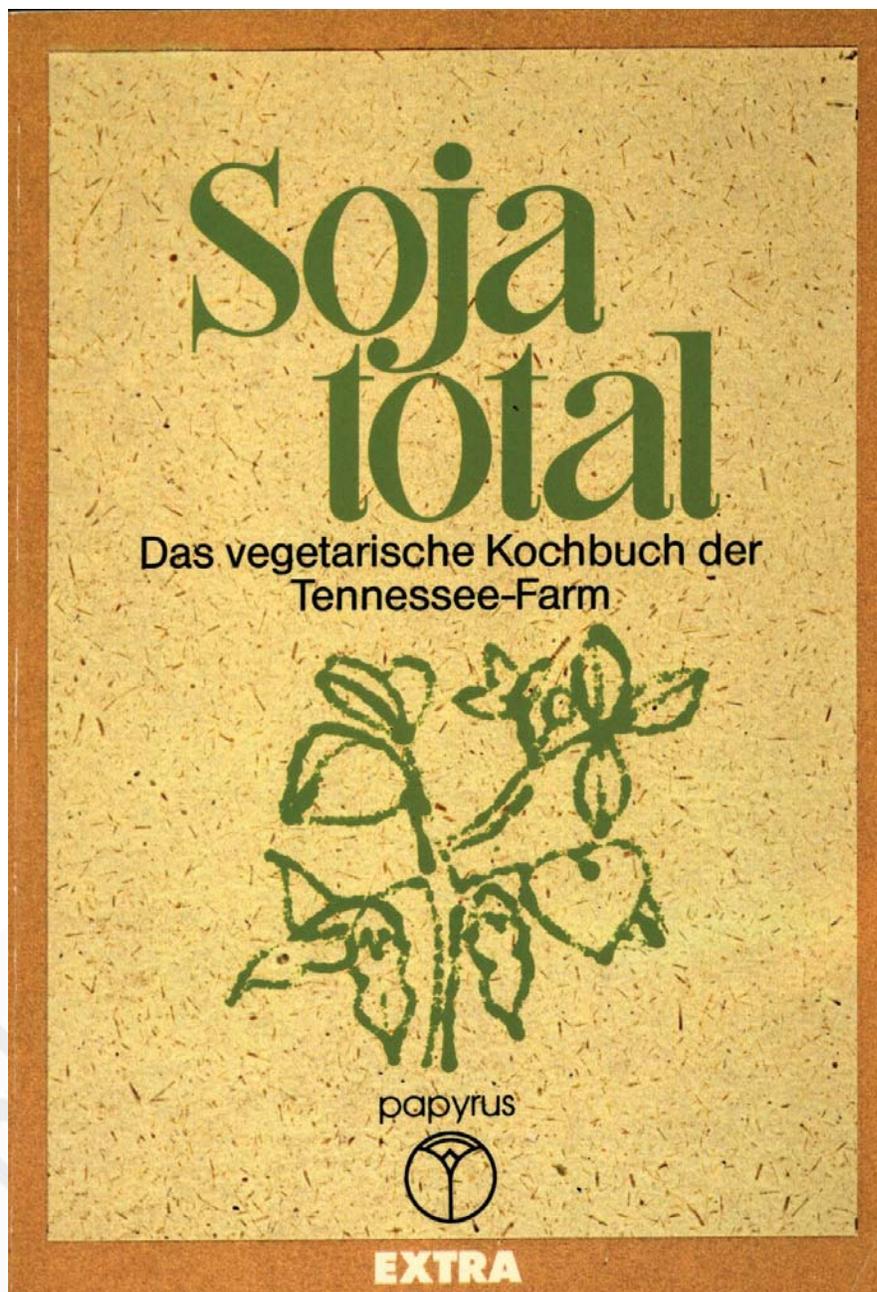
"By 1930 the soybean processing industry had expanded enough to feel it needed a trade association. The Staley company was represented at an organizational meeting held at the City Club in Chicago as were Archer Daniels Midland Company, Allied Mills Inc., Funk Bros. Seed Co., and Spencer Kellogg & Sons, Inc. By the time the National Soybean Oil Manufacturers Association was completely organized, it had 12 processing companies in its ranks. It subsequently changed its name to the National Soybean Processors Association." Address: Decatur, Illinois.

973. Hagler, Louise. 1982. *Soja Total: Das vegetarische Kochbuch der Tennessee-Farm* [Total soya: The vegetarian cookbook of the Tennessee-Farm]. Hamburg, West Germany: Papyrus Verlag. 200 p. Translation by Elizabeth Leih of *The Farm Vegetarian Cookbook* (1978, English). Illust. 21 cm. [Ger]

• **Summary:** This interesting vegan cookbook book is loaded with creative recipes, illustrations (line drawings), and black-and-white photos. Contents: Beans. Soyameat (TVP). Italian dishes. Chili rellenos, nixatamal and masa. Nutritional yeast. Knishes. Soups. Uncle Bill's recipes. Gluten. Tempeh. Miso. Soymilk. Ice Bean (Soymilk ice cream, p. 4, 96-98). Soy yogurt. Tofu. Pureed tofu. Yuba. Soy coffee. Soynuts. Soya pulp (okara). Soy flour. Vegetables. Bread. Cereal grain recipes. Breakfast breads and pancakes. Desserts. Nutritional advice.

Note: This is the earliest German-language document seen (Sept. 2013) that mentions soy ice cream, which it calls *Soja-Eiskrem*, *Eis-Bohnen*, or *Schokoladen-Bohnen-Eiskrem*. Address: Summertown, Tennessee.

974. Hudson, B.J.F. ed. 1982. *Developments in food proteins -1*. London and Englewood, New Jersey: Applied Science Publishers. x + 335 p. Index. 23 cm. [300+\* ref]



• **Summary:** Discusses (listed here in alphabetical order after the prefix "Soya"): Soyabean, p. 201, 203, 218, 249, 261. Soyabean oil, p. 201. Soya trypsin inhibitor, p 71-72. Derivatives in large-scale catering, p. 254-55. Flakes, p. 204. Flour, p. 201, 202, 204, 205, 251. Flour-based texturised vegetable protein (TVP), p. 174. Meals, p. 206. Products, p. 241. Protein, p. 34, 43, 149, 262. Protein extraction, p. 124. Protein in food products, p. 234. Protein in human diet, p. 240. Protein isolates, p. 83, 182-85, 200, 206, 210. Protein in meat products, p. 171-216, 251-53. Protein processing, p. 233, 251. Protein products, p. 233, 251. Protein technology, p. 218. Address: Reader in Food Science, Dep. of Food Science, Univ. of Reading, London Road, Reading, United

Kingdom.

975. Kritchevsky, David; Tepper, S.A.; Szarnecki, S.K.; Mueller, M.A.; Klurfeld, D.M. 1982. Effects of dietary protein in lipid metabolism in rats. In: G. Nosedo, C. Fragiaco, R. Fumagalli, and R. Paoletti, eds. 1982. *Lipoproteins and Coronary Atherosclerosis*. Amsterdam & New York: Elsevier Biomedical Press. 110 p. See p. 257-64. [7 ref]

• **Summary:** TVP helped to lower the serum cholesterol level of rats. Address: The Wistar Inst. of Anatomy and Biology, 36th and Spruce Streets, Philadelphia, Pennsylvania 19104.

976. Soy Protein Council. 1982. Soy protein: Improving our food system. Washington, DC. 6 p. Bulletin 1/82/5000.

• **Summary:** An 1-page (front only) insert in this 1982 printing (5,000 more copies were printed in Jan. 1982) gives the name, address, contact information, and soy protein products made by each current manufacturer: ADM, Cargill, Central Soya Co., Grain processing Corp., Honeymead Products, Kraft, Inc., The Procter & Gamble Co., Ralston Purina Co., and A.E. Staley Manufacturing Co. Address: 1800 M Street, N.W., Washington, DC 20036. Phone: 202-467-6610.

977. **Product Name:** Arlec F: Fine Granular Soybean Lecithin (Oil-free Phosphatides).

**Manufacturer's Name:** Arkady ADM—A Div. of the British Arkady Co. Ltd.

**Manufacturer's Address:** Skerton Rd., Old Trafford, Manchester M16 0NJ, England. Phone: 061-872-7161.

**Date of Introduction:** 1982?

**Ingredients:** Soy lecithin.

**Wt/Vol., Packaging, Price:** 40 lb open head fibre drum.

**How Stored:** Shelf stable.

**New Product—Documentation:** Manufacturer's leaflet. 1982? "Arlec F." 1 p. Contents: Product description. Specifications. Packaging. Storage. Shelf life. Labelling. Description: "Arlec F is a refined, fine granular lecithin which is light yellowish tan in colour and bland in flavour."

978. **Product Name:** [Textured Vegetable Protein].

**Manufacturer's Name:** Industrias Covac.

**Manufacturer's Address:** Alajuela, Costa Rica.

**Date of Introduction:** 1982?

**New Product—Documentation:** Letter from Robert Folkenberg. 1983. Feb. 15. "This company, organized in 1967, is presently producing about 3 tons of TVP each week."

979. Leviton, Richard; Shurtleff, William. 1983. The year in review: 1982. *Soyfoods Monthly (Soyfoods Magazine, Colrain, Massachusetts)* 3(1):1-2. Jan.

• **Summary:** January:

White Wave in Boulder, Colorado is the first company to get its tofu placed in the yogurt/dairy case in supermarkets  
*The Incredible Tofu Cookbook, California Style*, by Mavis Immegart & Patti Jon Dansby published by the authors.

New England Soy Dairy launches "Year of the Dog" Chinese New Year tofu promotion and nets 47% immediate sales increase

Island Spring survives the industry's 1st publicized tofu recall and the discovery of a new tofu spoilage organism, *Yersinia enterocolitica*

ADM sponsors "This Week with David Brinkley" on Sunday a.m. TV with 4.4 million viewers

America's 1st commercial yuba made by Soyfoods of America, Duarte, California

Soyfoods Unlimited introduces tempeh burgers & ships them airfreight to East coast markets; Pacific Tempeh follows suit

Nasoya Foods publishes *Nasoya Tofu Cookbook. O Livro da Soja* by Jane Cadwell published by Editora Ground Ltda., Brazil, its first book about soyfoods.

February: *Soyfoods* magazine No. 6 published

Extensive large ads run by SanJ tamari, New England Soy Dairy, Legume in major national trade journals

Unicorn Restaurant in Miami, Florida, has \$15,000 gourmet, soy/natural foods banquet to welcome chef Ron Pickarski who makes elegant tofu dishes and carves a swan from soy butter

Nasoya buys a \$50,000 Kutter vacuum pack machine which helps popularize this packaging style

March:

*Tofu Fantasies* by Juel Andersen is published by Creative Arts

USDA issues new school lunch regulations, fails to approve tofu for use

Damaging, misleading article on soy protein/iron appears in *S.F. Chronicle* and *L.A. Times*.

15 soy companies exhibit at Natural Foods Expo, Anaheim, Calif. and Richard Leviton gives key speech. 5000 visitors see Expo. Pacific Tempeh unveils new full color tempeh burger poster.

Big increase in European soy companies: now 11  
Name of *The Beanfield* newsletter changes to *Soyfoods Monthly*

April:

At New York's International Food Show, Quong Hop, Yeo's and President brand soymilks, at Veda's Bayou Delights (tofu/tempeh pot pies) exhibit. ADM serves soy isolate ice cream and soymilk

Quong Hop unveils new Soy Deli marketing concept for retail using posters and frozen tofu entrees

Revised, expanded edition of *The Soy of Cooking* published

Jack's Beanstalk, Utah, does creative work at

introducing tofu to institutions; develops 30 bulk recipe cards scaled to 100 servings

ADM unveils work with GDL and soy isolates in making tofu

*Toyo Shinpo*, Japan's tofu newspaper, gives extensive coverage to upcoming Soyfoods Come West, Seattle meeting  
May:

Island Spring releases 2 five minute color video tapes on demonstrating tofu cooking for showing in supermarkets

Public schools in Hawaii granted permission to use tofu in meals

Shurtleff & Aoyagi publish *Soyfoods Industry Directory & Databook*

Bill Shurtleff and Mark Fruin receive a grant from Kikkoman to write a book on soy sauce

*Cook With Tofu*, by Christina Clarke is 2nd runner-up in R.T. French's Tastemaker awards for national cookbooks

Clearway Tofu sponsors the first Mother's Day Tofu Fair in Santa Cruz Calif., with tofu dish competition

June:

Vitasoy U.S. runs color display ads on San Francisco buses for soymilk

Kibun of Japan exhibits 4 flavors of tetra-pak soymilk in Chicago, Illinois at the National Restaurant Show

*New York Times* runs article on Dieter Hannig with mention of tofu recipes on microfiche at New York Hilton

*Bestways* magazine begins a 3 part series on soyfoods  
*Restaurants & Institutions* magazine publishes photo & recipe for Tofu French Toast

Sunbow Farm publishes *The Soy Dairy: A Way to Save the Small Farm*.

Yoshikawa Kagaku publishes *The Book of Nigari Technique* in English

Metta Tofu Products on Denman Island, BC [Canada], introduces Frozen Buddha ice cream from soymilk

Haarman & Reimer debut flavors for tofu and okara at IFT meeting

Royal American Foods launched in Blue Springs / Kansas City [Missouri] on \$1 million start-up to market TVP entrees, tofu products

Granny Goose Potato Chips does extensive radio advertising in California & makes frequent reference to tofu

Farm Foods presents Ice Bean at the American Booksellers convention in Anaheim along with previews of their new tofu cookbook

*Report on Soy Delis, Cafes and Restaurants*, by Shurtleff & Aoyagi published by Soyfoods Center (comb bound; 116 p).

July:

*Cooking For Profit* magazine runs article on lightening menus with tofu

*Cosmopolitan* magazine publishes "Discover Tofu" article

Farm Foods Ice Bean receives trademark from US.

Patent Office

Light Foods excites NNFA convention in New Orleans with debut of Light Links, their tofu hotdogs

Eden's Orchard tofu/soymilk ice treat introduced in New York by Heller Enterprises

*American Health* magazine publishes article on Ice Bean  
*Health Express* publishes article on tempeh

*Bon Appetit* magazine publishes recipe for marinated tofu/vegetable dish

Richard Jennings announces new formula for okara/barley tempeh; he later purchases Southwest Soyfoods, relocates company in Santa Fe, New Mexico

Turtle Island releases liquid tempeh starter to industry  
Soyfoods Magazine No. 7 published, with 4 color cover, glossy paper

Bean Machines introduces new Continuous Pressurized Slurry Cooker, America's first designed-for-the-industry tofu system

*Tofu: Introduction to the Land of Milk & Honey* by Walter Danzer published in Switzerland, Europe's 3rd tofu book

\ Soyfoods Come West convention in Seattle draws 250 people from 12 nations and makes a profit; large Expo and plans for a new tofu trade group

*Diet for a Small Planet* reissued with 8 soyfoods recipes  
August:

BBC of London, England, runs 30 minute program on the U.S. tofu industry

*Whole Life Times* publishes "Why Are Soyfoods Catching on?" by Judy Brown

Soy Protein Council in Washington, D.C., releases filmstrip on soy protein

Poet/writer Marge Piercy writes a poem with tofu mentioned, published in *New York Times Book Review*; first literary acknowledgement of tofu

Keats Publishing releases booklet *Tofu, Tempeh, Miso & Other Soyfoods* by Richard Leviton; 32 p, 15,000 copies printed

September:

Legume has first public stock issue (IPO), approved by SEC; raises \$100,000

Nasoya releases "Tofu Slices" vacuum packed, marinated/broiled tofu

New England Soy Dairy releases pre-flavored, boxed tofus

*Restaurant Hospitality* magazine publishes feature article on tofu

Miyako Oriental Foods, maker of Cold Mountain Miso, relocates with \$15,000 reopening party

USDA's Dr. C.W. Hesseltine receives \$50,000 research grant to study shelf life of tofu, tempeh, and miso

Shurtleff & Aoyagi publish *Soyfoods Labels, Posters & Other Graphics*

Soyfoods Unlimited runs full page color ads in

*Vegetarian Times*, *New Age Journal* for tempeh burgers  
October:

Richard Leviton does “Soyfoods in the Heartland”  
nationwide tour with 13 programs, 11,000 miles

*Tofu Cookery* by Louise Hagler, published by The Farm  
in Tennessee

*Tofu Cookery* by Fusako Holthaus published by  
Kodansha, New York (both books have color plates, a first)

Beatrice Wittels’ CSC sponsors World Food Day in  
Philadelphia with speech by Richard Leviton, soyfoods  
banquet 200 people and Pennsylvania’s senator attend.

La Choy asks Soy Plant in Ann Arbor, Michigan, about  
making tofu for them. Saga Foods asks Rising Sun Soy  
Farms in Columbus, Ohio, the same

South River Farm Miso opens as the nation’s 2nd  
Caucasian miso shop (in Massachusetts, formerly Ohio)

Farm Foods prepares tofu meals at ECHO trade show in  
Pennsylvania

*Vegetarian Times* publishes full-color photos of Dieter  
Hannig’s tofu files (Continued). Address: 1. 100 Heath Road,  
Colrain, Massachusetts 01340; 2. P.O. Box 234, Lafayette,  
California 94549.

980. Patton, Greg. 1983. Modern soy protein products  
(Interview). *SoyaScan Notes*. Feb. 11. Conducted by William  
Shurtleff of Soyfoods Center.

• **Summary:** The biggest market for soy protein isolates in  
the U.S. today is in health-food protein powders. Many of  
the big manufacturers of these are in Hayward, California:  
Natural Formulas, Natural Protein Products, Shamrock,  
Cambridge Diet, etc. Isolates are not used much in meat  
pumping, sausages, etc. ADM and Ralston Purina both make  
isolates. Greg and Clyde Boismenu are competitors, and  
both know the industry very well.

Central Soya’s “Response,” a textured soy protein  
concentrate, is the Cadillac of textured soy protein products.  
Much better than TVP, it is excellent in patties and meat  
loaves. Using Response in a reformulated hamburger need  
not cost any more than using TVP, since it hydrates at a 4:1  
ratio and more can be used since it has less soy flavor and  
causes less flatulence. It costs \$0.50/lb versus \$0.30 for TVP.  
Address: 8707 San Leandro St., Oakland, California 94621.  
Phone: 415-638-5223.

981. Folkenberg, Robert. 1983. Re: History of work with  
soyfoods by the Seventh-day Adventist (SDA) Inter-  
American Division in Latin America. Letter to William  
Shurtleff at Soyfoods Center, Feb. 15. 3 p. Typed, without  
signature on letterhead.

• **Summary:** The first SDA food factory in South America  
was Granix in Buenos Aires, Argentina, in 1938. Today  
Superbom of Brazil is the largest producer, making an  
estimated 30 tons/month of textured soy flour (TVP). In  
the Caribbean region, Industrias Covac in Alajuela, Costa

Rica, was the first organized in 1967, followed by Alimentos  
Colpac of Mexico in 1969 and Westico foods in Jamaica in  
1970. Today Alimentos Colpac makes about 10 tons/week  
of TVP and 3,000 liters/week of soymilk. Westico Foods  
makes 2 tons/week of TVP, which is expected to increase  
dramatically in the near future. Industrias Covac makes  
about 3 tons/week of TVP and 1,000 liters/week of soymilk.  
Alimentos Integronaturales in Montemorelos, Mexico makes  
about 3,000 liters/week of soymilk. They and Productos  
Icolpan in Colombia will soon start producing TVP. Address:  
Field Secretary, Inter-American Div., P.O. Box 340760 (760  
Ponce de Leon Blvd.), Coral Gables, Florida 33134. Phone:  
305-443-7471.

982. Marbach, William D.; Ukai, Nancy. 1983. Tokyo’s  
soybean blockade. *Newsweek*. Feb. 28. p. 63.

• **Summary:** “Archer-Daniels-Midland of Decatur, Illinois  
would like to export soy isolate to Japan so that it can cash  
in on the latest Japanese health-food craze—soybean milk.  
(Making soybean milk, or *tonyu*, from soy isolate is simple:  
just add water, flavors and heat). The trouble is that ADM’s  
soy isolate is a threat to an industry the Japanese would like  
to develop to replace the old-fashioned way of making *tonyu*  
by crushing and boiling the beans.

“When ADM applied to the Japanese Ministry of  
Agriculture for a ‘Japan Agricultural Seal’ (JAS)—without  
which Japan’s quality-conscious consumer would resist the  
product—the request was denied. ‘According to the Japanese  
Agricultural Standard, whole soybeans must be the main  
ingredient of soy milk,’ the ministry ruled...

“‘The product must already be on the Japanese market  
before we consider it a candidate for the JAS mark,’ said one  
ministry official. A Japanese Catch-22...

“Fuji Oil Co., a big soybean processor, already makes  
lower-grade isolate for other products and is reportedly  
getting ready to enter the booming \$100 million *tonyu*  
[soymilk] market.” Address: Tokyo, Japan.

983. Johnson, L.A.; Lusas, E.W. 1983. Comparison of  
alternative solvents for oils extraction. *J. of the American Oil  
Chemists’ Society* 60(2):181A-192A. Feb. [33 ref]

• **Summary:** The ideal solvent can be easily removed from  
the meal; is non-flammable; stable; non-reactive with oil,  
meal, or equipment; pure; only slightly soluble in water; and  
readily available at low prices.

Today hexane is the solvent of choice for most oilseed  
crushers. “Recent research on alternative solvents has  
focused on ethanol, isopropanol, methylene chloride,  
aqueous acetone, and hexane/acetone/water mixtures.”

The section on “History of solvents used in oilseed  
extraction” states that the first patent for solvent extraction  
of oilseeds was issued to E. Deiss in 1856 in France. A  
few years later, Deiss constructed a plant at Marseille for  
extracting oil from olive presscake, and the process quickly

expanded across France and Italy.

By 1870 batch solvent extraction was well established in Europe for commercial oilseed processing. Early solvents used in oilseed extraction included carbon disulfide, petroleum naphthas, trichloroethylene and ethanol.

Before 1920 solvent extraction was done mostly in batches. But in the early 1920s continuous and countercurrent extractors were developed in Germany by Bollmann and Hildebrandt to extract the oil from soybean imported from Manchuria. By 1928 Hansa-Muehle in Hamburg, Germany was extracting 1,000 tons of seed per day in four Hildebrandt extractors (MacGee 1947).

In the United States, Henry Ford did pioneering work developing solvent extraction equipment that farmers could use in their barns to process soybeans. "In 1934, the Archer-Daniels-Midland Co. and the Glidden Co. each opened plants in Chicago [Illinois] using Hildebrandt U-tube extractors and hexane-type petroleum naphthas for solvent." These were the first large-scale solvent extraction plants in the USA, and each processed about 100 tons/day of soybeans. Address: Food Protein R&D Center, Texas A&M Univ., College Station, TX 77843.

984. Daenzer, Walter. 1983. Re: Work with tofu and TVP in Switzerland. Letter to William Shurtleff at Soyfoods Center, March 17. 2 p. Typed, with signature on letterhead. [Eng]  
 • **Summary:** "Soyana was founded in 1980. We give 10% of our TVP sales to the Swiss Red Cross. They use it in India and the Sudan. They are very happy with it.

"Right now, we just had our first debut on Swiss TV. It was extremely successful. We are writing a book which will multiply the tofu sales not only here, but quite probably also in other countries like yours. This is a bold statement, but I am sure because it comes from a totally new angle.

"All the workers in our tofu plant are disciples of Sri Chinmoy. They practice their master's teachings to unite the aspiration in the inner world with the dedication in the outer world and thus understand their work as a service which they try to do in a good consciousness—with their heart's love and their mind's vastness. They meditate not only before and after work, but most of the time also at every hour for a few minutes. Therefore, Sri Chinmoy has honored their tofu factory with the name 'The Secrets of Perfection-Flames.' Sri Chinmoy has shown unending concern to the soy world. He is the only spiritual master who has spoken at length on how God feels about His soybean." Address: Soyana, Postfach 8039, Zurich, Switzerland. Phone: 01/202 89 97.

985. Eichberg, Joseph. 1983. Early history of lecithin in the United States and Europe, and of the American Lecithin Co. (Interview). *SoyaScan Notes*. March 25 and 30. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** An in-depth history by one of the industry's pioneers. In 1928 Eichberg worked for American Associated

Companies (AAC) in Atlanta, Georgia. They were a mini-conglomerate active in textiles, roofing materials, etc. A man named James W. Conway was renting space in their building. In 1925-26 he had been interested in the possibilities of an edible oil operation in Norfolk, Virginia, but it never materialized. At that time he had been in touch with Hansa Mühle (the Hansa Mill) in Germany. Then he started talking with AAC about the idea. AAC asked Eichberg to investigate the possible project, and in about 1928 he contacted Hansa Mühle. In about 1930 American Lecithin Corporation (ALC-1) was incorporated in Atlanta, with Joseph Eichberg as president. Most of the stock was owned by AAC, but Hansa Mühle may have owned a small portion. Conway had no formal association with either AAC or ALC.

ALC-1 (a Georgia corporation) had two main sources of income: Royalties on patents licensed, and profits from sale of lecithin.

In 1934-35 ALC was reorganized as the American Lecithin Company (ALC-2), an Ohio corporation with headquarters in New York. Adrian Joyce, president of The Glidden Co., lived in Cleveland, Ohio, and had a legal staff there. Moreover, Ohio laws were favorable. Eichberg was president of ALC-2 (he worked at headquarters in New York) and Adrian Joyce was chairman of the board.

The main reason there is not much research on lecithin is that big pharmaceutical companies have no incentive to spend money on products they cannot patent. They make millions from their patented compounds.

Archer Daniels Midland Co. made not only the first soy lecithin in the USA, they made the first commercial lecithin of any type. ADM had developed a patent for the use of hexane, the Sorensen and Beale patent, which described the use of hexane in place of the alcohol-benzol procedure. ADM's manufacture of soy lecithin was followed very shortly by The Glidden Co. (both under license from ALC).

Glidden went their own way in the 1940s and not long thereafter ADM did too. ALC went its own way; it continued to license people to manufacture lecithin under some of the patents and bought lecithin from them, independently of Glidden and ADM. ADM started to market its own lecithin in about 1950, but it did not sell any of this to ALC.

ALC is now a Georgia corporation; they moved back to Georgia in 1959 and organized a new Georgia corporation at that time. They are still active in buying and selling lecithin and in making some compositions of their own. But their patents have all expired.

The recent summary [of lecithin] by the National Research Council (conducted at the request of FDA) was good; it did not give a negative feeling at all. LSRO abstracted that document from a larger report; its not conclusive. They are lukewarm on the therapeutic benefits of lecithin.

Also discusses Dr. Bruno Rewald and Hermann Bollmann, both of whom worked for Hansa Mühle in

Germany, the American Lecithin Corporation (organized in about 1930), the American Lecithin Company (formed in about 1934-35).

Lucas Meyer was never a manufacturer of lecithin; they bought lecithin from manufacturers (usually soybean crushers in and around Hamburg, Germany), then refined it and sometimes did additional processing, such as adding emulsifiers. They have an office, but also some tanks, mixers, etc. Address: American Lecithin Co., P.O. Box 4056, Atlanta, Georgia 30302. Phone: 404-522-7060.

986. Szuhaj, B.F. 1983. Lecithin (Interview). Conducted by William Shurtleff of Soyfoods Center, March 25. 2 p. transcript. [1 ref]

• **Summary:** Lecithin that is not sold commercially is blended back into the soybean meal and used in livestock feeds. It is sort of a secret; the industry doesn't talk about it. This has been the practice since the 1930s. It is neither a plus nor a minus for the meal. Lecithin comprises about one half of one percent of the total soybean and 2% of the oil.

A phospholipid is a lipid containing phosphorus. Phosphatides are a subcategory of phospholipids. Chemical lecithin is a phospholipid. But it is better to use the term "phosphatides" when writing about lecithin.

The three largest manufacturers of commercial lecithin in the USA are Central Soya, followed by A.E. Staley, and ADM. Cargill, the largest crusher in the USA, makes a lot of lecithin but does not sell it commercially. Central Soya has been the largest for at least 10 years. ADM is now out of the Centrolex business; they stopped making granules in 1982.

The health food industry looks to lecithin suppliers / manufacturers (which comes down to Central Soya) to conduct research on the health benefits of lecithin. But Central Soya is not in a position to put up the money needed for such studies; it would cost too much and (if the studies showed clear benefits) there would not be much profit from the resulting sales of lecithin. So nothing is going to happen.

In 1976 H. Peeters edited a book titled *Phosphatidylcholine: Biochemical and Clinical Aspects of Essential Phospholipids*. Nattermann, a German seller of phospholipids (and a competitor of Central Soya), brought together many scientists to work on their product and then to write articles about that product. They held a symposium in Belgium and published the proceedings (in English) in the book edited by Peeters, noted above. It was a contrived thing. They coined a new term, Essential Phospholipids (EPL). They spent lots of time and money with various clinics in Europe. Some of the papers were well done, but scientists see it as "paid for" conclusions. That's why people are looking for negatives nowadays.

One of the best authentic articles was published in *Lancet* in 1977 (vol. 8028, p. 68-69). It indicates that lecithin improved memory / brain function.

How about lecithin and coronary heart disease? Lots

of research has been done but none of it is conclusive. Moreover, lecithin is regarded as a natural foodstuff, so it is not as highly regarded by the medical profession as if it were a pure chemical substance. Since it is a complex mixture of phosphatides, it would not be wise to try to promote it as a drug. Trying to prove that a natural food is therapeutic would be as difficult as showing that vitamin C can be used to treat the common cold. Address: Central Soya Co., P.O. Box 1400, Fort Wayne, Indiana.

987. Shurtleff, William; Aoyagi, Akiko. 1983. History of soy lecithin. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 31 p. March 30. Unpublished typescript. Available online at [www.soyinfocenter.com](http://www.soyinfocenter.com).

• **Summary:** [www.soyinfocenter.com/HSS/lecithin1.php](http://www.soyinfocenter.com/HSS/lecithin1.php)

Note: A comprehensive, greatly expanded edition of this book was published in free digital format on Google Books in 2016.

A comprehensive history of the subject. Contents: Part I: What is lecithin? Basic definition. Etymology and nomenclature. Manufacture. Varieties of lecithin and their composition. Natural sources of lecithin. Functional properties. Food uses. Therapeutic uses. Nonfood and industrial uses. World production. Part II: History of soy lecithin in Europe. Early research (pre-1900). 1900-1939. 1940-1983. Part III: History of soy lecithin in the United States. 1923-1939. U.S. research on the therapeutic value of lecithin. The U.S. lecithin industry and market. Part IV: History of soy lecithin in East Asia.

"The first soy lecithin appeared on the U.S. market in 1929, having been imported from Germany (Eichberg 1942) by American Associated Co. (Atlanta, Georgia), one of the founders of American Lecithin Co. (ALC). For the next five years, all the soy lecithin used in the U.S. was imported from Germany and Denmark (Horvath 1933). Aarhus Oliefabrik made lecithin in Denmark and exported it to the USA via Fries Bros., New York. In 1932 Schweiger was issued a U.S. patent (No. 1,892,588. Dec. 27) for producing a light-colored lecithin by bleaching it with hydrogen peroxide, a process that is still widely used.

"One organization that pioneered in the introduction of lecithin to the U.S. was the American Lecithin Corporation. It so happened that James W. Conway, mentioned above for his early interest in lecithin and attempt to start a plant, rented office space in a building owned by American Associated Companies (AAC), a mini-conglomerate in Atlanta. In about 1929 he started discussing his ideas with AAC, which contracted Mühle, Hamburg, and assigned Joseph Eichberg, an AAC employee, to work on the project. In 1929 Eichberg and Bruno Rewald from Hansa Mühle traveled the U.S. together, checking out prospects. In about 1930 American Lecithin Corporation was incorporated in Atlanta, with Joseph Eichberg as president; most of the stock was owned by AAC, but Hansa Mühle may have owned

a small portion. As the exclusive U.S. representative of Germany's Hansa Mühle, ALC acquired rights under the key lecithin patents from Hansa Mühle (then the leading lecithin producer in Germany and owner of patents granted to Bollmann, Rewald, and others), and prepared to grant licenses on the patents and lease the equipment to American companies interested in manufacturing lecithin in America. ALC also imported and marketed lecithin during this period but it did not manufacture of lecithin.

"Commercial production of lecithin began relatively late in the U.S., which is not surprising when it is recalled that the soybean crushing and refining industries did not really begin their takeoff until the mid-1930s. In 1934 the Archer Daniels Midland Company (ADM), at their plant in Chicago, Illinois, became the first in America to Manufacture soy lecithin. Made under license under the Hansa Mühle patents via ALC, this was also the first commercial lecithin of any type made in America. The next year the Glidden Company, again under license from ALC, began making soy lecithin at their solvent extraction plant in Chicago. In 1934-35 ALC was reorganized as the American Lecithin Company to promote the production and sale of lecithin in the U.S. and to give the major manufactures a major share of the ownership. The stockholders of the new ALC were ADM, Glidden, Hansa Mühle, American Lecithin Corporation and Aarhus Oliefabrik, the Danish producer. The various patent positions were reconciled. Joseph Eichberg was president of the new ALC and Adrian D. Joyce, then president of Glidden, was Chairman of the Board. The new company was chartered in Ohio, where laws were favorable and Glidden's legal staff was located, but Eichberg and working headquarters were located in New York. ALC now had two main sources of income: royalties from patents licensed and profits from sale of lecithin purchased from licensees. Ross and Rowe, later acquired by ADM, were active in selling for the new company."

"Glidden first began to market its own lecithin in 1946 (*Soybean Digest* 1946) and ADM followed suit in about 1950, when it stopped selling through ALC. ALC went its own way too; in 1947 it first started to do some of its own additional processing and refining of lecithin, making various specialty products, as for bakers and others. After severance of marketing ties with Glidden and ADM, ALC continued to license others to manufacture lecithin under some of the patents and then bought lecithin from them and marketed it. In about 1959 Eichberg and ALC moved back to Atlanta and organized a new corporation. Today ALC is still active buying and selling lecithin and making some compositions of their own, though all the early patents have, of course, expired." Address: Lafayette, California. Phone: 415-283-2991.

988. Ling, C.A. 1983. Re: Plamil Foods Ltd. Letter to William Shurtleff at Soyfoods Center, March 3. 1 p. Typed,

with signature on letterhead.

• **Summary:** "You will gather from the attached completed questionnaire that we were the pioneers of a liquid soya milk in this country in 1965 and the enclosed labels and literature will give you further background information.

In answer to your questions... may we say that we obtain our soya protein isolate from Arkady ADM, Skerton Road, Old Trafford, Manchester M16 0NJ. We shall be obtaining from them shortly some TVP for a Goulash we propose marketing and also some de-fatted soya for a non-dairy chocolate bar we shall be producing i.e., with soya in place of milk. Regretfully we cannot say in answer to 55 and 56 whether the British Soya Products Ltd. or Soy Foods Ltd. are still in business as we have no connection with either company;

"We have already stated that we were pioneers in this country of liquid soya milk in 1965 and at that time the labeling authorities in the country would not permit us to use the definition of 'soya milk' or 'soy milk' and insisted that we used the terminology 'plantmilk'. We have taken this matter up from time to time with the Trading Standards Office (responsible for carrying out the labelling laws) and understand that the matter is at long last being centrally reviewed, so that we hope we may be able before long to use the terminology "soya milk". When you re-write your summary in numerical order relating to the UK, perhaps you would be good enough to make mention that we were the pioneers of a liquid soya milk here in 1965. After it being the sole one on the market for a number of years in the country, Itona decided to bring out one approximately five years ago and Granose also entered the market with one a couple of years ago. So we appear to have stimulated their interest!

"Yours faithfully, Plamil Foods Ltd." Address: Managing Director, Plamil Foods, Plamil House, Bowles Well Gardens, Dover Road, Folkestone, Kent CT19 6PQ, England. Phone: Folkestone (0303) 58588.

989. Shurtleff, William; Greenslade, David. 1983. Mahatma Gandhi: Soyfoods pioneer in India. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549 USA. 2 p. March. Published in part in *Vegetarian Times*, June 1983, p. 4. Unpublished manuscript. [5 ref]

• **Summary:** Although it is well known that Mahatma Gandhi revitalized the vegetarian movement in India, it is less well known that he was one of India's first pioneers to introduce soybeans and soyfoods. His work during the 1930s still serves as an inspiration to many Indians, who are today transforming India into one of the world's leading soybean growing and soyfoods using countries.

Gandhi's earliest known mention of soybeans or soyfoods was in the July 1935 issue of *Harijan*, his popular magazine for village uplift. There he referred to a book by Dr. H.V. Tilak called *Balanced Diets*. Dr. Tilak's book was based in an orphanage of over a hundred children, whose

diet was made richer in protein and more balanced by the addition of soybeans.

In September 1935, Gandhi reprinted a report on soybeans by the Bombay Health Association. This article listed the nutritional and medicinal values of soybeans and also explained how to make soymilk, soy flour, and soy coffee. The October issue of *Harijan* reported that the kitchens at Gandhi's ashram has introduced experimental rations of soybeans into the communal diet. The same article compared soybeans with eggs, wheat, and ghee. Since the more economical soybeans were rich in protein and oil, Gandhi later ordered reductions in the portions of wheat and ghee and suggested that all beans, other than soy, be omitted altogether.

November's *Harijan* reported that soybeans were being boiled, steamed, and used in soups. The ration of ghee had been stopped and soybean portions increased. Gandhi pointed out that everyone seemed to thrive on the new diet. In the same issue, Gandhi reprinted a leaflet by the Baroda State Food Office describing soybean crop cultivation. By December 1935, *Harijan* reports that soybeans had become a substantial part of the diet at Gandhi's ashram.

The December 1935 and January 1936 issues printed a dozen soyfood recipes, including the techniques for making, "TO-FU," "shoyu-sauce," and "soya bean sprouts," Gandhi said he was particularly fond of the sprouts.

By September 1936 *Harijan* was recommending an exhaustive book on soybeans written by F.S. Kale, an Englishman in charge of the Baroda State Food Service Department. Entitled, *The Soya Bean: Its Value in Dietetics; Cultivation and Uses*, this was the first book on soyfoods published in India. *Harijan* also carried a report on soybean cultivation experiments in the USA and the Soviet Union in the same issue.

By 1936, after careful consideration of economic, nutritional and medicinal evidence, Gandhi wholeheartedly favored the cultivation and widespread use of soybean in India and his magazine ran lists of prices and of the places where soybeans could be obtained.

We lose track of Gandhi's interest in soyfoods in late 1936. However in 1949 his ideas were republished in *Diet and Diet Reform*, a book which sold thousands of copies. The fact that Gandhi took such an interest in soybeans and soyfoods is a major source of encouragement to the many Indians working in this burgeoning field today. In 1982 India produced 500,000 metric tons of soybeans, making it the world's ninth largest producer, and soyfoods (such as TVP, soymilk, and soy oil) were catching on rapidly in this country where an estimated 50 percent of the population is vegetarian, and another 30 percent eats only a very small amount of meat. Address: Lafayette, California.

990. Cummins, Marilyn L. 1983. Using the bean in the board room: Best of show—ADM. *Agri Marketing*. April. p. 36, 66,

114-17.

• **Summary:** "The light comes up on a solitary soybean. An unseen force sets it rocking, then to the incessant pulse of the background music, it begins an amazing journey through an obstacle course of foods containing soy protein.

"This well-trained bean whizzes past a loaf of bread an instant before a slice crashes to the table, nimbly keeps its balance as it rolls along the edge of a salad bowl and ricochets out of an empty glass just before the milk comes gushing in.

"All in a day's work for the winner of this year's Best of Show award in the National Agri-Marketing Association's advertising and communication competition. The Archer Daniels Midland Co., Decatur, Illinois, and its agency, Martin/Williams Advertising Inc., share the honor for the TV commercial "Soy Protein." The spot won the single TV commercial category and starred in ADM's first-place series of commercials portraying America's abundance.

"The commercials honored by NAMA are but a fourth of the more than 20 network spots aired by ADM in the past two-and-a-half years to tell the story of agriculture to the public in general, and the nation's power brokers in particular..."

The text of the "Soy Protein" commercial, accompanying 12 TV frames, reads like this:

"The newest development in nutrition is actually one of the oldest foods known to man.

"The soybean.

"For over four thousand years, the Chinese have used it to make nutritious, protein-rich foods.

"But in America, the history of the soybean is considerably shorter.

"In fact it didn't become a widely used food ingredient here

"until the early nineteen seventies.

One thing's for sure though, it's come a long way since then.

"Over the years one company has led the way in unlocking

"the versatility of the soybean.

A company that each day continues to develop new ways

"to use this abundant, functional source of protein.

"The Archer Daniels Midland Company. That's using the old bean."

The final frame shows a whole soybean at the top, the ADM logo in the middle, and the full company name across the bottom—all against a dark background. Address: Managing editor.

991. Johnson, Dale. 1983. Statistics on soy protein production. Full-fat soy flour. Dawson Mills and Loma Linda. Central Soya (Interview). *SoyaScan Notes*. May 23. Conducted by Walter J. Wolf of NRRC, Peoria, Illinois.

• **Summary:** Estimates of soy protein production: Textured soy proteins (flours or concentrates) 150-200 million lb/year. Isolates 120-150 million lb/yr, including: Ralston Purina (doing very well), ADM (having lots of problems), and Grain Processing Corp. (“sold out”). Much of the isolate made in the USA is being exported for use in meat products in Europe and Africa. About 10-20 million lb/year of the non-exported isolate is used to make infant formulas in the USA by Mead Johnson, Ross Laboratories, and Syntex (Borden operation). A large amount of textured soy flour is still going into pet foods. Prices (dollars/lb): Soy flours \$0.13. Soy protein concentrates \$0.40-0.60 (lower priced are for calf starters). Soy protein isolates \$1.10 to \$1.35.

Full-fat soy flour: There is no significant production in the USA; in the past, production was several hundred tons/month. Some is imported from Germany (Lucas Meyer).

Dawson Mills: As of June 1, they will discontinue production of soy flour and grits, and textured soy flour. Loma Linda (California) purchased one of their two isolate spinning lines and was trying to have AMPI [American Milk Products, Inc.] run it for them [in Minnesota] using isolate purchased from elsewhere. Dale is not sure of the status of this project. Dan Hooten, formerly with Dawson Mills, is now apparently involved in sales of dairy products at Land O’Lakes (now located in Eau Claire, Wisconsin).

Central Soya is no longer using their steam texturization process. Address: Food Ingredients (Minnesota), Inc., 2121 Toledo Ave. North, Golden Valley, Minnesota 55422.

992. Hooten, Dan. 1983. Dawson Mills closing down their flour and grit operations. Estimate of soy protein isolate production capacities (Interview). *SoyaScan Notes*. May 24. Conducted by Walter J. Wolf of NRRC, Peoria, Illinois.

• **Summary:** Dawson Mills [as of June 1] will discontinue production of soy flour, soy grits, and textured soy flour, because the products are not selling well; the factory is located too far from the markets. They formerly shipped soy flour to the West Coast for PL-480 programs, but that market has dried up.

His estimate of total U.S. isolate production capacity (not including Kraft) is 104 to 110 million lb/year, as follows: ADM 20-25. Grain Processing Corp. (GPC) 14-15. Ralston Purina 70 as follows: Memphis, Tennessee 20; Pryor, Oklahoma 30; Louisville, Kentucky 20.

Wayne Pruitt of Griffith Laboratories (5 April 1983) does not know whether Land O’Lakes will continue production of their calf starter material (intermediate in properties between a flour and a concentrate). Address: Industrial Sales, Land O’Lakes, Eau Claire, Wisconsin.

993. Hooten, Dan. 1983. Estimate of soy protein isolate capacities in the USA (Interview). *SoyaScan Notes*. May 24. Conducted by Walter J. Wolf of NRRC, Peoria, Illinois.

• **Summary:** He estimates the total capacity to be 100-110

million lb/year, with individual company capacities as follows (in million pounds per year): Ralston Purina 70 at three plants (Pryor, Oklahoma 30; Memphis, Tennessee 20; Louisville, Kentucky 20). ADM 20-25. Grain Processing Corp. 14-15. Address: Industrial Sales, Land O’Lakes, Eau Claire, Wisconsin.

994. Puski, Galeor. 1983. Kraft still makes only soy protein isolates (Interview). Conducted by Dr. Walter Wolf of NRRL, May 25. 1 p. transcript.

• **Summary:** At their small pilot plant operation in Coshocton, Ohio, Kraft makes only “a couple million pounds a year.” Puski adds that several years ago ADM couldn’t sell their isolate, but now they can’t make enough. He does not know who is buying that isolate or how it is used.”

Wolf’s Note 1. According to Dick Lockmiller (May 1983), Kraft’s capacity was 2.5 million lb/year when they purchased the small continuous process plant, but it has increased to 6 million lb/year.

Wolf’s Note 2. Puski’s statement about ADM conflicts with comments by Dale Johnson that “ADM is having a lot of problems” and Wayne Pruitt’s remark that ADM was “not operating?”

Note 3. Attached to Wolf’s notes is a large flow sheet of the “Kraft Continuous Isolate Process.” Its source is not known. Address: Kraft. Phone: (312) 998-3541.

995. Shurtleff, William. 1983. In Harbin (June 6-7) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 10-12. Unpublished manuscript.

• **Summary:** 6:00 a.m. I walk to the local market. See one stall (a mobile cart) selling gelled tofu curds (*doufu-fa*) over which is poured a sweet brown sauce then topped with some diced red chilies and green herbs. Served with deep-fried breadsticks. One other place serves soymilk hot with deep-fried breadsticks. No tofu at all in the market. Some say it is sold only in winter. No other soyfoods seen.

Soy milk terminology: (1) Dou Nai—it sounds more modern than “Dou Jiang.” Implies or connotes no beany flavor, is thicker and has a higher protein content. (2) Dou Ru—(Alfa-Laval used this) is harder to pronounce.

[Henan Area grows lots of soybeans]: more than Heilongjiang? The money to build soymilk plants in China is partially foreign capital. People and institutions are falling all over each other to help China develop “China Orient Leasing.” 50% are Japanese.

Eaton [Eton], A consortium from Cleveland, Ohio, is planning to build a \$50 million oil extraction and protein refining plant in Jiamusi. Oil = extract, refine, make margarine, shortening, etc. Protein = feed, isolate, concentrate, tofu and soymilk production.

Tuesday June 7, 1983 (Harbin): Min-Lite = the Ministry

of Light Industry is interested in a soymilk plant. Also, the State Farm Bureau (Bean processing division) and the Soybean Institute is working in breeding (for both protein and oil), diseases, and physiology.

Soy milk Taste Tests in Harbin: Chocolate was vastly the first choice, second was sweetened, third was plain / dairy-like. They dislike added oil in soymilk and would like to try fruit-flavored soymilk (apple, pineapple). Added fat coats the mouth with a greasy / gummy film. Vitasoy has no added fat.

Dou Ru Fen: Niu Nai Mai Jing. 205 gm. This product consists of a white powder containing 10% cow's milk powder, 40% soymilk powder (spray-dried traditional soymilk, not soy flour), and 50% (!) sugar. 1000 tonnes a year are made, starting in 1978 or 1979. Sold to housewives who use it to make breakfast soymilk. Costs RMB 0.78–0.80 = 70–80 cents. Cow's milk powder is stirred into hot soymilk. The mixture is concentrated and spray dried. Also made in Beijing, but this one is the best quality.

Pure: Soy milk powder is made in Beijing by Beijing Foodstuff Corp. since 1980. Called Doujiang-Fen (Soy milk powder) and also retailed to housewives for breakfast use. It is 50% powdered soymilk and 50% sugar. It is spray dried.

Fresh green soybeans (Maodou = Hairy bean): Mostly eaten by farmers. Also sold in markets. Not packaged or canned. Whole dried soybeans: some canned in China. It is sold in Beijing.

Tofu in Heilongjiang: None is sold during the summer because it spoils easily and people do not like to eat tofu in the summer. A lot is sold in winter.

Soybean use: Of China's 9 million tonnes produced, one man estimates that 80% of soybeans are crushed. The meal is used mainly for feed, but some for tofu, soy sauce, and textured vegetable protein (TVP).

Main uses for foods made with whole soybeans in approximate order: (1) Tofu and kan-dofu. (2) Soymilk. (3) Soy sauce. (4) Miso = Doujiang. (5) Yuba. (6) Fermented tofu.

Main uses for foods made with defatted soybean meal: (1) Tofu. (2) Soy Sauce. (3) Miso. (4) Soymilk.

Soy nuggets [fermented black soybeans] are made only in the south of China. This state farm bureau man estimates that there are 200,000 tofu shops in China, one in every village, but there are no statistics on tofu.

Big tofu factory in Harbin. Ministry of Light Industry people in charge. He does not think as many soybeans will ever be used for soymilk as for tofu.

Many government groups are doing research on soyfoods, such as tofu and soy sauce, but no single group. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

996. *Soyfoods*. 1983. Like a rolling bean [ADM's new TV commercial]. Summer. p. 13. [1 ref]

• **Summary:** "For 60 seconds on national Sunday morning

television, in view of 9.5 million households, a soybean lithely rolls past cubes of tofu, infant formula, bread, pizza, chili, salad dressing, ice cream, and soymilk while the narrator intones 'The newest development in nutrition is actually one of the oldest foods known to man.' This may be tofu's first appearance on national television and such a tasteful way to make a debut.

"This is the newest corporate commercial of Archer-Daniels-Midland Company, the \$4 billion Decatur, Illinois, oilseed processor, which has been sponsoring its commercials on 'This Week With David Brinkley' and 'Meet The Press' since 1982. The full color television spot, created by Martin Williams Advertising of Minneapolis [Minnesota], is 'fast becoming a media star,' senior account executive Gerald Kleckner explains. 'The "Soy Protein" commercial has won about every advertising competition we've entered it in, including: Business and Professional Advertising Association: Best Television Commercial; National Agri-Marketing Association: Best Television Commercial; Communication Arts: featured in their CA '82 Annual as one of the 40 best television spots of the year; CLIO Awards: finalist, corporate television advertising.'

"The ADM commercial's goal—its production was detailed in Agri-Marketing, April 1983—is 'to increase awareness of the versatility, importance, and widespread use of soy protein in processed foods.' ADM's viewer targets include highly educated, highly salaried government leaders, Wall Street and corporate America, and sophisticated farmers. (See *Soyfoods*, No. 7, 'ADM's Soy Miracles')."

997. *Soyfoods*. 1983. Calcium absorption, soyfoods, and vegan diets. Summer. p. 20-21. [1 ref]

• **Summary:** "The recent medical experience of a 41-year-old man, who had been following a longterm (12 years) vegetarian diet, and who was diagnosed as having osteoporosis (porous bones from calcium deficiency) raises important questions for nutritional research on the suitability of vegan diets and calcium absorption from soyfoods.

"The subject broke the neck of his right femur, 3 inches below the top, during a fall while ice skating. The orthopedic surgeon who set the break commented it was 'virtually impossible' for a man of 41 to break this bone except in a serious car accident. He also found the bone 'exceptionally soft, like balsa wood.' The subject was next interviewed by a nutritional endocrinologist who gathered information on the subject's diet, lifestyle, blood, urine, and bone mineral density. The densitometer results revealed the subject's bones were of low density, quite porous: in fact 2.29 standard deviations below the national norm. This means that only one man his age in a hundred has a lower bone density. The doctor concluded that while the subject was healthy with a proper diet, for many years he had had a serious calcium deficiency. Thus his body, receiving insufficient dietary calcium, drew reserves from his bones, thereby

demineralizing them to a point of extreme weakness.

“A closer examination of the subject’s diet revealed that his calcium intake had been far below the US RDA of 800 mg per day. The subject was curious that East Asians and most Third World residents did not consume the RDA yet seemed to have strong bones. The endocrinologist responded that (1) non-dairying cultures such as Japan and China have evolved genetically to utilize nondairy calcium sources much more efficiently than dairy-consuming peoples; (2) if a person who is raised on a dairy-rich diet changes, in mid-life, to a low calcium diet, his body is unprepared and may quickly enter a prolonged negative calcium balance; and (3) the literature indicates that Japan has one of the highest rates of osteoporosis and fractures of any country for which data exists.

“On the physician’s recommendation, the subject began a calcium supplement program as follows: Breakfast, 250 mg oyster-shell calcium with vitamin D; Lunch, the same; Dinner, 250 mg phosphorus; Bedtime, same as dinner. Additionally, the subject began drinking 2 glasses daily of low-fat milk while consuming more sesame seeds, kale, broccoli, and calcium sulfate tofu. The goal was to increase daily calcium intake up to the RDA of 800 mg.

“Tofu and tempeh (and other soyfoods) had been a key part of the subject’s diet and a main source of his calcium, yet while calcium sulfate tofu is a good source for calcium, nigari-coagulated tofu has only 28% as much calcium as the former. The accompanying chart illustrates the amounts of various soyfoods required to fulfill the RDA for protein and what percent of the calcium RDA is thereby fulfilled. It is clear that tofu is by far the most concentrated source of calcium on a protein basis among soyfoods, yet one would have to consume 1½ to 2 pounds a day to obtain all one’s protein from tofu. Yet 550 g of regular tofu or 405 g of firm tofu would supply all one’s calcium requirements. Further, the most concentrated sources of soy protein (TSP, isolates) generally have the lowest concentrations of calcium.

“The subject next calculated how much calcium might be provided by typical per-meal servings of various soyfoods. Six ounces (170 g) of regular tofu or firm tofu provides 31% to 42% of the calcium RDA. Three ounces of tempeh (85 g) provides 15%; one cup of soymilk (336 g) provides a mere 6%. By comparison, the same amount of cow’s milk provides 50% of the RDA for calcium and 17% of the protein. Again, among the soyfoods, tofu appears to be by far the best source of calcium.

“However, not all of the calcium present in foods is actually absorbed by the body. In a typical American diet, 70% to 80% of the calcium consumed is excreted in the feces. Phytic acid, present in soybeans, grains, and other legumes, tends to bind some of the calcium into an insoluble complex, limiting its absorption. Oxalic acid, found in spinach, beet tops, collard greens, chard, parsley, and chocolate, can also bind calcium. To date, there has been no

research on the effect of phytic acid in soyfoods on human calcium bioavailability. This is an important area for future research in addition to general studies on calcium balance in vegetarian diets.

“The correct conclusion to draw from this case history is not that a soyfoods diet can lead to calcium deficiency, but that in a primarily soy protein-centered and traditional vegetarian diet, care should be exercised to supplement the diet with adequate calcium. The US RDA of 800 mg for calcium, the subject contends, is a ‘reasonable’ figure. ‘I had always thought,’ concludes the subject, ‘that if I ate a traditional diet, like any Third World peasant, I would be in the best of health. Live and learn!’

A large table shows the protein and content of the following soyfoods, and the amount of each one must consume to get one’s recommended daily allowance. 1. Tofu, regular calcium sulfate curded. 2. Tofu, firm calcium sulfate curded. 3. Tempeh. 4. Soybeans, dry. 5. Soy flour / TVP. 6. Soymilk. 7. Soy protein isolate.

998. Fargo, Charlyn. 1983. Soy-food firm takes aim at diverse markets. *Crain’s Chicago Business*. July 17. p. 3, 43.

• **Summary:** About: Spectrum Foods, Global Foods, Royal American Co., and Carl Hastings. “When floods hit Houston [Texas] and New Orleans [Louisiana] this spring, Global Foods [of Decatur] came to the rescue. Through the American Red Cross, the company supplied tasty, low-cost meals to the flood victims, including chili, beef stroganoff, Mexican dinners and a sweet-and-sour Oriental dish... Soybeans are the basic ingredient in all the company’s instant entrees.

“Global is one of three companies run by local entrepreneur Carl Hastings under the corporate umbrella Spectrum Foods. Each division aims at a different market: Global is targeting charitable organizations; Royal American Co. sells directly to consumers, and the brand-new Continental Food Assn. plans to cultivate the institutional (nursing homes and penal institutions) and export markets, particularly Saudi Arabia and Greece.

“The dynamic Mr. Hastings—who earned a doctorate in food science from the University of Illinois—has built Spectrum into a profitable, \$11-million retail sales empire since leaving A.E. Staley Manufacturing Co. in February 1982. He started Spectrum with \$1 million in capital provided by 25 investors. The company, which has 125 employees, uses a direct selling method similar to that of Amway Corp. Distributors—25,000 in the 50 states, Puerto Rico and Guam—invite prospects into their homes for tasting parties. A.E. Staley supplies the company with raw soy-protein concentrate, and Spectrum handles production of the meals...

“Though ADM isn’t involved in direct sales of soy-food products, it does sell soy-protein concentrate to an East Coast retailer, General Nutrition Corp. Mr. Hastings hopes

to double revenues during the second year of operation... Sales to vegetarians and health-conscious consumers look promising. But real growth is expected from the institutional market and the new international division.”

999. Brennan, Thomas J. 1983. Re: Soybean production in Austria. Letter to William Shurtleff at Soyfoods Center, Sept. 30. 2 p. Typed, with signature on letterhead.

• **Summary:** The closed door policies of the region make information gathering a difficult, if not impossible, task. Two soybean specialists in the region are: (1) Dr. Jerzy Szyrmer, Plant Breeding and Acclimatization Inst., Radzikow, Poland. He has been attempting to develop soybean varieties for home production and consumption; he has no commercial interests at all. (2) Prof. Dr. Victor F. Lishchenko, or his assistant, Dr. Leonid Kolesnikov, Food and Agriculture Dep., Inst. of U.S. and Canada Studies, 2-3 Khelbny per., Moscow, USSR. Lishchenko has just published a book in Russian on soybeans in the USSR.

“Now to address some of your questions. What causes swings in production and imports of soybeans and products? That is difficult to answer. Initially I would say imports are directly related to hard currency availability. The scientists and livestock production people recognize the value of soybeans, but don’t control the purse strings. That’s the central bank or foreign trade organizations. Soybean purchase requests go in the basket with all other import needs.

“Production swings are often caused by weather or disease. More commonly, however, I would attribute changes to government attitudes. For example, in Yugoslavia producers are paid nearly \$400/MT (metric ton = 1000 kg) to raise soybeans while they could buy C.I.F. at about \$250/MT. Soybean production has increased, but so has corn and wheat production. These products are now bartered for beans and meal. If hybrids could be developed, Hungarian production would soar, as corn production did in the 70’s. They want to grow soybeans, however, at this time, it is still more profitable to grow corn and small grains. The value of the crop per hectare far exceeds soybeans’ potential value. Certain state farms which have produced beans in the past want to increase production; however, the central government discourages this by setting low prices. Three or four years ago the attitude was different and soy production was encouraged. Talk to Bob Bergland about the Farmland / Eaton proposal for a soy crushing plant in Hungary.

“Statistics on soy protein utilization are hard to come by. Imports are usually handled by the Ministries of Food, where I have few contacts. Sales are also controlled by a small number of companies, e.g., Ralston, ADM, Staley, etc., which are not prone to reveal figures. USDA at one time listed TSP [textured soy protein] sales, but I haven’t seen any statistics for 1982 or 1983.” Address: Gatterburggasse 18/2/3, A-1190, Vienna, Austria. Phone: 37-41-18.

1000. McDougall, John A.; McDougall, Mary A. 1983. The McDougall plan. New Century Publishers Inc., 220 Old New Brunswick Rd., Piscataway, NJ 08854. 340 p. Foreword by Nathan Pritikin (8/83). General index and recipe index. 24 cm. [804\* ref]

• **Summary:** This carefully researched and documented book and cookbook argues convincingly in favor of a vegan diet that uses no animal products, that is low in fats, calories, and sodium, and rich in complex carbohydrates. Pages 89-90 give the percentage of calories from fats in various foods under 3 categories: low-fat vegetable foods (incl. oatmeal 16% of calories from fat, apple 9%, broccoli 9%), high-fat vegetable foods (incl. avocados 88% of calories from fat, almonds 82%, peanut butter 77%, sunflower seeds 76%, tofu 53%, soybeans 40%, wheat germ 27%, tempeh 25%), and animal foods (bacon 94%, t-bone steak 82%, frankfurters 80%, cheddar cheese 73%, egg 65%, tuna in oil 64%, milk [whole 3.5% fat] 49%, ice cream 49%, milk low-fat 31%, chicken [light-skinned] 18%, tuna in water 6%, buttermilk 3%, skim milk 2%).

Note: The author, however, argues repeatedly against the use of tofu and tempeh based on the “percentage of calories from fat” concept. His figures are correct but we and many nutritionists feel the basic concept, originally popularized by Nathan Pritikin, overlooks two key points: (1) the percentage of water in the food, and (2) the average serving size.

Page 198, in a section on rich [high fat] plant foods, states that tofu, tempeh, soybeans, textured vegetable protein (TVP), and miso contain excessive fat and most are high in calories. “The rich plant foods may account for a small portion of your daily food (less than 10 percent of your calories per day) but only after you have attained the level of health you are striving for. In general, these foods are more harmful than health-supporting. Never eat these foods if you have problems with your health that remain unsolved. If you begin using this group of foods and find that you are also gaining weight or getting back some of your old ailments, then stop eating these foods immediately.”

Appendix I, p. 322-28 contains a table listing the percentage of calories from protein, fat, and carbohydrates in many foods. It also gives the calorie concentration (in calories per gram) for each food; foods with a low concentration aid in weight-loss programs. Tofu has only 0.72 calories per gram, and soy sprouts only 0.46; both are low. No soyfoods are used in the many recipes in this book.

Note: According to a colleague, John McDougall suffered a stroke at age 19, which led to much of his current interest in diet and health. He is not a Seventh-day Adventist. Address: 1. M.D. Both: Near Kailua Bay, Oahu, Hawaii.

1001. *Herald and Review (Decatur, Illinois)*. 1983. Inventor sees use for TVP. Oct. 7. p. 14.

• **Summary:** William T. Atkinson, the inventor of TVP,

retired in 1976 as “senior research chemist for the Decatur-based Archer Daniels Midland Co. At age 72, he is a consultant to ADM. In 1970, he patented the TVP process... He later assigned the patent to ADM. Many companies, including A.E. Staley Mfg. Co., Cargill and Ralston-Purina, have purchased rights to use the process. The first products using the TVP process were sold in the early 1960s. They did not become common in grocery stores until the 1970s... Since about 1950, Atkinson had been researching ways to convert soybeans into food for human consumption...

“In 1935, the Detroit native went to work for Henry Ford. He and other researchers in Ford’s Greenfield Village developed a soybean-based fiber which was used for such products as automobile upholstery, clothing and, during World War II, felt... The soybean operation, and Atkinson’s services along with it, were sold in 1943 to The Drackett Co. and moved to that company’s Cincinnati, Ohio, facility. Atkinson began working for ADM in 1957 when it purchased Drackett’s agricultural division. He moved to Decatur in 1969. Drackett shifted its soybean research efforts to food applications in about 1950. This was because of the development of new synthetic fibers which were superior to soybean-based fiber in making clothing and other non-food products. As a result, Atkinson’s research effort shifted.” A photo shows Atkinson. Address: 852 Karen Dr., Decatur, Illinois 62526. Phone: 217-877-9048.

1002. *Eagle Grove Eagle (Iowa)*. 1983. Boone Valley Co-op names chief exec. Oct. 19. p. 5A.

• **Summary:** James W. Lindsay, age 49, of Decatur, Illinois, has been named general manager and CEO of “Boone Valley Cooperative Processing Association, Omaha, a newly-formed soybean processing cooperative,... Lindsay has been serving as manager, operations, of the Archer Daniels Midland Co., Decatur, Illinois. His appointment as manager of the new company is effective October 24, 1983.

“The new venture began operation September 1, 1983, following unification of the soybean operations of three regional cooperatives including Boone Valley,” Land O’Lakes, and Farmland Industries.

A native of Des Moines, Iowa, Lindsay attended Drake University [Des Moines, but did not graduate], then served in the U.S. Army from 1956-1958. Lindsay comes to Boone Valley after “a 25-year career in oilseed and grains sales, production and transportation. He began his career in the traffic department of Spencer Kellogg & Sons, Des Moines, Iowa, in 1958, moving through a series of traffic and sales positions. In 1961 he joined Archer Daniels Midland Company (ADM).

“With ADM, Lindsay held positions as general manager of soybean operations in Fredonia, Kansas, and Lincoln, Nebraska; manager, export sales; regional manager, soybean operations; vice president, soy processing group; president of ADM’s soy operations in Brazil; manager, general traffic

department; and vice president, corn sweetener operations, Cedar Rapids, Iowa; before assuming his most recent position in 1980.

One of the top priorities for the new CEO and board will be the selection of a new corporate name for the unified soy processing venture.

“The new company, headquartered in the First National Bank Building in Omaha, Nebraska, operates processing facilities in Eagle Grove, Sergeant Bluff, Fort Dodge, and Sheldon, Iowa; St. Joseph, Missouri; Dawson, Minnesota; and Van Buren, Arkansas.

“Lindsay will report to the Boone Valley Board of Directors,” whose names and affiliations are given.

1003. Atkinson, William T. 1983. History of work with soybeans and soyfoods, and the invention of TVP (Interview). Conducted by William Shurtleff of Soyfoods Center, Nov. 26. 6 p. transcript.

• **Summary:** In 1935 he began to work on soybeans with Robert Boyer under Henry Ford. He isolated proteins from the soybean and attempted to manufacture Azlon, an artificial wool, from spun soy protein fibers. Atkinson did the developmental work and spun the original soy protein fibers. Boyer’s work was to maintain the research lab and staff for Henry Ford, who made his office in the building. Henry Ford at that time was chairman of the board and had a lot of time to devote to agricultural research. His son, Edsel, was president of the company.

From 1935 to 1949 he worked with soy protein fibers to make fabrics, and developed molded industrial plastics. In 1949 he made a major switch to developing foods made from soy protein. Starting in 1949 he developed a food grade isolated soy protein in powdered form at Drackett. He thought it was an excellent product with potential applications in products such as Gerber’s Baby Food, malted milks, etc. This was the original food-grade isolated soy protein. After a lot of market research they found that nobody was interested in a food grade soy protein, even if it tasted good, and was the right color and price.

Atkinson began to work at ADM in 1957 when ADM purchased Drackett’s Agricultural Division. In 1958-59 ADM started selling this soy isolate to Consolidated Foods in Texas; it was quite satisfactory and practical. In about 1959 ADM made the mistake of selling about 25 pounds of it to some company that was working with Pillsbury to incorporate soy protein isolate granules into a chili product for Pillsbury. One year later they received notification from Swift and Ralston Purina that the product could no longer be patented because a year had elapsed since it was first sold. Discouraged, they began research on other ways of making foods from defatted soy flakes.

In 1961 he started extruding his isolated soy protein into plexilamellar material. Initially he used a rubber extruder, then changed to a plastics extruder. But ADM failed to patent

the extruded isolates since they were basically a commodities company with little knowledge in this patent area. No patent attorney or department was connected with the research group until about 1963.

Work on extrusion of defatted soy flakes started in about 1961.

Note: As of May 1991 William Atkinson was still alive but he had Alzheimer's disease and was unable to talk. Address: 852 Karen Dr., Decatur, Illinois 62526. Phone: 217-877-9048.

1004. Leviton, Richard. 1983. Long summary of trip to Europe sponsored by the American Soybean Association (Interview). *SoyaScan Notes*. Nov. 29. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Discusses: Euvepro in Italy, ASA in Italy, Alpro / Vandemoortele, British Arkady, the confusion of mung beans and soybeans, tofu made from soy protein isolates that doesn't develop a spongy texture when frozen, regulatory restrictions, Bernard Storup, tofu burgers, Prolait, Le Bol en Bois, ASA soybean program in England, desire in Eastern Europe for more meat, the many small private businesses in Hungary, Soyana's excellent products (Daenzer makes 5,000 lb/week of tofu in Switzerland), the Reformhaus chain, Vietnamese tofu shop in Dornach, less refrigeration at the distribution and retail levels in Europe has led to new packaging, soyfoods have started to appear in the big international food trade shows in Europe (e.g. ANUGA). Witte Wonder opened in 1981, now makes 1,000 lb/week of seitan. Cauldron Foods (UK) makes mostly tofu burgers, and has a lot of good technical innovations such as control panels. Cauldron also makes a fermented tofu spread. Dragon & Phoenix (UK) makes several tons of tofu a day. In July Wolfgang Furth-Kuby and Lucas Kelterborn (Germany) published the first issue of a European soyfoods newsletter titled *Rundbrief*. Paul Jones (UK) has 2 plants and makes 5,000 lb/week of tofu. One man from Cauldron Foods was Paul Jones' original partner. Full of Beans also makes miso.

Oct. 28. "I have an all morning meeting at ASA's headquarters in Brussels, Belgium, with Dennis Blankenship, Rita Batens, Roger Leysen, and Michael Martin. It is proposed that I chair the 1984 First European Soyfoods Conference to be held in late September, probably in Amsterdam. ASA agrees to be a sponsor and to help secure another 6 or so sponsors. ASA also agreed to finance the production and mailing of a bi-monthly European Soyfoods Newsletter." Address: Colrain, Massachusetts.

1005. Hopkins, Harold. 1983. The coming out of soybeans and whey. *FDA Consumer* 17(9):8-13. Nov.

• **Summary:** In 1982 America's soybean crop was worth \$12,500 million, compared with \$9,500 million worth of wheat and \$19,300 million worth of corn. The soybean is America's number one cash crop since corn is largely used to

feed livestock on the grower's farm. Various ways of using soybeans as food (soy flour, TVP, etc.) are discussed briefly.

Photos show: (1) Products in which soy oil is a major ingredient: Crisco shortening, Crisco oil, Wesson oil, Parkay margarine, Wishbone Italian dressing, Blue Bonnet margarine, and Hellmann's Real Mayonnaise. (2) Truckloads of soybeans being driven onto tilting ramps at a grain elevator; the trucks are anchored, the tailgate opened, then the ramp tilts backwards to dump the contents. Address: Editorial Director, FDA Consumer.

1006. Leviton, Richard. 1983. Report of soyfoods research and speaking trip to Europe with American Soybean Assoc., Oct. 8–Nov. 15, 1983. Colrain, Massachusetts. 82 p. Unpublished typescript. 28 cm.

• **Summary:** Describes visits to or discusses: ASA Belgium (Dennis Blankenship, Rita Batens, Michael Martin), Parma, Euvepro Conference, Parmalat, Guy Coudert and Dr. Sabin president of ONIDOL, Anuga, Jonathan, Société Soy (Bernard Storup, Jean de Preneuf), Le Bol en Bois, Budapest (Hungary), Agrimpex (Hungary), Migros, Sojalade / Die Genossenschafts Tofurei (Verena Krieger), Galactina, Soyana (Walter Daenzer), Alpro (Belgium; Phillip Vandemoortele and Christian Daems), Aarhus retail stores (Denmark), Witte Wonder, Manna, Cauldron Foods Ltd. (Phillip Marshall, Peter Fagan). Contains a directory of principal people contacted, listed by country. Those not mentioned above are: England: Wild Oats Wholefoods (Mike & Loes Abrahams), British Arkady Co. (Bill Pringle), Sunworld Inc. (David White), Health Foods Manufacturers' Association (Britain). Belgium: ASA, Le Paradoxe (Dota Figuera). China Trading, Ralston Purina (A.G. van der Horn), Premier Foods (Pauline Six Chan). Italy: Cargill SpA (Claudio Rocchietta), Parmalat SpA (Dr. Alberto Rota, Mr. Barilla), ASA (Sergio Monari). France: Robert Bonneterre, Aux Rayons Verts. Germany: European Federation of Health Products Manufacturers (Wolfgang Reinsch, Bad Homburg). Hungary: Central Food Research Inst. (Balint Czukor), Agrimpex (Potori Karoly). Denmark: Danish Turnkey Dairies, Det Gronne Kokken. Netherlands: Witte Wonder Products (Niko van Hagen), Manna (Hans den Hoed), Albert Heijn Supermarkets, Dutch Seed Crushers & Oil Processors Assoc. (Dr. C.J.M. Meershoek). Switzerland: Sojalade (Verena Krieger), Soyana (Walter Daenzer). Austria: Tom Brennan.

Bound in the back of the report are photocopies of labels and promotional materials (graphics) from the following companies: Witte Wonder, Société Soy (Cerny), Cauldron Foods, Manna, Dansk Tofu (Sdr. Vinge Gl. Mejeri, 8860 Ulstrup), Sojalade, Bonneterre, Mutter Erde, Genossenschaftstofurei Engel (Dorfplatz, Ottenbach).

Note: This is the earliest document seen (May 2005) that mentions Parmalat in connection with soy.

Migros (p. 18-19) is Switzerland's biggest supermarket / department store; it sells some whole wheat products.

Consumers oppose them for their size, but they attract foreign customers. Natural foods people are very political; they are opposed to Third World imports. Migros is expected to start selling tofu soon. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

1007. Leviton, Richard. 1983. Visit with Christian Daems and Philippe Vandemoortele at Alpro, Izegem, Belgium. Oct. 28 (Document part). In: R. Leviton. 1983. Report of Trip to Europe with American Soybean Assoc. 82 p. See p. 21. Unpublished manuscript.

• **Summary:** Vandemoortele doesn't like soy protein isolates in soymilk because of their poor image. A good tasting plain soymilk is possible if it is properly made. Isolate-based foods don't have the old basic food Oriental image. They also don't like isolates because, if the product's sales become large, the dairy industry will jump on the isolates for fakery and low quality. If used in place of dairy, the product would be called 100% synthetic. So not using isolates is a defensive measure. Codex Alimentarius (in Feb. 1984) will look at this issue. They may allow the term "soymilk" if a product is made from whole soybeans, but "soy drink" if it is made from isolates.

Alpro is opening a new soymilk plant in Ghent in Feb. 1984—the biggest in the world. They will make a 100% natural product from liquid and powder. [Note: Alpro never ended up making the powdered soymilk, says Philippe Vandemoortele 9/91.] This soymilk plant will have a sewage treatment system to recover all the water. The okara will be sold to the mixed feed industry. They will try to make soymilk powder at the same price as subsidized dairy milk and sell the powder for reconstitution. Alpro soymilk will be sold in supermarkets by Sept. 1984. They want high margins, will do promotions, and plan new products. Vandemoortele uses 50,000 tons of soybeans every 2 weeks [for all products, not just soymilk]. Alpro uses organically grown beans from France to make soymilk for Lima Foods in Belgium; these are 100% more expensive than regular soybeans. They will look to the USA and Asia for more markets for this output since the European market is too small. They will focus on areas that have a protein shortage or lactose intolerance. They have sold one turnkey soymilk plant to Madagascar. Alfa-Laval has not sold any soymilk plants recently due to currency problems.

Europe is such a bad market for soymilk, in part because of the many languages. With 10 European countries and languages, labeling requirements make it very complicated to market one food uniformly. Alpro sells more soymilk in north Belgium than in the south. There are more macrobiotics and more money in the north. This is typical for Europe as a whole with natural foods.

At ANUGA, British Arkady received lots of interest in their soymilk made from soy protein isolates, and health foods interest in their soy proteins. It is a Tetra Pack soymilk

in raspberry, banana, and strawberry flavors. They exhibited meats and biscuits using isolates. A.E. Staley was pushing isolates for bakery uses.

Michael Martin of the American Soybean Assoc. explains European regulation problems. Soymilk is taxed at 17% when it is traded in the EC. This Value Added Tax (VAT) would be only 6% if soymilk were reclassified as a health food instead of a liquid, powder, or paste. The VAT varies by country but is usually higher on beverages. Dinner with Martin at Le Paradoxe, a natural foods restaurant in Brussels. They serve "croquettes de soja, tofu brochette, and Tofu Ganmo (2 burgers). There are 6 natural foods restaurants in Brussels and all use tofu. The Japanese wanted Alpro to do their soymilk in Europe. They started soymilk in 1975 with the idea of bringing alternative vegetable sources to developing countries.

Vandemoortele's sales are now \$600 million/year. In 1936 Philippe's grandfather imported Manchurian soybeans for crushing in Europe. Vandemoortele, which now competes with Unilever in margarine, has a high level of expertise in R&D.

"We sample Alpro soymilk. One tastes thin, metallic, then gives a fatty mouthfeel. Another with sugar and vanilla is too sweet. I'm not impressed with them.

"Philippe is about age 35 and macrobiotically oriented in diet. Very confident, perhaps overly."

The tofu market is completely different from that of soymilk. Tofu is all education work and no comparison of products. With soymilk, there is comparison, but no education work needed. Philippe and Christian are concerned that most of the low-tech soyfoods industry and retailers in Europe are unskilled, small, and unprofessional. They don't want the average public to associate their soymilk with this vegetarian style. They want it to be seen not as a special food, but for everyone.

The European vegetable protein industry made a classic blunder. They put soy steaks in German supermarkets in the 1970s using TVP from British Arkady and ADM. Address: Colrain, Massachusetts.

1008. Leviton, Richard. 1983. Brief history of Soyana and Walter Daenzer (Document part). In: R. Leviton. 1983. Report of Trip to Europe with American Soybean Assoc. 82 p. See p. 19-20. Unpublished manuscript.

• **Summary:** Based on an interview with Walter Daenzer. Soyana is Switzerland's largest tofu company. Soyana's factory and office are at two very different locations in Zurich. Daenzer, who first became familiar with soy in New York City, has been a vegetarian for 15 years. He first saw soy as textured meats. The company began in 1980, when they started to re-package and sell TVP in consumer-size packets in Zurich. He did 1-3 demos/week that year. "De Gustation" then published his first cookbook about soy protein.

In Sept. 1981 he started to plan tofu production, then on 1 Feb. 1982 he began to produce tofu, and now produces about 6,000 lb/week (2,727 kg/week) of very firm tofu with 13% protein. Of this, it sells about 40 kg/month in bulk to the University of Zurich. The company, which has 5 production and 3 office employees, makes tofu 3 days/week and burgers 1 day/week. They use a Takai W30C system. Daenzer didn't want to use water-filled tubs for packing the tofu, so he uses a Tiromat form-fill-seal vacuum packer that gives tofu a 2-week shelf life (dated), but could actually go to 3 weeks.

Soyana also makes several shelf-stable tofu spreads and dips, packaged in tins, pasteurized, with a 6-month shelf life. "Zurich has the most innovative, dynamic people in Switzerland, I am told, with an international atmosphere; there is a widespread interest in trying new foods." Soyana displays the Biona symbol (a "Y") on its products in recognition of having passed the inspection by the federation of Swiss Reform Houses (about 400 shops). Biona is an association of Reform House stores, "VRSD," with 400 members, called in Swiss the Assoc. of Swiss Reform & Diet Specialty Stores. It corresponds to West Germany's Neuform which has 2,500 members. Only one-half of these shops have refrigeration facilities. The Soyana brand is sold only in Biona stores, whereas Soyana's Sojaquelle brand is sold elsewhere. The "Bioladen" stores are more like American natural foods stores. There are 60 of these in Switzerland; they are environmentally oriented, political, and wholistic.

Soyana's director says that Migros, Switzerland's leading supermarket chain with about 2,000 stores and 70-80% of Swiss food sales, is likely to sell tofu, but under its own label and possibly manufactured in-house. Migros has a bad reputation among food manufacturers, because Migros often starts selling a company's product, then if it becomes successful they make their own product and drop the original manufacturer. Co-op is the second largest Swiss food chain. Meanwhile, Soyana is active presenting cooking classes on tofu, has published two tofu cookbooks (each has sold 10,000 copies), and have a third at the printers, *Tofu Kur* (actually it ended up being titled *Schlank mit Tofu*) in full color, a weight-loss book with 127 low-calorie tofu recipes. It should be out in Nov. 1983. Weight Watchers International contributed 30 recipes to the book.

In April 1982 Daenzer tested Tetra Pak soymilk using taste panels and got good reports. The milk was made using his Takai system and flavored with honey. The Swiss Milk Industry Assoc. protested, asking the Tetra Pak company to stop working with Soyana, and they did. 95% of all Swiss milk is in Tetra Pak cartons so if people see a soymilk in such a carton they assume it is dairy milk. Address: Colrain, Massachusetts.

1009. Archer Daniels Midland Co. 1983. Annual report. P.O. Box 1470, Decatur, IL 62525. 33 p. 27 cm.

• **Summary:** Net sales for 1983 (the year ended June 30)



were \$4,291.957 million, up 15.6% from \$3,712.977 million in 1982. Net earnings for 1982 were \$110.185 million, down 28.1% from \$154.99 million in 1982.

Page 2:  
Operating report:  
"Meanwhile the governments of all other grain exporting countries are encouraging record grain production through subsidized exports. Some examples are:....  
"Brazilian export subsidies have made Brazil the cheapest source of soybean oil and meal, frozen poultry and alcohol.

"Spanish export subsidies have made Spain the third largest exporter of soybean oil and a growing exporter of soybean meal.

"Malaysian export subsidies for processed palm oil lower the whole world price structure for edible oils.

"Even Portugal has become a significant exporter of soybean oil and meal under the impetus of export subsidies."

Page 4 is all about Mr. Albert C. Toepfer. Below a nice portrait photo of him we read: "Mr. Alfred C. Toepfer, founder and Honorary Chairman of Alfred C. Toepfer International (ACTI). By successfully managing ACTI's growth during a turbulent period of over 60 years, Mr. Toepfer established his reputation as the 'Dean of World Agri-Trade.' He is also a respected worldwide philanthropist."

"Mr. Toepfer began his trading business in the Fall of 1919 purchasing excess hay and straw from the large farms of Salle, an area now divided by East Germany and Poland, and carting it to Hamburg where it was baled and exported to fiber deficient Western European nations. From this inception, Mr. Toepfer developed a powerful world trading organization which by 1979 shipped nearly 25 million tons of grain and feedstuffs. In 1979, Mr. Toepfer sold 50 percent of his company to Intrade, a partnership of 11 dynamic cooperatives representing over 1,700,000 farmers from both sides of the Atlantic. Their common goal was to combine reliable supplies with formidable demand through the efforts

of free and unrestricted trade.

“The following farmer-owned cooperatives are our new partners through Intrade in Toepfer International:

“Agway Inc., Syracuse, NY, U.S.A.

“Cebeco Handelsraad, Rotterdam, Netherlands

“Citrus World Inc., North Wales, FL [Lake Wales, Florida], U.S.A.

“Deutsche Raiffeisen Warenzentrale (DRWZ), Frankfurt/Main, Germany

“DSV-SILO-und Verwaltungsgesellschaft MBH., Duisburg, Germany

“Gold Kist, Atlanta, Georgia, U.S.A.

“Indiana Farm Bureau Cooperative Assoc., Inc., Indianapolis, Indiana, U.S.A.

“Landmark Inc., Columbus, Ohio, U.S.A.

“Land O’Lakes Inc., Minneapolis, Minnesota, U.S.A.

“Union Nationale des Cooperatives Agricoles de Cereales (UNCAC), Paris, France

“United Co-operatives of Ontario (UCO), Ontario, Canada

“Our opportunity to join Toepfer and the cooperatives in this partnership in 1982 was no coincidence. ADM buys nearly half of its raw materials from cooperatives. More than half of our European customers are cooperatives. Together, we now have annual sales of over 30 billion dollars and execute over 30 million tons of export trade. At any given time we may have as many as 100 vessels at sea carrying out our international business. It is from this base that Toepfer International intends to expand and prosper. ADM has benefited from the young and experienced management team of ACTI, personally trained by Mr. Toepfer, and reflecting nearly 65 years of accumulated trading wisdom. Led by Mr. Johanne Tonder (see color portrait photo, p. 1), Managing Director, the aggressive team of ACTI traders headquartered in Hamburg, Germany, Their 48 offices and agents around the world give them access to virtually every major supplier and customer on the globe. ACTI is one of the largest exporters of South American, Thai, Australian and European grain and agricultural products in addition to maintaining a solid North American base. This enables them to serve customers from all markets giving them essential flexibility of trade and access to lowest-cost suppliers at all times.

“Their sophisticated and disciplined approach to trading has enhanced ADM’s own operations. We have tied our communications systems together, forming a worldwide network with instant access to trading activity and information throughout the world. Their knowledge and experience in international currency exchange activities have already proven invaluable to our staff in the face of the crippling impact of the high U.S. dollar on U.S. products in the world markets.

“ACTI owns significant equities in various facilities around the globe. Equity interests in a tidewater oil mill in Germany as well as European flour mills, tapioca facilities in

Thailand and elevators and loading facilities throughout the world provide ACTI and ADM with enhanced trading and transportation opportunities.

“Through ACTI we enjoy strong trade ties with all nations. Our relationship will enable us to capitalize on the export subsidies provided by the governments of Brazil, Spain, Portugal, Malaysia, Argentina, the EEC and other countries for grain and processed products. While U.S. foreign trade policy has closed many doors to U.S. traders, it has opened the floodgate of production and trade for competing countries.

“ACTI has firsthand experience in coping with the impact of individual nations’ agricultural and trade policies. Together with ACTI we are now in a position to benefit from the abnormal trade flows created by subsidies and other government actions.

“More importantly, by having access to supplies outside the U.S. ADM through ACTI can maintain an image and record of dependability with all of the hungry nations of the world.”

Page 22: “Note 1–Business Acquisitions:

“Effective December 1982, the Company purchased for cash a substantial minority interest in Alfred C. Toepfer International and related companies, an international commodity trading group based in Hamburg, West Germany. The Company’s equity in the net earnings of Toepfer since the acquisition date is included in other income.” Address: Decatur, Illinois.

1010. Aarons, Theodore. 1983. Infringement against Schapiro patent #3,988,511, “Preparation of Water Dispersible Protein Products.” Berkeley, California. 3 p. Unpublished manuscript.

• **Summary:** Instantized (lecithinated) [isolated] soy protein is widely sold at retail stores. The three major manufacturers are ADM, Grain Processing Corp., and Ralston Purina (makers of Supro 630 and 660, which contain 91% protein and 0.5% lecithin). Ralston had an estimated 75% of the market in 1976. The market size in the USA is estimated to be at least 20 million lb a year. In 1983 Shaklee retailed 7 million lb, Fillmore Foods 4 million and Natural Formula 0.5 million. Other large retailers include General Nutrition, ABCO Labs (Concord, California), Winning Labs (Costa Mesa, CA), Shamrock Labs (Dublin, CA), Bestline products (Elk Grove, Illinois), National Vitamin (Hollister, CA), etc.

The Ralston Purina Annual Report (30 Sept. 1982) stated that the company’s sales of soy protein were \$144 million.

According to U.S. Dept. of Commerce figures, approximately 550 million lb of edible soy protein meal were produced in 1983; 44% of this meal is protein. Address: Protein Research Assoc., Berkeley, California.

1011. **Product Name:** MacSoy TVP?

**Manufacturer's Name:** MacSoy Lanka Pvt. Ltd. (Importer). Made in England.  
**Manufacturer's Address:** 51 Layards Rd., Colombo 5, Sri Lanka.

**Date of Introduction:** 1983.

**How Stored:** Shelf stable.

**New Product–Documentation:** Form filled out by Jane Gleason. 1988. She met with Mr. Davis Philip, Director 25 March 1988. The managing director is Wesley Philip. This company started in 1983, initially entirely with soy food products. Then they diversified. Davis Philip is looking for sources of TVP as the best quality English TVP is now priced too high. He is planning to produce TVP in Sri Lanka. "Initially the beans will be imported to ensure the most suitable strain, then later they can be grown here. Cost of the project: Rs. 4 million, half private, half government. He wants information of TVP equipment."

The company presently uses 1,000 kg/month of soybeans (purchased from a private source for Rs. 7/50–10/00 per kg) and 100 kg/month of soy flour (purchased from SFRC at Gannoruwa for Rs. 16/kg). Production is now stable. "Consumers purchase the product for nutrition and economy, especially low income earners, vegetarians, and those who have to take low cholesterol foods. Soy sauce and soya noodles are sold to all income earners."

1012. **Product Name:** MacSoy Soya Cafe.

**Manufacturer's Name:** MacSoy Lanka Pvt. Ltd.  
**Manufacturer's Address:** 51 Layards Rd., Colombo 5, Sri Lanka.

**Date of Introduction:** 1983.

**Ingredients:** (Not given on label).

**Wt/Vol., Packaging, Price:** 100 gm box. Retails for Rs. 7/5.

**How Stored:** Shelf stable.

**New Product–Documentation:** Form filled out by Jane Gleason. In March 1988 she talked with Mr. Davis Philip, the director. The managing director is Wesley Philip. The company began producing soyfood products in 1983, then diversified. Davis Philip is looking for sources of TVP as the best quality English TVP is now priced too high. He is planning to produce TVP in Sri Lanka. "Initially the beans will be imported to insure the most suitable strain, then later they can be grown here." Cost of the project: Rs. 4 million, half private, half government. He wants information on TVP machinery.

The company presently uses 1000 kg/month of soybeans (purchased from a private source for Rs. 7/50–10/00 per kg) and 100 kg/month of soy flour (purchased from SFRC at Gannoruwa for Rs. 16/kg). Production is now stable. "Consumers purchase the product for nutrition and economy, especially low income earners, vegetarians, and those who have to take low cholesterol foods. Soy sauce and soya noodles are sold to all income earners."

Note that this soy sauce is made for MacSoy by Eastern Food Products.

1013. **Product Name:** MacSoy Noodles. High Protein. Fortified with Soya.

**Manufacturer's Name:** MacSoy Lanka Pvt. Ltd.  
**Manufacturer's Address:** 51 Layards Rd., Colombo 5, Sri Lanka.

**Date of Introduction:** 1983.

**Ingredients:** Wheat flour (80%), soy flour (20%).

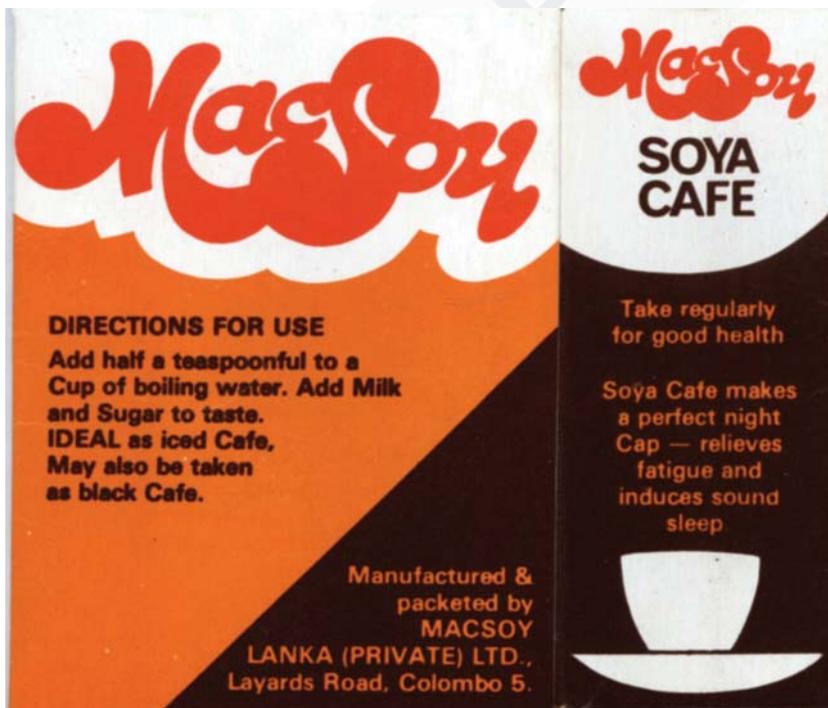
**Wt/Vol., Packaging, Price:** 350 gm plastic bag retails for Rs. 7/50.

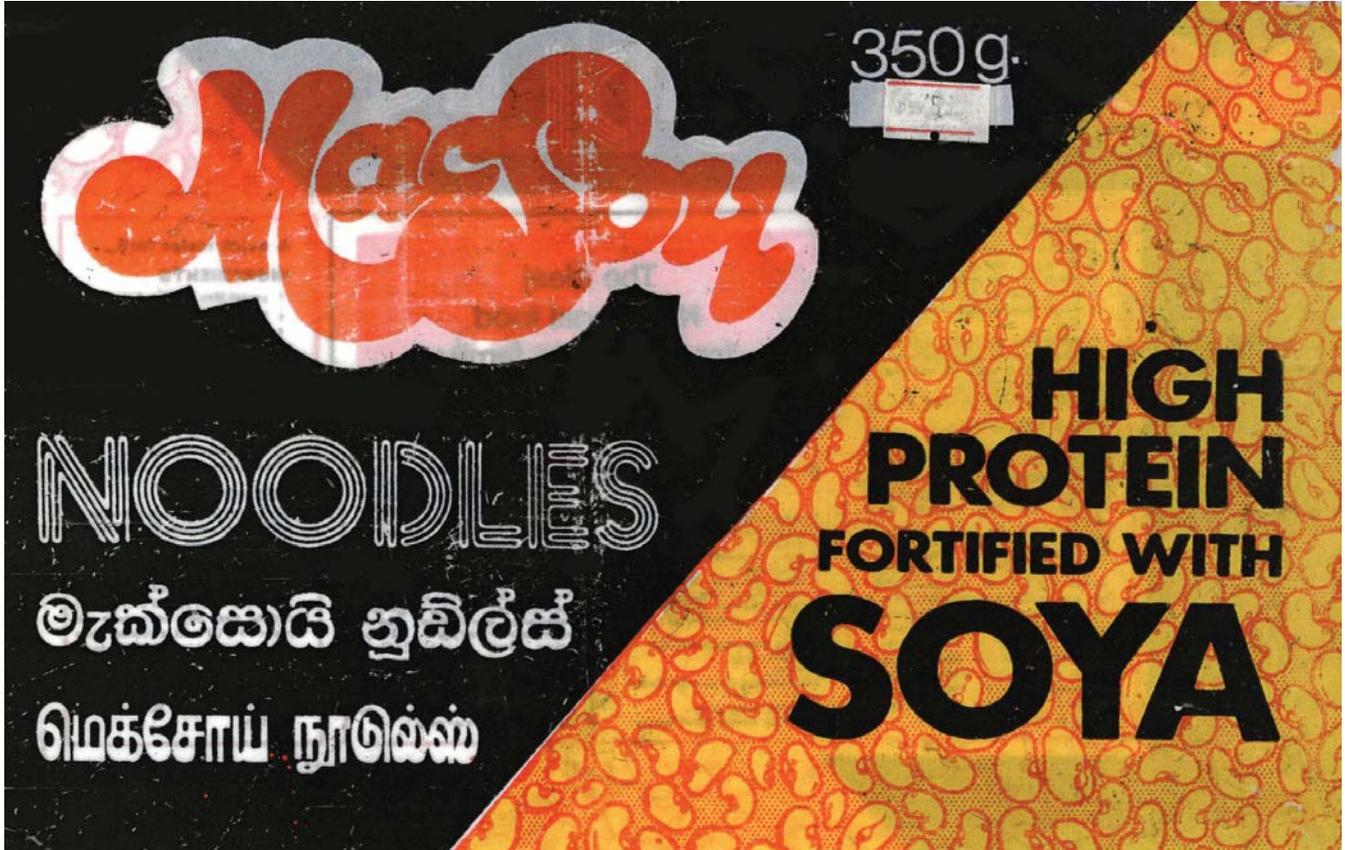
**How Stored:** Shelf stable.

**New Product–Documentation:** See next page. Form filled out by Jane Gleason. 1988. She met with Mr. Davis Philip, Director 25 March 1988. This company started in 1983, initially entirely with soy food products. In addition to Noodles and Soya Cafe, the company markets Mrs. Liu's Soy Sauce under a MacSoy Label, and an imported TVP and soya oil. Label for Noodles. 1983. 12 by 8 inch plastic bag. Dark brown and orange on white. In English and Sinhalese. "The Ideal Nutritional Food for the Whole Family." Gives a recipe with meat, vegetables, and soy sauce.

1014. **Product Name:** Ultra-Soy (Textured Soy Flour), and Textured Soy Protein.

**Manufacturer's Name:** PMS Foods, Inc.





**Manufacturer's Address:** 2701 E. 11th St., P.O. Box 1099, Hutchinson, KS 67504.

**Date of Introduction:** 1983.

**New Product–Documentation:** Soya Bluebook. 1987. p. 74. Note: PMS Food Inc. was formerly the part of Farmland and Far-Mar-Co that made TVP.

1015. **Product Name:** [Roasted Soybeans].

**Manufacturer's Name:** Societe Industrielle des Oleagineux (SIO).

**Manufacturer's Address:** Direction Proteines, Groupe Lesieur, 122 Av. du General De Gaulle, Boulogne-Billancourt, 92103, France. Phone: (1) 604 30 32.

**Date of Introduction:** 1983.

**New Product–Documentation:** Soya Bluebook. 1983. p. 77. Contact: Guy Deneck, Proteins Director.

1016. Driver, Christopher. 1983. *The British at table, 1940-1980*. London: Chatto & Windus–The Hogarth Press. xi + 212 p. Illust. Index. 23 cm. [220\* + 169 endnotes]

• **Summary:** Chapter 2, titled “The seven lean years,” discusses the period from 1941 to 1947 when food was rationed during World War II in Britain. An excerpt from the diary of Vere Hodgson for 7 May 1944 (p. 16) states: “I have an order with the Dairy for a pound of sausage... of soya bean flour.”

Chapter 6, “Tastes of Britain: the age of choice” includes

long discussions (p. 99-107) of the rise of vegetarianism and health / whole foods. Since “the free market in ‘flesh food’ returned to Britain it has been clear that shortages converted fewer people to vegetarianism than abundance does.”

“The distinction between vegetarianism and whole food is fine.” Almost all health food restaurants are vegetarian, but not all vegetarian restaurants serve health food. “By 1980, the profession of vegetarianism no longer sounded like the equivalent of wearing sackcloth and ashes.” Also discusses TVP and Worcestershire sauce (p. 99), “plant milk” and single cell proteins (p. 137-38), “TVP (texturised vegetable protein),” “meat extenders or substitutes of this kind, chiefly derived from the soy-bean,” “march up to Soho Chinatown and sit down to a dish of beancurd [tofu] made from the same soybean staple by a cottage industry process ecologically superior to the multi-million pound machinery and vast energy input that western culture tolerates for the sake of making fake steak,” “The first tentative flights of artificial protein may seem a long way from the precious mating calls of contemporary British foodies...” (p. 139).

World population continues to grow, and global food production must grow with it. “At some point not very far along that road, the role played in human diet by comparatively inefficient protein conversion machines such as cows, pigs and chickens, however intensively bred and farmed, would have to be diminished or abandoned. Here and there, the animals concerned would be relegated

to agricultural zoos, to be gazed at with wild surmises by people who obtained their nourishment chiefly from the protein output of those industrious worms, bugs, and funguses, appropriately flavored.”

Contains an interesting bibliography and endnotes.  
Address: England.

1017. Migliaccio, Janice Cook. 1983. *Follow Your Heart's vegetarian soup cookbook*. Santa Barbara, California: Woodbridge Press. 128 p. Illust. 24 cm.

• **Summary:** Contains more than 50 delicious vegetarian soups developed by the author and other creative soupmakers at Follow Your Heart's famous natural foods restaurants—and served to more than 1 million customers. Follow Your Heart began in 1970, founded by Michael Besancon, as a small vegetarian lunch counter in the corner of a natural foods store in Canoga Park, California. In 1973, Follow Your Heart grew to include the store as well. In 1976 it expanded and moved to a much larger store a few blocks away. In Sept. 1982 it opened a second store (without a restaurant) in Santa Barbara, California. Today Follow Your Heart employs about 100 people, all vegetarians. The head store is at 21825 Sherman Way, Canoga Park, California 91303.

The seasonings tamari and Dr. Bronner's "Balanced Protein Seasoning" (p. 17-18) and the "special food items" Bakon Bits, miso, textured vegetable protein (TVP, p. 24-25) are described and used in a number of recipes. Soy-related recipes include: Miso vegetable soup (with miso and tofu, p. 97). Oriental vegetable soup (with tofu and tamari, p. 103-05). Sweet and Sour Oriental Vegetable (with tofu and tamari, p. 120-21). Address: Southern California.

1018. Sams, Craig; Sams, Ann. 1983. *The brown rice cookbook: A selection of delicious, wholesome recipes*. New York and England: Thorsons Publishers Inc. 128 p. Illust. by Clive Birch. Index. 20 cm.

• **Summary:** Page 14 gives a description of soya sauce, shoyu, tamari, and miso. Soy-related recipes include: Miso soup with brown rice (p. 30). Miso sauce (p. 54). Tamari sauce (p. 55). Miso rice (p. 125). Craig Sams has also written a book titled *About Macrobiotics*.

"In the early 1960's many people in Europe and the U.S.A. were attracted to the ideas of Georges Ohsawa, a Japanese who had rediscovered the importance of dietary balance in traditional Eastern medicine." He taught macrobiotics, a dietary system in which brown rice plays a major role. "In the world of pop music the expression 'brown rice sandwiches' was used in association with the musicians who adopted wholefood diets." Then in the mid-1970s came the bran boom with an upsurge of interest in sources of dietary fibre, including brown rice.

Why did brown rice ever lose its once pre-eminent position to white rice? "The answer lies partly in the fact that while white rice will keep almost indefinitely, brown rice

should be fresh. It attracts insects once it has been husked, so it needs more care in storage and more attention to efficient distribution." White rice also cooks more quickly.

"Pythagoras would not let his students eat beans because he believed they inhibited the higher intellectual processes. However, it is likely that this was because the prevalent bean of classical Greece was the fava bean—harmless in itself but with a hard brown skin which, if regularly eaten, can lead to favism, symptoms of which are deterioration of vision and mental faculties."

1019. Sirtori, C.R.; Noseda, G.; Descovich, G.C. 1983. Studies on the use of a soybean protein diet for the management of human hyperlipoproteinemias. In: M.J. Gibney and D. Kritchevsky, eds. 1983. *Animal and Vegetable Proteins in Lipid Metabolism and Atherosclerosis*. New York, NY: Alan R. Liss, Inc. ix + 177 p. See p. 135-48. (Current Topics in Nutrition and Disease, Vol. 8).

• **Summary:** In 1972 at the Center for the Study of Hyperlipidemias at the University of Milano, early attempts were initiated to replace animal proteins in a diet with textured vegetable proteins (TVP) from soybean. The only purpose at that time of the substitution was to find a dietary substitute which would allow raising the ratio of polyunsaturated to saturated fatty acids beyond the limits reached by diets with animal proteins.

These 10-year old studies conducted on "hypocholesterolemic volunteers clearly showed that the simple substitution of animal proteins with TVP resulted in a significant decrease of plasma total and low-density lipoprotein levels." Address: 1. Center E. Grossi Paoletti, Univ. of Milan, Milan, Italy; 2. Beata Vergine Hospital, Mendrisio, Switzerland; 3. Il Medical Clinic, Univ. of Bologna, Italy.

1020. *Food Engineering*. 1984. These tasty frozen desserts can be high protein: Frozen desserts are reformulated to double the protein at much less cost. You can cut calories, too. And with good taste. 56(1):49. Jan.

• **Summary:** Dr. L. Steven Young is Manager of Product Applications for ADM Foods (1825 N. Laramie, Chicago, Illinois 60639). He has used Ardex Isolated Soy Proteins and Cornsweet 55 (55% high fructose corn syrup) and vegetable oils to replace the milk protein, lactose and sucrose, and butterfat in traditional ice cream. The new products can have twice the protein of standard ice cream at less cost. A good example of how ADM's formulations can succeed is in the Trinidad School Lunch Program. Young reports: "They're using a product that is actually a soy protein fortified milk made with MSNF (milk solids not fat), vegetable oil, isolate, and sweetener." This lower cost product has all the nutrition of milk and twice the protein.

1021. Hatch Natural Products. 1984. Catalog and price list.

746 Germanna Highway, Culpepper, VA 22701. 76 p. 28 cm.  
 • **Summary:** This company distributes natural foods from 48 manufacturers including Arrowhead Mills, Chico-San Inc., Eden Foods Inc., Edward and Sons Trading Co., Fantastic Foods, Great Eastern Sun, Kingdom Foods, Living Farms, Love Natural Foods, Mitoku (Great Eastern Sun), Virginia Soyworks, and Westbrae Natural. The company was founded by Mildred and Ira Hatch; Its history is given on page 1. The ingredients in each product are listed. They carry soybeans (p. 16-17), dinner mixes with TVP (p. 31-32), imported Japanese miso and soy sauce (p. 37-43), soybean oil (from Arrowhead Mills p. 60-61).

Concerning so-called “cold pressed” oils the catalog states: “The words ‘cold pressed’ on many oil labels is generally thought to mean that they contain natural oils processed by the low temperature and pressure method discussed above. But this is totally mistaken. The words ‘cold pressed’ are absolutely meaningless when used as an indication of quality. They have no bearing on how the oil was extracted or at what temperature it was removed. They appear only as a marketing aid which just confuses and misleads the consumer and may be found on oils that are chemically extracted, bleached, and deodorized. Reputable suppliers refuse to use the term on their labels.

“Oils are extracted by two methods: pressure and chemical solvents. Pressing is normally done by what is called an expeller press. Temperatures produced seldom fall below the 140° to 160°F range. Still, the oil produced at these temperatures loses little of its flavor and nutrition.”

Concerning soybean oil: “Soy oil’s flavor is the strongest of all the oils, and many people find the unrefined product unbearable. Its flavor is best described as fishy or painty and lacks stability.” Address: Culpepper, Virginia. Phone: (703) 825-4302.

1022. Daems, Chr. 1984. Re: Alpro’s commercial soymilk products. Letter to William Shurtleff at Soyfoods Center, Feb. 7. 1 p. Typed, with signature on letterhead. [1 ref]  
 • **Summary:** Alpro started commercial production of soymilk in 1979 at a plant in Izegem with a capacity of 6,000 liters/hour. Soymilk production in their new plant in Ghent is expected to start in May 1984. They have 3 brands of their own: Soyamel, Alpro, and Provamel. They also sell their soymilk to several companies who use their own brand. The best known are DE-VAU-GE in Germany and Granose Foods in England. They have recently started selling to Health Valley in California under the latter’s brand.

They sold a turnkey soymilk plant to a company in Madagascar, which started making soymilk in Jan. 1984. They were attempting to sell compact soymilk plants with capacities of 2,000 to 4,000 liters/hour to other countries. Address: Alpro, Zuidkaai 33, B-8700 Izegem, Belgium.

1023. Calvert, Francis E. 1984. Work with Ford and Drackett

on soybeans (Interview). Conducted by William Shurtleff of Soyfoods Center, Feb. 19. 3 p. transcript.

• **Summary:** Francis (Frank) Calvert was first introduced to soybeans after he went to Detroit. In about 1931, Ford arrived at the Chemical Plant in Greenfield Village (also a lab and a pilot plant), with a 20 pound sack of soybeans. He threw them on the workbench and said, “More people eat these than anything else. There must be something awfully good about them. Why don’t you fellows find out what it is.” They were already doing research on agricultural wastes and chemurgy, on almost every crop you could think of.

Their first problem was getting soybeans. There were none available. Within the next year or two they planted thousands of acres themselves. Ford plowed up a big field and planted quarter acre plots with different varieties. It was an enormous quantity. Even though they didn’t know what to do with them, it was Ford’s style. He did nothing small. They raised hundreds of quarter acre plots, testing different varieties.

Dr. Edsel Ruddiman, after whom Edsel Ford was named, was a nutritionist and pharmacologist. He ran the food laboratory and made lots of the foods served in the Ford cafeteria to Ford employees. They were first sold as samples, but didn’t sell well because of the flavor. From about 1932-33, the products included soy milk, soy cheeses, and soy ice cream and sherbets. Soynuts were also made in a counter-current fryer in rectangular buckets on a chain. The employees ate most of the products and tourists consumed some. Food was also served from the kitchen at the Wayside Inn in the village. Products were provided as a snack, but most were given as samples, and a few were sold.

Both Atkinson and Calvert, research chemists, reported to Boyer. Calvert left Ford in 1938 and went to Drackett. Boyer and Atkinson left later to do work on soy-based plastics.

ADM bought The Drackett soybean crushing plant in about 1957. Calvert went with ADM for about 5 years, until 1960-61. From 1962-74, he worked for Ralston Purina. In December 1958 Ralston purchased Procter & Gamble’s plant in Louisville, Kentucky, and were already somewhat involved with isolates; they began working with foods after 1962.

Ralston went into dietary products and infant formulas in about 1963-64, supplying soy protein isolates to most of the infant formula manufacturers such as Miles and Wyeth Labs. Ralston, Loma Linda and Worthington were the biggest suppliers of infant formula from 1962-74.

Don Walker, Vice President of Ralston Purina, took a strong interest in soy protein. Ralston took the lead primarily because of the strong interest and leadership of Hal Dean, then Chairman of the Board and CEO. Dean was the key motivating force from the early 1960s. He firmly believed in and supported soy protein development.

Ford was the father of the soybean industry in the U.S.

He had an impact just through his interest in soybeans. He planted soybeans and promoted and merchandised them in the same way he promoted the industrial barn at the World's Fair in Chicago. Ford set up an extraction plant and actually extracted oil and molded gearshift balls at the Industrial Barn at the Fair. People couldn't believe their eyes! Ford was the single largest soybean grower in the U.S. at that time.

Note: Frank Calvert passed away in about 1986.

Address: 1513 Northlin, Kirkwood, Missouri 63122. Phone: 314-822-3187.

1024. **Product Name:** Granose Soya Dessert (Vanilla, or Chocolate).

**Manufacturer's Name:** Granose Foods Ltd. (Marketer). Made in Belgium by Alpro.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1984 February.

**New Product–Documentation:** Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by DE-VAU-GE, was introduced in 1981 in Vanilla, Chocolate, Strawberry, and Banana flavors. The desserts were made by Alpro in Feb. 1984.

Form filled out by Philippe Vandemoortele of Alpro. 1991. Sept. 4. The desserts were first made for Granose by Alpro in Feb. 1984 in Vanilla and Chocolate flavors.

1025. Khan, L.M.; Hanna, M.A. 1984. Expression of soybean oil. *Transactions of the ASAE (American Society of Agricultural Engineers)* 27(1):190-94. Jan/Feb. [7 ref]

• **Summary:** A maximum oil yield of 85.71% was obtained from ADM soybean flakes. The Brady crop cooker flakes showed satisfactory oil yields (60%). Address: Agricultural Engineering Dep., Univ. of Nebraska, Lincoln.

1026. Shurtleff, William; Aoyagi, Akiko. 1984. Brief history of Alpro in Belgium (Document part). In: Shurtleff and Aoyagi. 1984. *Soy milk Industry and Market: Worldwide and Country by Country Analysis*. Vol. 1. 177 p. See p. 122-23.

• **Summary:** "In 1975 Alpro, the Protein Division of the Vandemoortele group started making soymilk; they decided to introduce alternative, vegetable proteins to developing countries. This Group, established in 1879, by the 1980s ranked as one of Europe's largest food processing companies in the fields of edible oils and fats, and protein foods. In 1978 the Group employed over 1,700 people and had annual sales of over \$600 million. In 1979 Alpro started commercial production of soymilk at a plant in Izegem with a capacity of 6,000 liters/hour. They also sold a turnkey soymilk plant to Madagascar (it started production in January 1984) and were attempting to sell compact soymilk plants with capacities from 4,000 to 8,000 liters/hour to other countries. In May 1984 Alpro opened a new soymilk plant at Ghent, reputed to be the largest in the world. The 100% natural soymilk is

made from whole soybeans, not soy protein isolates, and is sold under three brands: Soyamel, Alpro, and Provamel. Alpro will look to the U.S. and Asia for additional markets for this product, since the European market is small. They plan to focus on areas with protein shortages or lactose intolerance. In October 1983 an Alpro representative visited the USA and lined up Health Valley in Los Angeles as a master distributor. In early 1984 Alpro got distribution on the East Coast of the USA. Alpro sells quite a bit of its soymilk to other European food companies, which sell it under their individual brands. DE-VAU-GE in West Germany and Granose in England, for example, sell plain and carob soymilks (made by Alpro) in 500 ml packs. The main figures behind Alpro are Philip Vandemoortele (Managing Director) and Christian Daems (Marketing Manager)." Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

1027. Wolf, Walter J. 1984. The soy protein isolate industry in America in 1983 (Interview). *SoyaScan Notes*. March 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Dr. Wolf talked with Dan Hooten who is now with Land O'Lakes, but who used to be with Dawson Mills. Land O'Lakes bought Dawson Mills several years ago. The following are Hooten's estimates of the capacities of America's largest isolate manufacturers in 1983:

Ralston Purina, 70 million lb/year. The company has 3 plants: Prior, Oklahoma, 30 million lb/year. Louisville, Kentucky, 20 million lb/year. And Memphis, Tennessee, 20 million lb/year.

ADM (Archer Daniels Midland), 20-25 million lb/year. Grain Processing Corp., 14-15 million lb/year.

Thus the total capacity of the top 3 U.S. companies is 104-110 million lb/year (47,200 to 49,800 metric tons/year). Some of these isolate products are exported. A.E. Staley Mfg. Co. began to make isolates about 1 year ago. Hooten does not know their capacity. Address: Northern Regional Research Center, Peoria, Illinois.

1028. Shurtleff, William; Aoyagi, Akiko. 1984. History of soy protein concentrates, isolates, and textured soy protein products. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 25 p. March 4. Unpublished typescript. Available online at [www.soyinfocenter.com](http://www.soyinfocenter.com).

• **Summary:** [www.soyinfocenter.com/HSS/protein\\_concentrates.php](http://www.soyinfocenter.com/HSS/protein_concentrates.php)

A comprehensive history of the subject. Contents: Definition of types of products. Part I: History of modern soy protein products from origin to 1964. Soy protein isolate: Tofu, Nagel in New York 1903, Beltzer in 1911, Ajinomoto in 1919, Cone and Brown patent in 1928, Glidden (first plant in U.S. for production of industrial grade soy protein isolate) in 1935, first study of use of soy isolates in food (Woodruff at University of Illinois, 1938), Glidden first company in the West to produce a soy protein isolate for use in food (1939,

enzyme-modified), Glidden first with large-scale production of non-enzyme modified isolates (1957), Worthington Foods introduced Soyamel in 1952 (first soymilk based on isolate). Soy protein concentrates: First developed and introduced in Germany in 1925, first commercial food-grade concentrates and first patent from Griffith Laboratories in 1959. Textured soy protein products: Developed in China 1,000 years ago, made from tofu or yuba, earliest Western meat analogs developed by John Harvey Kellogg about 1896 (without soy), first synthetic industrial protein fiber (Lanital, made from casein) introduced in Italy 1936, first industrial (non-food) soy protein fibers in 1938 from Robert Boyer of Ford Motor Co. (used for upholstery), Boyer got patent for use in food (1951), rights purchased by Worthington, Dr. Harry Miller's soya loaf in 1939, Worthington first to produce a meat analog based on spun soy protein fibers in 1960, textured soy flour (TSP or TVP) introduced as food ingredient in U.S. in 1964.

Part II: History of modern soy protein products in the U.S. from 1965 to 1981. 1964 Belden report from Harvard Business School *Protein Paradox*. Commercial Protein Foods Studies Program of the U.S. Agency for International Development (AID) encouraged U.S. firms to develop protein foods for the Third World in 1967. General Mills Bac-O's test marketed 1966. Producers. February 1971 breakthrough when USDA authorized use of TVP in school lunch programs. 1972 *Soybeans. Chemistry and Technology*, edited by Smith and Circle, contained all the research on nutrition and processing up to that time. 1973 high beef prices led to beef-soy retail blends. Appearance of TSP cookbooks, starting in 1971. First World Soy Protein Conference held in Munich, Germany, in 1973. In 1974 Miles Laboratories/Worthington Foods introduced Morningstar Farms meat analogs, the first soy protein meat analog entrees marketed to mainstream America. Textured soy concentrates and other concentrate developments. New developments with isolates. New flavorings. New textured soy flour development. 1978 Keystone Conference on soy protein and human nutrition sponsored by Ralston Purina. Problems with government regulation.

Part III: History of modern soy protein products outside the U.S. and Europe (1960-1981): Japan. China. Other Asia: Philippines, India, Sri Lanka. Latin America: Colombia, Mexico. Address: Lafayette, California. Phone: 415-283-2991.

1029. *Wall Street Journal*. 1984. Archer Daniels to acquire Illinois soybean plant. March 30. p. 40, col. 4.

• **Summary:** "Archer-Daniels-Midland Co. said it has agreed to purchase a soybean processing plant in Taylorville, Illinois, from Continental Grain Co. The value of the transaction wasn't disclosed by the processing concern.

"ADM said it will operate the plant, which includes a 3.5 million bushel elevator complex, as a grain storage

facility. Continental Grain previously said it would close the 90-employee plant by the end of the month because of sluggish demand for soybean products."

Note: In 1929 Funk Bros. Seed Co. bought a feed mill and elevator at Taylorville, Illinois, and began operation in 1930. It was later acquired by Allied Mills.

1030. Beversdorf, Wally D. 1984. Soybean breeding developments and new varieties [in Canada]. In: Ontario Soya-Bean Growers' Marketing Board. ed. 1984. Ontario Soybean Symposium. Chatham, Ontario, Canada: OSGMB. 319 p. See p. 36-48.

• **Summary:** A similar soybean symposium held in Sept. 1973 at Ridgetown Agricultural College of Agricultural Technology (Ridgetown, Ontario) played an important role in the development of soybean breeding in Canada. During the past 10 years, soybean production in Canada has more than doubled, thanks in large part to improvement in varieties, but also to improved management practices, and increasing demand for soybean products. Since 1973 early-maturing varieties have greatly expanded the area adaptable to growing soybeans. One of the major successes in soybean breeding during the past decade has involved the improved tolerance of soybeans to phytophthora root rots.

Traditionally 5 counties have produced most of the soybeans in Ontario and in Canada. Since 1973 soybean production outside this 5-county area has grown by 180%. Canadian varieties are often defined by the number of heat units (HU's) they require to mature properly. Certain "soybean Heat Unit Areas" are also defined; the best known are the 2600, 2800, 3100, and 3400 Heat Unit Areas. The southern tip of Ontario gets about 3100 to 3500 heat units. The 2600 soybean Heat Unit Area is generally the coldest and farthest north, and soybean yields from this area are generally lower than from warmer areas, in part because the number of days to maturity is less. In 1974 only 3 soybean varieties were recommended by OMAF (Ontario Ministry of Agriculture and Food, Publication 296) for the 2600 Heat Unit Area: Altona, Vansoy, and Hardome. But in 1984 six varieties were recommended for this Heat Unit Area: Maple Presto, Maple Amber, McCall, Maple Arrow, Bicentennial, and Evans.

All soybean varieties recommended by OMAF were developed by public institutions. The first privately developed variety, XK505 (from Maple Leaf Mills, Ltd.) appeared as a recommended variety in 1975. In 1984, 24 of the 35 varieties recommended by OMAF were developed in the private sector, by six companies breeding or evaluating soybean varieties in Ontario.

Future prospects for cultivar development: Progress in developing sources of low linolenic acid soybean oil suggests that within 10 years soybean varieties will be able to produce oil that no longer requires hydrogenation and winterization for salad oils. "This should result in reduced

refining costs and the elimination of *trans* isomers of fatty acids, which have been implicated in elevated blood serum cholesterol.” Address: Crop Science Dep., Univ. of Guelph, Guelph, ONT, Canada.

1031. Caty, Thérèse. 1984. Dossier: Le soja [Dossier on soyfoods in France]. *France Dietétique*. Feb/March. p. 24-31. [Fre]

• **Summary:** This extremely interesting article gives an introduction to the various soyfoods, then list all known soyfoods products sold in France, complete with the brand, product name, ingredients, nutritional composition, weight or volume, and packaging. The last half of the paper is a French translation of a paper titled “The American boom in traditional soy products,” presented by Richard Leviton on 11 Oct. 1983 at a conference in Parma, Italy.

The following products, manufacturers/marketers (and brands) are listed: 1. Whole soybeans and flour: Lima (Organic soybeans, organic whole soy flour). 2. Textured soya: Charusse, Soyavit. 3. Convenience prepared foods for vegetarians: Pural (Frika Vita, Sojafleisch, Pasta Chuta, Sojavite, Soja Mignon, Sojanelles, Sojanelles épicées), Hera (Croc Meal, Herameal, Végémeal, Potage), Fritini (Aux herbes). 4. Liquid soymilk: Celnat (Soyo), Lima, Pural (Sojlactis), Sapov (Sojal), Provamel (Soya Drink, Soya dessert choco [a pudding, made by Alpro in Belgium]), Naturvit (Soyalet, Soyalet sans sucre). 5. Tofu: Le Bol en Bois (Koya-dofu), Soy (Tofu, Croque Tofu [6 types]). 6. Tempeh: Traditions du Grain. 7. Miso: Celnat (Brown rice miso imported from Japan, Barley miso), Lima (Hatcho miso, barley miso). 8. Soy sauce: Celnat (Shoyou), Lima (Tamari, Tamari Shoyu). Address: France.

1032. Davis, C. Murray. 1984. The state of the soybean crushing industry [in Canada]. In: Ontario Soya-Bean Growers’ Marketing Board. ed. 1984. Ontario Soybean Symposium. Chatham, Ontario, Canada: OSGMB. 319 p. See p. 103-12. Held March 18-20.

• **Summary:** In Canada, “the largest single soybean crusher is Victory Soya Mills, located in Toronto, rated capacity 1,350 tpd (tons per day) or 480,000 tpy (tons per year). Next is Maple Leaf/Monarch at Windsor, rated at 1,300 tpd or 462,000 tpy. Finally, Canadian Vegetable Oil Products in Hamilton, rated at 1,200 tpd or 1,367,000 tons/year.”

“The soybean crushing industry created with private capital, until recently, progressive and profitable all without one dollar of government involvement, has been ignored, abused and generally kicked from pillar to post for the last 5 years.” This industry has come under tremendous pressure from and been seriously damaged by market domination of canola oil financed through massive federal and provincial government subsidies. “Fifteen years ago, rapeseed oil was unknown—today, Canola controls almost 55% of the refined / deodorised vegetable oil in Canada.”

The most blatant subsidy is the freight rate structure that allows western Canadian oil access to eastern Canadian consumption. The Crow Bill (which allows canola oil reduced and subsidised freight rates to Thunder Bay, in western Ontario) and the Minister of Transport threaten to shut down Ontario’s soybean crushing industry. The author urges abolition of all subsidies. “Let the marketplace decide. We currently have a heavily subsidized Canola industry losing enormous amounts of money at the expense of a self-supporting, and up until recently, profitable soybean industry. This is insanity. Compounding this are overpriced Canadian soybeans relative to soybean costs for competitive U.S. crushers.”

The words “soyoil” (p. 3) and “soymeal” (p. 6) are mentioned.

Note: The author began his career at Victory Soya Mills in 1962. Address: Manager of Commodity Operations, Victory Soya Mills, Toronto, ONT, Canada.

1033. Rennie, J. Clare. 1984. A look at the progress of soybeans [in Canada] in the last decade. In: Ontario Soya-Bean Growers’ Marketing Board. ed. 1984. Ontario Soybean Symposium. Chatham, Ontario, Canada: OSGMB. 319 p. See p. 22-35.

• **Summary:** “In 1893, Professor C.A. Zavitz, crop specialist at the Ontario Agricultural College, grew probably the first field of soybeans, as a replacement for cow peas which had failed, and set in motion a 30-year variety testing program for Ontario farmers. Canada’s first new variety, OAC 211, was introduced in 1923; this was followed in the 1930’s by three early maturing ones, A.K., Mandarin, and Capital, introduced by Dr. Dimmock of the Harrow Dominion Experimental Station. A colleague, Dr. Cass Owen, was the originator of Harosoy, introduced in 1951. It quickly became a leading Ontario variety as well as the main one grown in the American soybean belt for many years...”

“However, soybeans were not a major crop in Ontario, or for that matter in the USA, until the Second World War. What was grown was largely for green manure and forage. The statistics on soybeans in Ontario were not even given separately until 1942. The predominance of linseed meal and cottonseed meal and oil was too strong to be easily overcome by another crop. The wartime demand for an easily available source of vegetable oil and protein gave soybean production its first big boost...”

“In Ontario, the production figures for the last decade show... sharp increases. Aside from demand which made it economically attractive for farmers to grow soybeans, this increase has been made possible by a breeding and management research program to extend Ontario’s soybean area and to maintain yields at competitive levels. Until the late 1970’s, virtually all of the province’s soybeans were grown in Essex, Kent, Lambton, Middlesex, and Elgin Counties. With new early maturing, high-yielding varieties

adapted to the growing conditions in Central, Western and Eastern Ontario, production in these areas is increasing rapidly. The number of hectares planted has risen from 4,010 ha in 1972 to 61,500 ha in 1982...

“The Ontario breeding program has emphasized not only early maturity and high yields, but also resistance to disease and to pod shattering, and good nodulation capabilities. Under the direction, since 1976, of Dr. Wally Beversdorf... the program is rapidly coming of age. Maple Arrow, a high-yielding variety adapted to 2,600 heat unit areas, was developed at the Central Experimental Farm, Ottawa. Its introduction in 1976 was the shot in the arm needed to expand the soybean-growing area, and the OMAF/Guelph program is aimed at continuing this expansion...

“In the last decade, we have largely overcome nodulation problems, with the introduction of granular inoculants in the mid-1970’s. These inoculants, which have proven particularly effective in first-time soybean fields...

“The introduction of a flexible floating cutterbar has further cut harvest losses, which had been as high as 30 percent with rigid cutterbars and conventional combines...

“With the establishment of the [Maple Leaf Monarch] crushing facility at Windsor [in July 1979], the province’s daily crushing capacity has increased by 300 tonnes per day, and the three crushing plants at Toronto, Hamilton, and Windsor are crushing about 35 million bushels of soybeans each year.”

Table 4 shows that in 1972 only 9,909 acres (2.5% of the total Ontario province planting) took place outside the traditional five-county region. By 1982 this had increased to 151,964 acres (17% of the total planting)—largely due to the development of new short-season varieties in the “Maple” series, which matured in 100-108 days at 2200 to 2550 heat units. Address: Asst. Deputy Minister of Technology and Field Services, Ontario Ministry of Agriculture and Food (OMAF).

1034. Mjeda, Luka. 1984. Soyfoods and vegetarianism in Yugoslavia (Interview). *SoyaScan Notes*. May 6. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Luka, who is a vegetarian, has arranged for a translation of *The Book of Tofu* by Shurtleff and Aoyagi into Yugoslavian. There is a good book on vegetarian cooking in Yugoslavia written by Ljubo Grubor of Zagreb. About the only soy products available in Yugoslavian food stores are whole soybeans. There are about 120 natural food stores in the country, mostly in the western part. They sell herbs, cheeses, milk, and honey. He has never heard of TVP, or of the use of soy flour in bread.

Yugoslavia is the most liberal and capitalistic country in Eastern Europe. There is a lot of self-management. In 1951 the first factory was given to the workers and in 1953 all factories were given to the workers. Address: Photographer-Journalist, Skokov Prilaz 2, 41020 Zagreb, Yugoslavia.

Phone: 041/672-393.

1035. **Product Name:** SoyBoy Soymilk Ices (Non-Dairy Ice Cream).

**Manufacturer’s Name:** Regular Tofu Company Ltd. Made in Leicester, England, by Rossa Ltd.

**Manufacturer’s Address:** 16 The Halcroft, Syston, Leicester, England LE7 8LD.

**Date of Introduction:** 1984 May.

**How Stored:** Frozen.

**New Product–Documentation:** Letter from John Holt. 1987. Aug. 19. “First introduced here approx. May 1984.”

1036. **Product Name:** Heraveg Vegetarian Main Meals [Beef Style, Mince, or Chicken Style].

**Manufacturer’s Name:** Haldane Foods Ltd.

**Manufacturer’s Address:** Units 16 & 20, Long Furrow Trading Estate, East Goscote, Leicester LE4 8XJ England.

**Date of Introduction:** 1984 June.

**How Stored:** Shelf stable.

**New Product–Documentation:** Food Report (Lehmann). 1984. June. Advertised in health food magazines. In dry form, packed in cartons, they are claimed to produce no soya aftertaste.

Note: This is the earliest known commercial soy product made by Haldane Foods Ltd.

1037. Leneman, Leah. 1984. The foods that are soya good. *Vegetarian (The)*. May/June. p. 12.

• **Summary:** “Soya foods are playing an increasingly important role in the American health food movement, a positive trend which hopefully will be echoed in the U.K. By soya foods I do not mean TVP (which has never really caught on in a big way in the States), but tofu (soya bean curd) and tempeh. These are low-cost, low-technology products simple enough to make in your kitchen.” In America the movement away from dairy products is for reasons of health rather than ethics. In Britain, ethics come first. Cholesterol is the real bugbear to Americans. In New York the author tasted a soft-serve tofu ice cream with a “creamy texture I would not have believed possible in a dairyless product.”

1038. **Product Name:** SoyBoy Tofu [Regular, or Silken].

**Manufacturer’s Name:** Regular Tofu Company Ltd.

**Manufacturer’s Address:** 16 The Halcroft, Syston, Leicester, England LE7 8LD.

**Date of Introduction:** 1984 June.

**New Product–Documentation:** Ad in *The Vegetarian* (England). May/June. p. 12.

1039. **Product Name:** SoyBoy Tofu Burger [Savoury, or Chili Flavour].

**Manufacturer’s Name:** Regular Tofu Company Ltd.

**Manufacturer's Address:** 16 The Halcroft, Syston, Leicester, England LE7 8LD.

**Date of Introduction:** 1984 June.

**New Product–Documentation:** Ad in *The Vegetarian* (England). May/June. p. 12.

1040. **Product Name:** SoyBoy SoySage (Meatless Sausage).

**Manufacturer's Name:** Regular Tofu Company Ltd.

**Manufacturer's Address:** 16 The Halcroft, Syston, Leicester, England LE7 8LD.

**Date of Introduction:** 1984 June.

**New Product–Documentation:** Ad in *The Vegetarian* (England). May/June. p. 12. "High fibre protein slices."

1041. *Soya Bluebook*. 1984. Industrial product manufacturers, and non-food uses of soy oil in the USA. p. 80-95, 205. Aug.

• **Summary:** Product categories are: Adhesives/coatings (7 U.S. companies / 6 foreign companies), industrial lecithin (8/43), industrial soy flour (4/25), industrial soy oil (10/47), paints & varnishes (5/3), resins (5/3), soaps (0/30), soy sterols & tocopherols (3/11), soybean fatty acids (6/36).

In 1982, nonfood utilization of soy oil totalled 205 million lb., or 2.1% of total U.S. soy oil usage (97.9% was for foods). Of this, 96 million lb was used for resins and plastics, 38 millions lb for paint and varnish, 16 million lb for fatty acids, and 55 million lb for other nonfood uses.

Manufacturers of soy sterols and tocopherols include—  
In the USA: Distillation Products Industries, Kingsport, Tennessee 37662; Durkee Foods Div. of SCM Corporation, Cleveland, Ohio 44115 [Formerly The Glidden Co.]; Henkel Corporation, Minneapolis, Minnesota 55435. In Japan: Ajinomoto Company Inc., Chuo-ku, Tokyo; The Nisshin Oil Mills Ltd., Chuo-ku, Tokyo. In Europe: Cargill B.V., Amsterdam, Netherlands; Industrie Chimiche Italia Centrale S.p.A. (ICC), Ancona, Italy; Italiana Olii e Risi S.p.A., Ravenna, Italy; S.I.O. S.p.A. (SIO), Modena, Italy. There are also 3 manufacturers in Brazil and one in India.

1042. American Soybean Assoc. ed. 1984. First European Soyfoods Workshop, Proceedings. Brussels, Belgium: ASA. 129 p. Held Sept. 27-28 at Amsterdam, Netherlands (Krasnapolski Hotel). No index. 30 cm. [38 ref]

• **Summary:** See next page. Contains 9 papers, mainly on soyfoods in Europe. A directory includes company name, person's name, and address for the conference's 105 participants. Organizations represented include Caderas de Kerleau, Aarhus Oliefabrik (Aarhus C, Denmark), Aixagri, Alfa-Laval, Alfa-Laval Food (John Wilson), Alpro N.V. (Ph. Vandemoortele, Ch. Daems), Alpura Koreco Ltd., Aros Sojaprodukter (Ted Nordquist), BRT, Cargill (R. Sevink, Amsterdam, Netherlands), Cauldron Foods Ltd. (Mr. Marshall, Mr. Fagan), Centraalbureau Voor Schimmelstruct,

Centro Studi Proteini Vegetali, CETIOM ONIDOL (Emmanuel Prudom, Toulouse, France), Chemex, Comite Eetbaar Plantaardig Eiwit (Hague, Netherlands), Consumers' Association, Condimenta, Cooperative Occitane, Danish Turnkey Dairies Ltd., Delisana Natuurvoeding, Deutsche Gesellschaft für Ernährung [2 different addresses], DE-VAU-GE Gesundheitswerk (Dr. W. Lubosch), Dragon & Phoenix Ltd. (Donald Lysen), E & R Chemicals, Edelsoja GmbH (K.O. Tielker), E.M. Chajuss Ltd. [Daniel Chajuss], Fa L.L. Frank (Missendorp de Bie), Fed. Nat. Syndicats De Dietetique, F.I.M. Housterman, Food Industries, Food Manufacture, F.M. Lin, Galactina Ltd. (P. Speck), Gebruder Bauermeister, Gemint, Giulini Chemie, Goorden Import Cy, Henselwerk GmbH (Rolf Berger), Heuschen (Mr. Heuschen, Deurne, Netherlands), Itona Products Ltd. (Mr. and Mrs. Hampson), Ivel, Keuringsdienst Voor Waren, Libelle, Lucas Meyer (Axel Schulte), Masterfoods, Melkunie Holland, Niticel B.V., ONIDOL (Guy Coudert), Paksoy TIC, Paul's Tofu (Paul Jones), PFW Nederland BV, Plumrose FDD, Premier Foods, Purina Protein Europe (A.G. van der Horn & Willy Naesens, Zaventem, Belgium), Royal Neth. Dairy Federation, Ruitenbergh N.V., Sanico N.V., S.G.A. Flavours, SIO [Societe Industrielle des Oléagineux, Marie Gérard, Nanterre, France], Sopad Nestlé (Mr. Rolland, France), Sojadoc (A. Lacombe, P. Roger, Mr. Henras & Mr. Attié; St. Paul, 81140 Penne du Tarn, France), Sojaquelle (Wolfgang Furth-Kuby), Solnuts B.V. (J. Liebrechts), Soy (De Preneuf, Cerny, France), Staley Intern[ational], Stern Chemie (Volkmar Wyviol, Hamburg), UNCAA, Union Deutsche Lebensmittelwerke [Hamburg], Univ. of Strathclyde [Glasgow, Scotland], Vamo Mills (B. Cleenewerck, Ghent, Belgium), Versteegen Specerijen, V.D.SP.V.B.A., Wenger International (I. Ben Gera, Antwerp, Belgium).

Registered on Sept. 27. Naarden Intl., Protevit, Wessanen, Mr. Karas & Mr. Drosihn [Soyastern—From Germany, not Turkey].

A note in the Nov. 1984 issue of *Soya Foods* (ASA, Europe) (p. 2) stated that the workshop was attended by 105 people from 14 countries, and was considered to have been very successful.

Note 1. This is the earliest published document seen (May 2015) concerning Sojadoc of France.

Note 2. E.M. Chajuss is the name of Daniel Chajuss' father. He and his son founded Hayes Ashdod Ltd. "E.M. Chajuss Ltd." is a limited or incorporated company that was jointly owned by Daniel and his father. Daniel Chajuss attended this Soyfoods Workshop as a "delegate" of E.M. Chajuss Ltd. company.

Note 3. This is the earliest document seen (March 2020) that mentions Wessanen of the Netherlands. Address: Brussels, Belgium.

1043. Archer Daniels Midland Co. 1984. Annual report. P.O. Box 1470, Decatur, IL 62525. 16 p.

AMERICAN SOYBEAN ASSOCIATION

FIRST EUROPEAN  
SOYFOODS WORKSHOP

SEPTEMBER 27-28, 1984

KRASNAPOLSKI HOTEL  
AMSTERDAM



• **Summary:** Part I describes ADM's daily work. "We produce enough vegetable oil each day for 8 million pounds of margarine. We grind enough corn each day to empty a string of 700 trucks. We produce enough sweeteners each day for 92 million soft drinks. We distill enough ethanol each day for 375,000 tankfuls of super unleaded gasoline. We mill enough flour each day to bake 25 million loaves of bread. We process enough peanuts each day for 3,500 doubleheaders. We export enough food and feed ingredients each day to fill 17 barges. Imagine what we can do tomorrow."

Part II is the financial data. Address: Decatur, Illinois.

1044. **Product Name:** Vegetable Feasts Chile Sin Carne.

**Manufacturer's Name:** Vegetarian Feasts.

**Manufacturer's Address:** 21 Carnwath Rd., Fulham, S.W. 6, London 3HR, England.

**Date of Introduction:** 1984 September.

**Ingredients:** Incl. textured soy flour (TVP, granulated), red kidney beans, tomato puree, onions, green and red peppers, mixed herbs, chili powder.

**Wt/Vol., Packaging, Price:** Microwaveable container with cellophane top.

**How Stored:** Frozen.

**New Product–Documentation:** Talk with Sonia Newhouse. 1988. Feb. 25. She founded this company and started to make vegetarian frozen entrees in March 1984, after having been cured of osteo-arthritis.

1045. **Product Name:** Vegetable Feasts Stroganoff.

**Manufacturer's Name:** Vegetarian Feasts.

**Manufacturer's Address:** 21 Carnwath Rd., Fulham, S.W. 6, London 3HR, England.

**Date of Introduction:** 1984 September.

**Ingredients:** Incl. textured soy flour (TVP, minced), mushrooms, peas, onions, sour cream, wine.

**Wt/Vol., Packaging, Price:** Microwaveable container with cellophane top.

**How Stored:** Frozen.

**New Product–Documentation:** Talk with Sonia Newhouse. 1988. Feb. 25. She founded this company and started to make vegetarian frozen entrees in March 1984, after having been cured of osteo-arthritis.

1046. Vaidehi, M.P. 1984. Re: Request for tempeh culture and studies on tempeh in Bangalore. Letter to William Shurtleff at Soyfoods Center, Oct. 5. 1 p. Typed, with signature on letterhead.

• **Summary:** She requests a packet of tempeh starter culture for some consumer acceptability studies. "I was one of your students at M.F.M." [Meals for Millions, in Santa Monica, California] and hope you will help me in encouraging tempeh use in Indian villages.

"In one of my studies I found that when tempeh curry and chips were served to 100 villagers and 100 urban

consumers in India, the results were very promising. The consumers liked tempeh, tofu, and nutri nuggets (TVP); they liked soya curds the least." Address: Assoc. Prof. & Head, Dep. of Rural Home Science, The Univ. of Agricultural Sciences, Hebbal, Bangalore–560 024, India.

1047. Cahalan, Steve. 1984. Staley created market. *Herald & Review (Central Illinois)*. Nov. 14. p. A3.

• **Summary:** "In large part, Decatur owes its title of 'Soybean Capital of the World' to Augustus E. Staley Sr., founder of A.E. Staley Mfg. Co. which in turn founded the U.S. soybean processing industry in the early 1920s.

"The title was promoted by the late Henry H. Bolz, longtime general manager of the Association of Commerce. He said the title was justified because Staley almost single-handedly encouraged farmers to grow soybeans and provided the first and most dependable market.

"Staley was born in 1867 on a farm near Julian, North Carolina, and at age 17 became a traveling salesman of such products as starch, baking powder and flavoring extracts.

"After 15 years as a traveling salesman, he started his own starch business in Baltimore. He purchased the former Wellington Starch Co. plant in Decatur in 1909 and moved to the city.

"The company survived tough times after World War I and gradually expanded.

"Staley opened his first soybean processing plant in 1922 in Decatur, after urging farmers to grow soybeans.

"He put together a traveling promotional and educational 'Soil and Soybean Special' train which traveled through Central Illinois in 1927.

"The special train of six cars and an engine had exhibits about soybean planting, cultivation, processing and uses; motion picture theaters, and a lecture car.

"The U.S. Department of Agriculture, University of Illinois College of Agriculture and Southern Illinois State Normal University at Carbondale helped put the exhibits together.

"In the 1930s, Staley envisioned using refined soy bean oil in foodstuffs instead of just using the crude oil as a substitute oil in paints and soaps. He also convinced feed formulators to use the protein-rich meal in their feed mixes.

"Asked in the late 1930s what his hobby was, he answered, 'Soybeans, I guess. They're my baby.'

"He first became interested in soybeans as a boy, after his father had been given some soybeans by a missionary who had returned from China. The city's major processors and the production from the surrounding area led to the grain trade pricing soybeans and bean products 'F.O.B.' Decatur. That designation provided the official stamp of approval to Decatur's "soybean capital" claim.

"Decatur now has just two soybean processors, down from five in 1953.

"They are Staley and Archer Daniels Midland Co.,

the world's largest until Cargill Inc. recently purchased the soybean facilities of Ralston Purina."

A portrait photo shows Mr. A.E. Staley. Address: Herald & Review Farm / Business Writer.

1048. Ingram, Ron. 1984. Analysts: Staley to drop soybeans. *Herald & Review (Central Illinois)*. Nov. 14. p. A3.

• **Summary:** "A.E. Staley Mfg. Co.'s review of its soybean operations is seen by market analysts as another move by the Decatur firm away from total dependence on agribusiness for its profits.

"They're throwing in the towel. They've given up hope of the soybean business coming back to an adequate return on investment," said David Goldman, a vice president with E.F. Hutton & Co. Inc., New York.

"Long term, maybe this (soybean crushing) doesn't fit any longer' in Staley's plans, said Craig Carver, a vice president with A.G. Edwards & Sons Inc., St. Louis.

"If Staley should sell its soybean operations, both analysts agreed it would be a positive move for the company.

"The soybean crushing business in good times tends to be quite volatile, and we haven't had many good times in the last few years, Carver said. 'Staley has gotten the reputation for running that business pretty conservatively and that eliminates a lot of profit opportunities. You have to manage the business aggressively to take advantage of swings in the markets.'

"Goldman said it appears Staley sees there has been a fundamental change in the soybean processing business which has permanently reduced the profit potential for soybeans.

'If you'll pardon the pun, all of their soybean earnings didn't amount to a hill of beans anyway,' he said. 'It's been a drag on earnings. It's been a drag on return.

"Goldman said Staley should be able to 'get some cash for it, even if they have to write off something' to do so.

"Referring to Staley's recent merger agreement with CFS Continental Inc., nationally the No. 2 food service industry supplier, Goldman said the acquisition will help Staley restructure into high-growth and high-return areas. 'When it's all over they will be less of an agricultural company than they were.'

"Carver said last week's announcement by Pepsico and Coca Cola to use 100 percent high-fructose corn sweetener—a major Staley product—in their colas may have helped Staley toward a decision to review its soybean operations.

"Fructose will make the whole corn milling industry some good margins as a result of the major bottlers' decisions, Carver said. Carver said there are some potential buyers for Staley's soybean operations, among them Central Soya of Fort Wayne, Indiana; Conagra Inc. of Omaha, Nebraska, or Continental Grain Co. of New York.

"He also suggested Decatur-based Archer Daniels Midland Co. could buy part of Staley's milling capacity, but

could not acquire it all without getting in trouble with the U.S. Justice Department over antitrust violations.

"Goldman said ADM is 'up to something sneaky.' He said between June 30 and Sept. 30 ADM's cash position increased to \$1 billion from \$300 million, strongly implying the company is preparing to make a major acquisition.

"I wonder if they may have known something about Staley,' Goldman said.

"Richard E. Burket, ADM vice president and assistant to the chairman, declined Tuesday to comment on Staley's announcement that it is reviewing soybean operations.

"Burket acknowledged ADM was aware of the action and added, 'At this time we don't know what we might be able to do.'

"ADM is the second-largest U.S. soybean processor. It held the No. 1 ranking until recently when Cargill Inc. of Minneapolis, Minnesota, acquired the mills owned by Ralston Purina Co. of St. Louis [Missouri]. The acquisition pushed Cargill into the top spot among U.S. soybean processors." Address: Herald & Review Farm / Business Writer.

1049. *SoyaScan Notes*. 1984. Early tofu manufacturers in Europe, listed chronologically by country (Overview). Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** All of the following started making tofu before 1985. Countries with the earliest tofu manufacturing are listed first. The month production started, when known, is given after a slash following the year. Thus 1911/06 is June 1911.

France: Usine de la Caséo-Sojaine (run by Li Yu-ying) 1911/06, Two or three tofu shops in and around Paris, including 1-2 at Colombes 1964/03. Alimentation Japonais Osaka 1972, Le Bol en Bois 1975/12, La Roussellie 1978/02, Institut Tenryu 1981/01, SOY (Société Soy) 1982/06, Les Sept Marches 1982/09, Sojatour Tofu Shop 1982/09, Ets. Co-Lu 1983/06, Lagadec Tofu 1983/06, Soja d'Oc 1983/10, Nyingma Dzong 1983/11, Tofu Kuehn 1983?, Sojagral Ouest 1984/12.

Netherlands: Vanka-Kawat 1958, FA. L.I. Frank: Frank Soya 1959?, Heuschen B.V. 1964, Firma Post & Teekman 1965, Stichting Natuurvoeding Amsterdam (renamed Manna Natuurvoeding B.V. in 1982) 1977/09, Hwergelmir: Foundation for a Natural Life 1979/07, Firma Ergepe 1981/01, Stichting Oost West Centrum 1981/01, Michel Horemaus Tofu 1981/01, Witte Wonder Products 1981/04, De Morgenstond 1981/12, Soy-Lin or F.M. Lin 1982/09. Jakso: Center for Agriculture & Craftsmanship (later called Yakso) 1983/06, Vuurdoop 1983/07.

England, UK: Dragon & Phoenix Co. 1966, Wong Chung 1975 or before, Lung Kee 1975 or before, Full of Beans Wholefoods 1978/08, Paul's Tofu & Tempeh 1981/01, Yu's Tofu Shop 1981/01, Cauldron Foods Ltd. 1981/09, The Regular Tofu Co. Ltd. 1981/12, Bean Machine (Wales) 1982,

Hong Kong Supermarket 1982/09, Stewart Batchelder Tofu 1983/06.

Belgium: Etablissements Takanami (Takanami Tofu Shop) 1976, Jonathan P.V.B.A. 1977/01, De Brandnetel 1979/07, Unimave Tofu 1980, Aversano Tofu Shop 1981/01, Alternatur 1981/01, Seven Arrows Tofu 1982/04, 1983/10, Vajra 1983/11.

Switzerland: La Moisson 1978, Le Grain d'Or 1981/01, Genossenschaft Sojalade (later renamed Genossenschaftstofurei) 1981/09, Soyana 1982/02, Soy Joy 1982/04, Restaurant Sesam 1982/04, Opplinger Tofu 1982/09, Natural Products Promo Carouge 1982/09, Joya 1982/09, Centre Macrobiotique de Lausanne 1982, Osoja: La Maison du Tofu (later renamed Tofushop Centanin SA) 1983, Tofurei Pfannenstiel 1983/11, Thieu's Soja Spezialitaet 1983/11, Conserves Estavayer S.A. (Sold at Migros Supermarkets) 1984/06, Galactina Ltd. 1984/11, Berner Tofurei 1984?

Italy: Roland A. di Centa 1978, Gilberto Bianchini of Centro Macrobiotico ed Alimentazione Organica (Community Food). Renamed Centro Macrobiotico Tofu 1978/11, Ohnichi Intl. Foods Co. Lotizzazione Industries 1982/09, Circolo L'Aratro 1982/09, C.D.S. Pianetta Terra Soc. Coop. A.R.L. 1982/12, Aldo Fortis Tofu 1983/06, Fondazione Est-Ouest 1983/06.

Germany: Svadesha Pflanzen-Feinkost 1979, Alexander's Tofu Shop [Nabben] 1981/01, Biogarten 1981/01, Auenland Tofu & Soja Produkte 1982/03, Tofuhaus Belsen (renamed Yamato Tofuhaus Sojaprodukte in Jan. 1984) 1982/07, Thomas Karas und Ingeborg Taschen (associated with Bittersuess; renamed Soyastern Naturkost GmbH in Dec. 1985) 1982/11, Albert Hess Tofuhaus Rittersheim (Later in Tiefenthal) 1983/07, Tofukost-Werk TKW GmbH 1984/05, Christian Nagel Tofumanufaktur 1984/08, Sojatopf (renamed Soto in April 1989) 1984/09.

Austria: Weg Der Natur 1980/05, Tofurei Wels (renamed Schoen Tofurei in 1987) 1982, SoyVita Austria 1983/05, Taiwan Restaurant 1983/06, Walter Brunnader Tofu 1983/06, Soyarei-Erich Wallner Tofu 1983/06, Tofurei Ebner 1983/11, Soyarei Wallner Ebner 1984/02, Fernkost Markt Nippon Ya Kondo GmbH 1984/02, Naturkostladen 1984/02, Sojarei Ebner-Prosl 1984/04, Sojvita Produktions GmbH 1984/06.

Sweden: Aros Sojaprodukter 1981/02.

Denmark: Tofu Denmark (Soy Joy?) 1982/03, Dansk Tofu 1983/06.

Portugal: Unimave Tofu 1980, Shogun Produtos Aliment. 1982/09, Jose Parracho Tofu 1982/09, Próvida Lda. 1984.

Spain: Zuaizo 1984/03.

1050. *SoyaScan Notes*. 1984. Chronology of soybeans, soyfoods and natural foods in the United States 1984 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Jan. A highly influential 10-year, \$150 million study released by the National Heart, Lung, and Blood Institute in Washington, D.C. proves for the first time a direct relationship between high blood cholesterol and the risk of heart attack, the nation's number one killer.

Jan. Legume, Inc. launches an all-natural line of cholesterol-free low-calorie Italian and international gourmet tofu-based frozen entrees in stylish full-color packages: Tofu Tetrizzini, Cannelloni Florentine, Vegetable Lasagna, Tofu Bourguignon, Sesame Ginger Stir-fry, Stuffed Shells Provencale, Tofu Manicotti, and Tofu Lasagna. Jan. Eden Foods becomes the sole import agent for Muso Shokuhin in the United States.

Feb. 25. *Soymilk Industry and Market: Worldwide and Country-By-Country Analysis*, by Shurtleff and Aoyagi published by Soyfoods Center. 177 pages, 640 references. \$350.

Feb. Marusan-Ai, Japan's second largest soymilk maker and one of the five largest miso makers, starts to market tempeh. They publish a 27-page tempeh booklet and by May are producing 30 tonnes (66,000 lb.) of tempeh a month, making them the largest tempeh manufacturer in the world. During 1984 at least five Japanese food companies are making tempeh, leading to a mini-boom of this soyfood which was first sold commercially in Japan in 1983.

March 2. Based on responses to his Oct. 1983 survey, Tom Timmins drafts preliminary 3-page tofu standards (2 pages of which are microbiological standards) that he circulates to the Soyfoods Standards Committee, inviting comments. On March 6 Wm. Shurtleff of Soyfoods Center expands these, keys them into the Center's word processor, and returns them to Timmins.

March 2. Problems start between Eden Foods and the U.S. Food and Drug Administration (FDA). FDA sends Eden a strongly worded letter citing eleven claims in Eden's brochures that the agency considers erroneous, including the company's apparent endorsement of Edensoy as an infant formula. FDA asks Eden to recall the brochure in which Edensoy is promoted as "Good for Babies." An infant became ill due to copper deficiency on an Edensoy diet.

March 8. Soyfoods Association of America members have 12 pages of impressive color advertisements and information about soyfoods and the Association in Natural Foods Merchandiser, in preparation for the NFM Anaheim Natural Foods Expo in March. Full-page color ads by Legume, Erewhon shoyu, Vitasoy, San-J, Tofutti, Edensoy, and Pure & Simple soy sauce.

March 11-13. At the Natural Foods Expo at Anaheim, the Soyfoods Association organizes the first Soyfoods Pavilion, a 16-booth cluster of soyfoods companies and products, which is the hit of the Expo and a show of strength for the industry. Lots of delicious free food draws throngs from the 9,000 Expo attendees.

March 11. At Anaheim, Vitasoy launches its first

designed-for-America soymilk, in natural, coconut, and chocolate flavors, each sweetened with maple syrup, and imported from Hong Kong. Many subsequent eye-catching, health-oriented full-page color ads are run in national health magazines.

March 29. First draft of the Tofu Standards, 15 pages double spaced, is compiled by Shurtleff. Timmins allocates \$2,000 to retain two Washington, DC, attorneys who are specialists in foods and regulations to assist the committee in developing professional standards. The draft is circulated to 38 people who are asked to respond to a poll on 14 key issues.

March 29. The term “second generation” products is first applied to soyfoods by Wm. Shurtleff in the new tofu standards. A computer-related term indicating one step more advanced, it quickly replaces the term “secondary,” which has a slightly negative connotation.

March. American Soybean Association’s Belgium Office publishes the first issue of *Soya Foods*, a 6-page newsletter edited by Michael Martin, Protein Market Development Manager. It will be issued three times a year in English, French, Dutch, and Italian. This is a completely new direction for ASA in the Western world... but it doesn’t last long.

April 7. *Soyfoods Industry and Market: Directory and Databook 1984* (4th ed.) by Shurtleff and Aoyagi published by Soyfoods Center. 215 pages, \$95.

April 13. Richard Leviton resigns as co-director of *Soyfoods* magazine and decides to discontinue his active involvement in the U.S. soyfoods movement. He plans to go to England to write a novel about King Arthur; he leaves in late April.

April 20. *Tofu, Tempeh, & Other Soy Delights*, by Camille Cusumano published by Rodale Press. It is widely and positively reviewed by national media.

April 27. The term “soymilk” is legalized for use in Canada, after a lengthy and expensive court battle by Victor Food Products. The court ruled that this is the “common and ordinary term” for the product, used since about 1918 in scientific articles and commerce. Thus it cannot be squelched by dairy interests.

April. New England Soy Dairy, America’s largest Caucasian-run tofu manufacturer, changes its name to Tomsun Foods, Inc.

May. *Nutritional Cooking with Tofu*, by Christine Liu published by Graphique Publishing in Michigan.

May. American Natural Foods (formed in Jan. 1984 by John Troy, creator of miso-containing Hot Stuff) has a private stock offering that raises \$150,000. In October ANF debuts a line mainstream American sauces and seasonings, each featuring miso, that are delicious and beautifully marketed.

May. *Die Tofu Kueche* (The Tofu Kitchen), by Verena Krieger, Swiss soyfoods pioneer, published by Tanner +

Staehelin Verlag in Zurich. 171 pages with many photos.

June 7. “Tofu” by Barbara Hansen and “Tofu: Americanization of a Soy Food” by Karen Gillingham published in the *Los Angeles Times*.

June. Landstrom Distributing Co. of San Francisco, files for Chapter XI bankruptcy. Keene Distributors of Texas, and Collegedale of Tennessee, both profitable, well-run companies, are also pulled under, innocent victims of the Landstrom collapse. All three units were owned by Nutritional Foods, Inc. and all were major natural / health foods distributors. These bankruptcies seriously hurt the natural foods industry as well as many individual companies; sales and confidence plummeted nationwide. In late 1984 Fillmore Foods purchased Landstrom, and Balanced Foods purchased Collegedale and Keene.

June. Migros, Switzerland’s largest supermarket chain, launches Tofu Nature, its own brand of tofu, made at Conserves Estavayer S.A., with widespread publicity and excellent product information on both tofu and soybeans. It is sold in the same section as dairy products and eggs. The launch is considered a great success; supply is not able to catch up with demand until late December.

June. *The Book of Soybeans*, by Tokuji Watanabe and Asako Kishi published by Japan Publications. 191 p.

June. *Using Tofu, Tempeh & Other Soyfoods in Restaurants, Delis & Cafeterias*, compiled by Shurtleff & Aoyagi, published (comb bound; 181 p.) by Soyfoods Center.

July. Kikkoman completes its second major shoyu (Japanese-style soy sauce) plant outside Japan, in Singapore. The 18,000 square meter factory, with a capacity of 3,000 kl (792,500 gallons) a year and 40 employees, costs \$14 million. It will make shoyu and teriyaki sauce. Official opening ceremony was Nov. 21.

July. The requirement in effect since 1965 that isolated soy protein used as an ingredient in meat and poultry products must contain titanium dioxide as a tracer, is removed from federal meat and poultry products inspection regulations, following a petition by ADM, Grain Processing Corp., and Ralston Purina.

July 9. “Its Trendy, Tasty and Tofutti” (2/3 page) by J.D. Reed published in *Time* magazine (U.S. circulation 4.3 million). Probably the biggest media coverage for tofu in U.S. history. Tofutti hits the big time!

July 17. *History of Tempeh*, by Shurtleff and Aoyagi published by Soyfoods Center. 102 pages, including 375 references. Continued.

1051. **Product Name:** Sojal Soya Milk.

**Manufacturer’s Name:** Haldane Foods Ltd.

**Manufacturer’s Address:** Hayhill Industrial Estate, Unit 25, Sibley Rd., Barrow Upon Soar, Leicestershire LE12 8LD, England.

**Date of Introduction:** 1984.

**New Product–Documentation:** Letter from Bernard Storup. 1984. March 22. “A new type of soymilk is Sojal, sold in France by Ste. Sapov, 10 Place Jean-Juares, 13410 Lambesc. It is made in a dairy with Brazilian powdered soymilk, with 0.3% sugar, and is the best soymilk I have ever tasted.”

Soya Bluebook. 1987. p. 104. Product originally launched by The Regular Tofu Co. Simon Bailey. 1988. Natural Choice. Aug. 15. “Soya-based products.” A photo shows the carton. “By Hera.” CSP form filled out by Simon Bailey. 1988. Sept. 28. Gives date of introduction as 1984. Letter from Simon Bailey. 1988. Oct. 10. Haldane joined forces with British Arkady in Feb. 1988 as part of Arkady’s Health Food Div. Brian Welsby and Peter Fitch are joint managing directors.

Talk with Philip Marshall. 1990. July 9. Brian Welsby started this company. He sold Sojal, which was made in France using powdered Brazilian soyamilk from OLVEBRA. He had it packaged and marketed in the UK as made with soybeans. Marshall thinks there was some argument between Welsby and Sojal, because he trademarked “Sojal,” which was in fact their name, in the UK. There was apparently a falling out between Welsby and Sojal, so he probably had to get his soymilk produced in the UK by some other company. He would not have used Haldane’s own soymilk, because the flavor would not have been acceptable. Haldane was big in dry mixes, which is why Arkady bought them. When Haldane was acquired by Peter Fitch, Welsby was “given the golden handshake.” He no longer works with the Haldane Group.

1052. **Product Name:** VegeBanger (Meatless Sausage Dry Mix) [Herb, or Spicy].

**Manufacturer’s Name:** Realeat Company (The).

**Manufacturer’s Address:** 2 Trevelyan Gardens, London NW10 3JY, England. Phone: 01-459-3401.

**Date of Introduction:** 1984.

**Ingredients:** Wheat gluten, textured soya flour, rolled oats, wholewheat rusk, soya protein, seasalt, yeast extract, tomato, onion, herbs & spices, garlic, and beetroot.

**Wt/Vol., Packaging, Price:** 125 gm foil sachet, makes 10 x 30 gm sausages. Retail for 59 pence.

**How Stored:** Shelf stable.

**Nutrition:** Contains 60% more protein than the average pork sausage and far less fat. Cooked product: protein 23%, carbohydrate 11%, vegetable fat 12%, dietary fibre 4%, calories 267/100 gm when fried.

**New Product–Documentation:** Leaflet. 1986. VegeBanger. Letter from Gregory Sams. 1988. March 30. Introduced in 1984. Leaflet, undated. “A Recipe for success.” Gives detailed product information.

1053. **Product Name:** Sojal Frozen Non-Dairy Dessert.

**Manufacturer’s Name:** Regular Tofu Company Ltd. Made

in Leicester, England, by Rossa Ltd.

**Manufacturer’s Address:** England.

**Date of Introduction:** 1984.

**How Stored:** Frozen.

**New Product–Documentation:** Interview with John Holt. 1987. Aug. 1987. “Our company was the first to sell soy ice cream in England. Michael Cole was one of our salesmen. Then he left and started making and selling his own soy ice cream.”

Note: This is the first non-dairy soy-based ice cream made or sold in the UK.

Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 10 and 16. The name of this product was pronounced SO-jal. Ray is quite sure they had it made for them by Rossa Ltd., a very small ice cream company in Leicester (pronounced LES-tur), and he thinks the same company also later made the first soy yogurt for the Regular Tofu Company Ltd.

1054. ADM Co. 1984. Dairy products update. Decatur:

Illinois: Archer Daniels Midland. 24 p.

• **Summary:** On the cover are two colorful scoops of ice cream on top of a cone which is an ear of corn. It’s called an “Ice cream corn.”

Contents (soy related): The use of corn sweeteners and soy protein in dairy products... The use of soy protein in fluid and frozen products. The use of soy protein in cheese substitutes and cheese-like products. Characteristics and use of Ardex brand isolated soy protein (90% protein)... Additional brochures available.”

Note: This is the earliest English-language document seen (Oct. 2013) that uses the term “cheese substitute” to refer to a Western-style soy cheese.

“Field performance of soft serve mixes is critical. The product must be dry and stiff to remain on cones.” “Frozen yogurt is likened to something between ice milk and sherbet. Lactic fermentation provides tartness, which is highly compatible with fruit flavors.”

Various types of yogurt include: Regular or unflavored, Swiss style, sundae style, and liquid yogurt.

Ardex F is dispersible isolated soy protein. TVP can be used to add protein and “crunch.” “Ardex isolated soy proteins [F] can be used effectively to produce tofu-like products” (p. 19).

A table (p. 20) gives formulas for “Yogurt” soft curd. “Tofu” firm curd. “Tofu” from dry mix. Chocolate dessert.

Ardex F is dispersible; used for dairy foods. Ardex SP-6 is dispersible; used primarily for injected whole muscle meat products. Ardex R is used where special functionality is required, e.g. coffee whitener, liqueur, cheese, etc. Ardex D is an emulsion stabilizer for use in meat systems,... Ardex DHV is a water and fat binder and adhesive agent. Address: Illinois.

1055. Bertrand, Jean-Pierre; Laurent, Catherine;

Leclercq, Vincent. 1984. Soja. Aus dem Franzoesischen von Felicitas Schaetzel [Soya. Translated from the French by Felicitas Schaetzel]. Zurich, Switzerland: Unionsverlag. 130 p. Illust. No index. 21 cm. Reprinted in 1988. [8 ref. Ger]

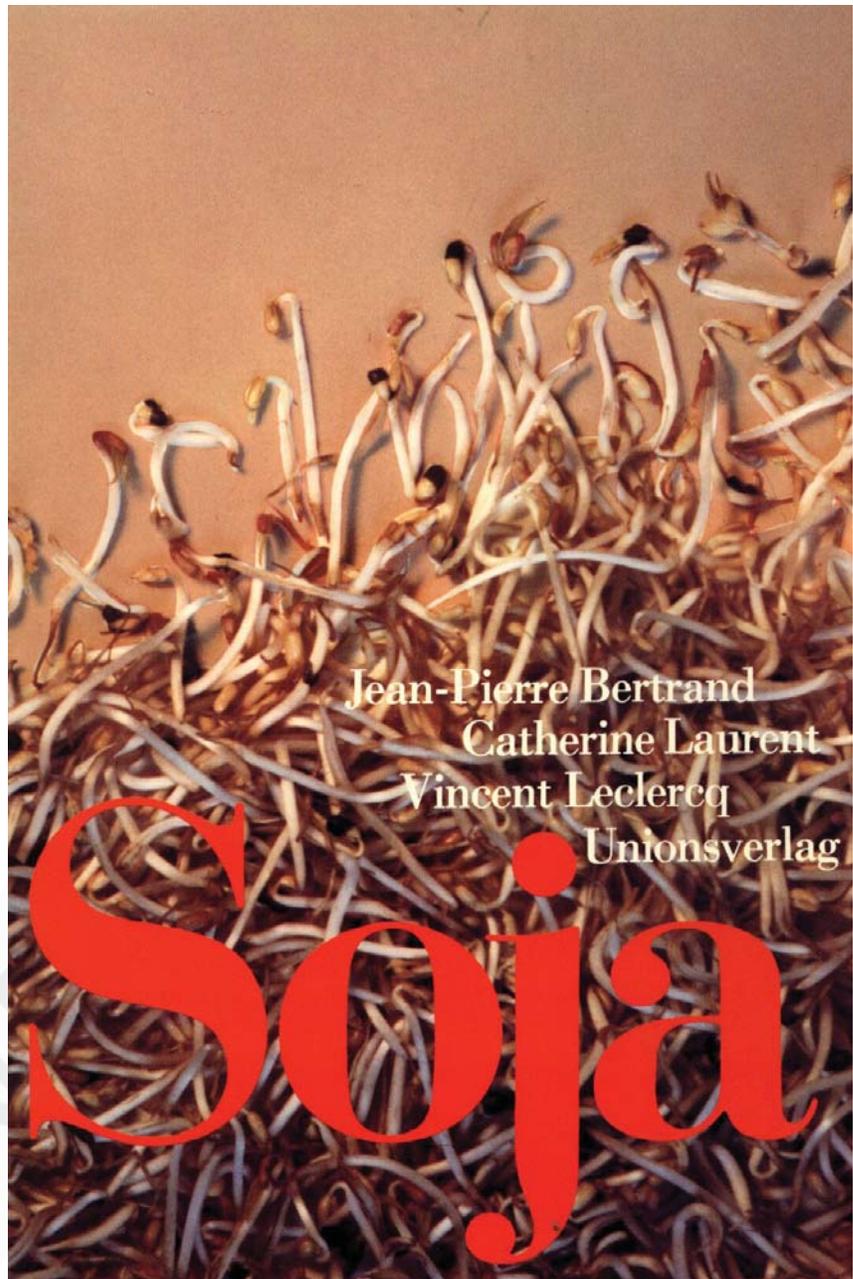
• **Summary:** A German translation of *Le Monde du Soja* (1983), this book gives a very good overview (from the French point of view) of the development of the soybean plant in the context of world agriculture. However it suffers from lack of an index.

Contents: 1. The soybean in the world economy: Portrait of a “sacred grain,” soybean meal / cake—a high-value feed, soy oil—from diesel motors to ice cream, soy protein—the industrialized protein. Sidebar, by Verena Krieger: Soymilk and tofu, miso, tamari, shoyu and soy sauce, tempeh, soy sprouts. Producers and users. 2. The soya complex: Consumers and producers without power, the producers—a club with contradictions, the multinationals in the middle of the soya chain (a profile of each of the largest multinationals: ADM {USA}, Bunge & Born {Argentina}, Cargill {USA}, Central Soya {USA}, Continental Grain {USA}, Louis Dreyfus {France}, Ralston Purina {USA}, A.E. Staley {USA}, Unilever {England/Holland}, p. 30-31), the international wholesale business, the commodity exchange as a barometer.

3. How prices are determined: Subsidy politics in the USA, price guarantees in Brazil, the price of soybean meal and soy oil. 4. From sacred bean to soya complex—a look back: Colonial times, Europe becomes curious, the American soya complex is born, the struggle over margarine, soybean meal becomes successful, the war as a big opportunity, soya conquers America, soya against cotton—the oil battle.

5. Soya from the Americas conquers the world: The Marshall Plan—the first clever offensive, Public Law 480—food aid with a club-foot, trade pressure under the banner of free trade. 6. The politics of the importing countries: U.S. soya vs. EU cereal grains, France—the model of protein dependency, in the maze of European agrarian politics, Japan—the free way for imports. 7. The embargo of 1973—Trade war and crisis: the exchange awakens.

8. Brazil—The new soybean giant: The export sector is nursed back to health, credit—but not for everyone, the export boom, the equal weight problem. 9. The newcomers—Argentina and Paraguay. Paraguay, a little appendage of



Brazil?, startup difficulties in Argentina, help for Soviet stock-farming.

10. The new questions: The Eastern Bloc in the conflict of goals, industrial comeback of the soybean in China, developing countries—meat and oil for the poor? 11. The reverse side of the “Soya Model:” Brazil—Flight from the land, dependency, and hunger, Tunisia—adulterated olive oil, Senegal as loser in the peanut / soya battle, a model of supply dependency.

12. Which alternatives? A “protein plan” in the European Union, better utilization of the green forage stock, industrial amino acids—a way out / escape? 13. Plant- vs. animal protein: Industrial soya protein—food of the future?, the Third

World, a large market with the ability to pay, a future with contradictions.

Figures: (1) The various basic ingredients and commodities that can be made from the soybean (p. 11). (2) Overview of the use of soybeans and soy products (p. 14-15). (3) Soybean production and trade worldwide, 1980/81, Sept. to Oct., in million metric tons. (4) German newspaper headlines concerning soybeans, 1983-84 (p. 36). (5) Map of worldwide soybean trade, 1935-1939, in 1000 metric tons (p. 46). (6) Map of worldwide soybean trade, 1948-1949, in 1000 metric tons (p. 59). (7) Map of worldwide soybean trade, 1980, in 1000 metric tons (p. 63). (8) Graphs of soybean exports, from USA, from Brazil, from Argentina (p. 83). (9) Bar graph—Yield of protein in kg of protein per ha: Soybeans 7,900. Alfalfa 7,200. Potatoes 5,000. Maize 4,500. Poultry 1,200. Pork 800. Milk 700. Beef 600 (p. 120).

About the authors:

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Catherine Laurent, a veterinarian and economist, is the author of a doctoral thesis on the soybean industry (*filière du soja*). Vincent Leclercq, an agronomist (*ingénieur en agriculture*) and economist, is a research associate at the INRA, for the International Economics Laboratory in Montpellier (*Laboratoire d'économie internationale de Montpellier*). He is also a member of Solagrail, which stands for Agro-Food Solidarity (*Solidarités agro-alimentaires*). Address: France.

1056. Brennan, Jennifer. 1984. *The cuisines of Asia: nine great oriental cuisines by technique*. New York, NY: St. Martin's Press. ix + 542 p. Illust. (line drawings). Index. 24 cm.

• **Summary:** The “Nine great Oriental cuisines” are those of “China, India, Indonesia, Japan, Korea, Malaysia, The Philippines, Thailand, Vietnam” (as stated on the book's cover). The book contains many recipes, yet it is largely organized into chapters by cooking techniques: barbecuing, steaming, stir-frying / using a wok, deep-frying, etc.

The chapter on “Japan” discusses soybeans, miso, tofu, and shoyu on pages 44-45. Soyfoods are said to be the 2nd largest source of protein in the Japanese diet.

The section on “Soybeans” (p. 97-104) includes a discussion of the names of various soyfoods in different Asian languages and countries. For example: “The basic bean curd is called *tau-fu* in Cantonese, *tau-hu* in Hokkien, and *tofu* in Japanese.” Or consider this (p. 99): “During the basic process of making bean curd, at the stage where the bean and water mixture is boiled, a skin or residue forms on the top. This skin [yuba] is skimmed off and dried. It is commercially available in sheets... and in the form of sticks that bear the picturesque name of ‘second bamboo’ [dried

yuba sticks] in Chinese, meaning that they are the second residue from the curd.”

There follows a 3-page table titled “Soybean products” (p. 101-03) which has four columns: Description, Chinese name [Cantonese], Japanese name, comments.

Note: Before proceeding, we believe that the design of this table is fundamentally flawed. (1) Why are the names of the basic soyfoods not given in the other languages with which this book is concerned, including Mandarin Chinese, Korean, Indonesian, Vietnamese, Filipino, etc.? (2) Why is no English name given for each basic soyfood product? Sometimes the description is the English name, yet that name is rarely the name a person would use if they were selling the product in an English-speaking country. (3) Why are so many common “soybean products” omitted from this table, such as the various basic other types of Japanese miso and of Japanese shoyu (besides *koikuchi shoyu*), fermented black soybeans (*douchi*, *dow see*), soymilk, soy sprouts, roasted soy flour, whole soy flour, soybean oil, textured vegetable protein, etc. These problems are easily solved with alternate table designs. For example, have one table for each language, with the name of each soyfood product given first in English and then in the language of that country. Put the description and comments in a glossary to avoid repetition. Or, have a glossary entry for each soyfood, with the English name, description, comments.

The table is divided into four basic types of soybean products. After each, we will give the Cantonese name and then the Japanese name, and we will indicate disagreements using [sic]. NL = Not listed.

(1) Bean curd: *Tau fu fu* [sic] = *kinugoshi tofu*. *Tau fu* = *momen tofu*. NL = *yaki tofu* [sic, *yaki-dofu*]. NL = *koya tofu* or *kori tofu* [sic, *koya-dofu* or *kori-dofu*]. *Tau fu pok* = *abura age*. *Fu chu* = *yuba* [sic, *fu chu* is dried yuba sticks. Yuba in Mandarin is *doufu pi*]. *fu joke* [sic, *fu jook*] (bean curd sticks) = NL. *Tim joke* [sic, *tiem jook*] (sweet bean curd sticks) = NL. *tau fu kon* [Mandarin: *doufu gan*; pressed tofu].

(2) Soy sauce: Light = *chan ch'an* or *sang chu* = *usu kuchi shoyu* [sic, not the same]. Dark, medium = *see yu chan yan* = *shoyu* [sic, *see yu* is soy nugget sauce, not made in Japan. Japanese shoyu is not traditionally made in China]. Dark, heavy, sweet = *chu yan* = NL.

(3) Fermented bean pastes and cheeses. Black bean paste = *dau see tau ch'ih* = NL. Sweet, white bean paste = NL = *shiro miso*. White soy cheese [fermented tofu, should be classified under tofu] = *pai doufu-ru* or *foo yee* or *foo yu* = NL. Red soybean paste = NL = *aka miso*. Red soy cheese or spiced red bean curd = *hung doufu-ru* or *nom yee* or *nam yu*.

(3) Miscellaneous soybean productions. Soy jam = *yun shi jeung* = NL. Whole fermented soybeans = NL = *nato* [sic, *natto*]. Red bean sauce = *saang see jeung* = NL. Soybeans and malted rice = NL = *moromi miso*. Hoisin sauce = *hoisin* = NL.

In the “Basic recipes” section is a recipe for Indonesian

dark sweet soy sauce (*ketjap manis*).

The Glossary (p. 499-515) contains the following soy-related entries: “Bean Curd (*tofu*, Japanese; *tao foo*, Chinese; *tahu*, Indonesian and Thai; *tokwa*, Philippines): A curdled, soft, cheeselike preparation made from soybean milk. Used as a source of protein in Asian cooking. Available loose or in packages.”

Bean paste, red sweet [from azuki beans]. “Substitute Chinese sweet red bean paste, p. 132.”

Bean paste, yellow (Chinese).

“Beans, black salted fermented. (Called *dow see* in Chinese) These are very salty soybeans, sold in cans in Chinese markets. Used with garlic as a flavoring for fish and pork dishes. substitute: Soybeans, cooked until soft and seasoned with plenty of soy sauce.”

Bean sprouts: Usually refers to mung bean sprouts, “although alfalfa and soybean sprouts are also used.”

Hoisin sauce: Soybeans are a major ingredient, along with garlic, chili peppers, and various other spices and ingredients.

Miso. Oyster sauce: “A Chinese sauce, made from oysters cooked in soy sauce and brine.” Used as a seasoning with cooked foods and as a table sauce. See recipe p. 146.

Red bean sauce: “A strong table sauce made from mashed soybeans.” Available in cans from Chinese stores.

Soy sauce

Also contains entries for: Kombu. Monosodium glutamate (MSG; “I do not use it nor do I recommend its use”). Mung beans.

The index contains 28 entries for soybean, 22 for soy sauce, 14 for miso, 6 for bean paste, oyster sauce, teriyaki, 4 for bean curd—deep fried, hoisin sauce, vegetarian dishes, 2 for ketjap, and 1 each for beans—black salted fermented, bean curd—fermented, jam—soy, jang (see miso), milk—soybean, ragi, shoyu (see soy sauce), soybean oil, sukiyaki, tahu, tau-fu or tau-hu (see bean curd), tempe [tempeh], textured vegetable protein (TVP), tofu (see bean curd), tou shih [fermented black soybeans],

About the author (from the back cover): “Jennifer Brennan grew up in Pakistan and India and has spent many years in Southeast Asia. She is the author of *The Original Thai Cookbook*.” She is “Winner of the IACP [International Association of Culinary Professionals] Award for the Best Literary Food Writing.”

1057. Francis, Dorothy E.M. 1984. Alternatives to cow’s milk: Comparisons. In: David L.J. Freed, ed. 1984. *Health Hazards of Milk*. London, Philadelphia, Toronto, etc.: Baillière Tindall. xvii + 281 p. See p. 145-150. [8 ref]

• **Summary:** In the section on “Milk Substitutes,” table 8.1 is titled “Milk substitutes suitable for different age groups.” The following soya products are listed with their manufacturers and osmolality in mmol/kg (millimole/kilogram): Infants from birth: Formula S Food (Cow &

Gate), Prosobee liquid and powder (Mead Johnson), Wysoy (Wyeth, contains beef fat). Infants from three months, in addition: Granolac Infant (Granose). School age children and adults requiring enteral feeds: Fortison Soya (Cow & Gate). Social replacements of milk: Granogen (Granose), Plamil (Plant Milk Ltd.), Soy Bean Milk (Itona), Soya Milk Liquid (Granose).

A discussion of “Soya formulas” is given on p. 148-49. Social replacements of milk “do not contribute significantly to the nutritional intake, particularly for calcium and riboflavin.” Address: SRD, Group Chief Dietitian, The Hospital for Sick Children, Great Ormond St., London, WC1N 3JH, England.

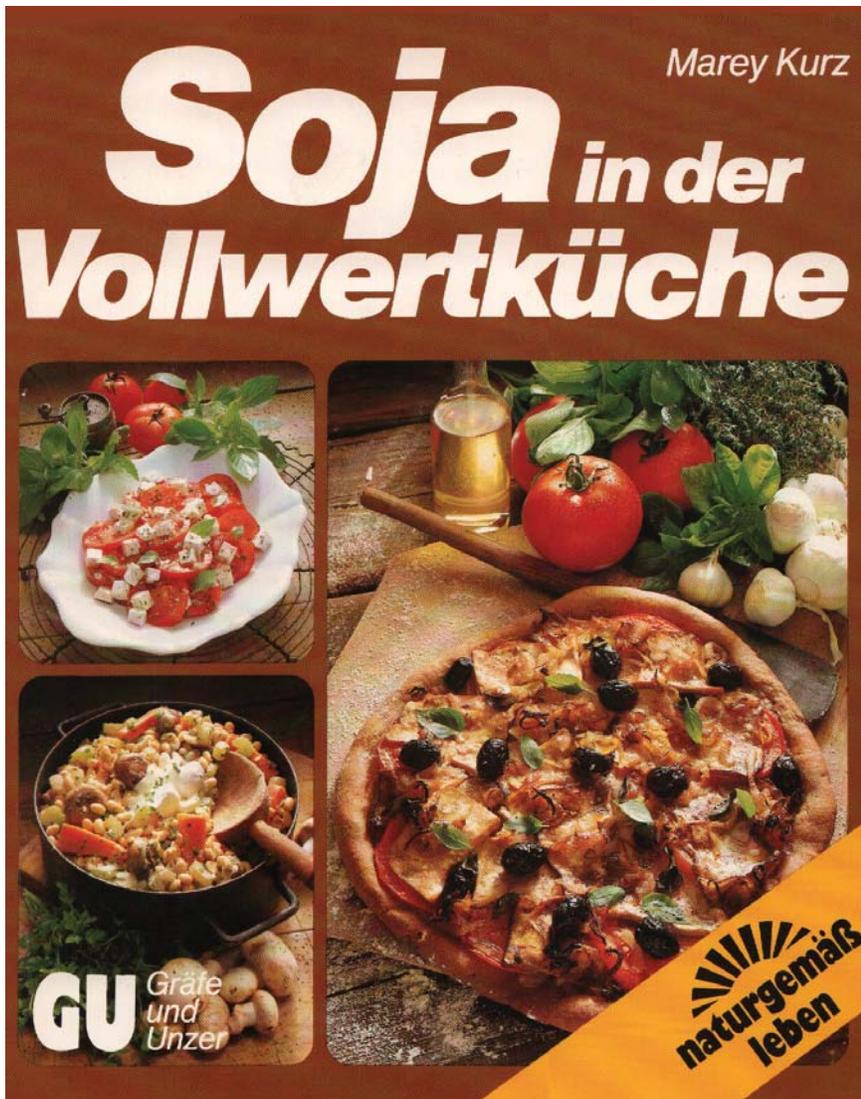
1058. Friedman, Rose. 1984. *Jewish vegetarian cooking: The finest traditional recipes, made exciting and original by the use of healthy, natural ingredients*. Wellingborough, Northamptonshire, NN8 2RQ England: Thorsons Publishing Group. 128 p. Foreword by Philip L. Pick. Illust. by Ian Jones. Index. 22 cm.

• **Summary:** “The official cookbook of the International Jewish Vegetarian Society.” This is a lacto-ovo-vegetarian cookbook. Unlike most American Jewish vegetarian cookbooks which use tofu so extensively in pareve meals, this one makes very scant use of soyfoods, perhaps because it was published in 1984 before the soyfoods movement in England reached take-off. Only one recipe has any sort of soyfood in the name (Soya Bean Goulash, p. 71, which uses ½ lb of cooked soya beans), Tvp (minced) is used in recipes such as Klops III (p. 48), Tomates Reyanos (p. 66), Lahne Be Sahem (p. 67), and Bobotie (p. 70). Soy flour is used in Klops II (p. 47). The index is poorly done, with no reference to major ingredients—only recipe names.

1059. Kurz, Marey. 1984. *Soja in der Vollwertkueche: Rat und Rezept-Ideen zum Kochen und Backen mit allen Soja-Varianten: Bohnen, Mehl, Milch, Sauce, Tofu und Miso. Das erste komplette Soja-Kochbuch [Soya in whole-foods cookery: Advice and recipe ideas for cooking and baking with all the varieties of soya: Beans, flour, milk, sauce, tofu and miso. The first complete soya cookbook]*. Munich, West Germany: Gräfe und Unzer GmbH. 102 p. Illust. Index. 20 cm. [11 ref. Ger]

• **Summary:** Foreword. Everything about soy (*Soja*). Basic soy recipes (How to make at home): Soy grits. soy sprouts, light soybean pulp (cooked ground soybeans), dark soybean pulp, cooked soybeans, sweet cooked soybeans, cooked azuki beans, soymilk, tofu—Soya quark or soya cheese (*Sojaquark oder Sojakäse*), sokar.

Soups and one-pot dishes. Refines ragouts. Delicate meatballs or rissoles. Pies, pastries and spreads. Hearty vegetable dishes. Special salads. Side dishes, garnishes, and entremets. Fine sauces. Soya for those in a hurry. Desserts and confections. Drinks and energy-spenders. Delicious



spreads for breads. Bread, cakes, pastries (*kuchen*) and baked goods.

Appendix: Glossary, books and addresses: gomashio (*gomasio*; sesame salt), graham flour (*Graham-Paniermehl*; see *Vollkornbrösel*), Indonesian soy sauce, margarine, miso, nigari, okara, mushroom soy sauce (*Pilz-Sojasauce*), gomashio (*Sesamsalz*; *Gomasio*), soybeans (*Sojabohnen*), textured soy flour (*Sojamarke*, TVP), tahini (*sessamus*), defatted soy flour (*Sojamehl fettarm*), whole (full-fat) soy flour (*Vollsojamehl*; *Sojamehl vollfett*), soy oil, soy sauce (*Sojasauce*), soy grits (*Sojaschrot*), tofu (*Sojaquark oder -käse*), tofu mayonnaise, Worcestershire sauce (*Worcestershiresauce*). Address: West Germany.

1060. Roberts, Anna. 1984. The Protoveg cook book: Recipes using textured soya protein. Petersfield, Hampshire, England: Published by Direct Foods Ltd. 88 p. Comb bound. Illust. Recipe index. 15 x 21 cm.

• **Summary:** See next page. Protoveg is Direct Foods' and

the Roberts' brand name for textured soya protein [TVP®]; Protoveg is sold in two textures (mince and chunks) and in many flavors (beef, ham, pork, natural, etc.).

Contents: Foreword. Calorie comparisons (minced beef vs. Protoveg). Protoveg recipes. Protoveg menu recipes. Multiple choice recipes. Oven temperatures. Imperial to metric conversions. Analyses [nutritional composition of each type of Protoveg]. Index to recipes (alphabetical by recipe name).

The first page (unnumbered): "Anna Roberts, chairman and co-founder of Direct Foods Limited, has been a vegetarian for twenty-five years. She and her husband Peter turned away from a meat diet whilst still farming in Hampshire. Their three grown up daughters and their grandchildren are following the same path. These recipes will be found invaluable to those seeking an alternative protein source."

"Dedicated to all those who are trying to follow a humane diet."

"Foreword (by Peter Roberts): What is it, Protoveg?"

"It is a direct food, that is to say it comes direct from the growing plant and does not depend on plant matter being converted through the gut of an animal.

"It is a protein food and can be used to take the place of meat in countless recipes. The variety of its use is limited only by your imagination. The recipes in

this book are put forward to start you off, and you will soon be experimenting with ideas of your own. In fact some of the recipes in this cookbook were submitted for the various Protoveg Recipe Competitions which have been run by Direct Foods Ltd. and we are grateful to our customers for them.

"Protoveg was the first textured soya protein food on the retail market in Britain and we published the first cookbook on the UK market—'The Earth Shall Feed Us'. It's first edition was sold out in a very short time but was not reprinted as some of the varieties in it were no longer available. In many ways 'The Protoveg Cookbook' is its successor but has been improved and expanded.

"Protoveg can be used to 'extend' meat by mixing the beef minced variety with minced beef, for instance, but this is rarely as successful as hoped for, and it is better used on its own. Many of the advantages are lost when mixing it with meat. You introduce gristle and cholesterol and you have to



Obviously they were all pullets, but what happened at the hatchery to all the cock chicks?

“To keep a cow profitably she has to have a calf every year, after which she will give you a thousand gallons of milk, spread over ten months. She was never designed to give that much milk. Breeding and nutrition make her give four times what she would yield in the wild, and in the wild she would only have a calf about every third year. The pressures put on the patient cow cause her great discomfort when newly in milk and deplete her reserves so that her productive life is short, perhaps only three lactations.

“A herd of dairy cattle in a meadow is an idyllic scene, and certainly the cows enjoy themselves, build up relationships with one another, have their special friends, likes, dislikes, and some are cunning and mischievous while others lazy or complacent.

“Unfortunately, behind it all there is diabolical cruelty. When the calf is born it sucks the colostrum or ‘beastings’ from its mother while it is still wet from the birth. The mother licks and fusses about it. This first milk contains antibodies that will protect the calf from its childhood diseases.

“But then when the mother-bond is at its strongest the calf is taken away. Separated, the cow and calf call for one another night and day for two or even three days. They have

“No such thing was in existence at that time but some god must have been listening because two years later textured soya protein was developed in America and we were able to obtain certain marketing rights. Protoveg was launched.

“There are hopes that the food science techniques learned can one day be applied to field beans, sunflower, grain peas and the white lupin grain. What a breakthrough that will be. Farmers will be able to reintroduce rotations to get away from the barley-barley-barley monocropping that demands so many toxic chemicals, and they will be able to grow a greater variety of cash-crops without the need to exploit beautiful animals in the squalour of factory farms.

“Bon appetit!—Peter Roberts.”

Talk with Peter Roberts, 12 Dec. 1990. This book, which was published in 1984, sold about 8,000 copies via mail order and health food shops. Address: Hampshire, England.

1061. **Product Name:** [Textured Vegetable Protein].

**Manufacturer’s Name:** Productos Icolpan.

**Manufacturer’s Address:** Medellin, Colombia.

**Date of Introduction:** 1984?

**New Product–Documentation:** Letter from Robert Folkenberg. 1983. Feb. 15. “This company, organized in 1972, has ordered the necessary equipment to produce TVP

but they are not yet in production.”

**1062. Product Name:** Soybean Oil, and Soybean Oil Meal.

**Manufacturer's Name:** Archer Daniels Midland Co.

**Manufacturer's Address:** Fostoria, Ohio.

**Date of Introduction:** 1985 January.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** *J. of the American Oil Chemists' Soc.* 1985. “Soy pioneer bows out, others grow bigger.” March. p. 474, 476. On 12 Jan. 1985 A.E. Staley Manufacturing Co. announced that it had sold its five soy processing plants “to Illinois-based Independent Soy Processors Co., owned by a general partnership of individuals associated with Archer Daniels Midland (ADM) and including ADM as a minority partner.” One of the plants was at Fostoria, Ohio.

Note: The Staley Continental Annual Report for 1985 states (p. 40) that the five soybean processing plants were sold on 11 Jan. 1985 for approximately \$84 million in cash.

**1063. Product Name:** Soybean Oil, and Soybean Oil Meal.

**Manufacturer's Name:** Archer Daniels Midland Co.

**Manufacturer's Address:** Des Moines, Iowa.

**Date of Introduction:** 1985 January.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** *J. of the American Oil Chemists' Soc.* 1985. “Soy pioneer bows out, others grow bigger.” March. p. 474, 476. On 12 Jan. 1985 A.E. Staley Manufacturing Co. announced that it had sold its five soy processing plants “to Illinois-based Independent Soy Processors Co., owned by a general partnership of individuals associated with Archer Daniels Midland (ADM) and including ADM as a minority partner.” One of the plants was at Des Moines, Iowa.

Note: The Staley Continental Annual Report for 1985 states (p. 40) that the five soybean processing plants were sold on 11 Jan. 1985 for approximately \$84 million in cash.

**1064. Product Name:** Soybean Oil, and Soybean Oil Meal.

**Manufacturer's Name:** Archer Daniels Midland Co.

**Manufacturer's Address:** Frankfort, Indiana.

**Date of Introduction:** 1985 January.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** *J. of the American Oil Chemists' Soc.* 1985. “Soy pioneer bows out, others grow bigger.” March. p. 474, 476. On 12 Jan. 1985 A.E. Staley Manufacturing Co. announced that it had sold its five soy processing plants “to Illinois-based Independent Soy Processors Co., owned by a general partnership of individuals associated with Archer Daniels Midland (ADM) and including ADM as a minority partner.” One of the plants

was at Frankfort, Indiana.

Note: The Staley Continental Annual Report for 1985 states (p. 40) that the five soybean processing plants were sold on 11 Jan. 1985 for approximately \$84 million in cash.

**1065. Product Name:** Soybean Oil, and Soybean Oil Meal.

**Manufacturer's Name:** Archer Daniels Midland Co.

**Manufacturer's Address:** Champaign, Illinois.

**Date of Introduction:** 1985 January.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** *J. of the American Oil Chemists' Soc.* 1985. “Soy pioneer bows out, others grow bigger.” March. p. 474, 476. On 12 Jan. 1985 A.E. Staley Manufacturing Co. announced that it had sold its five soy processing plants “to Illinois-based Independent Soy Processors Co., owned by a general partnership of individuals associated with Archer Daniels Midland (ADM) and including ADM as a minority partner.” One of the plants was at Champaign, Illinois.

Note: The Staley Continental Annual Report for 1985 states (p. 40) that the five soybean processing plants were sold on 11 Jan. 1985 for approximately \$84 million in cash.

**1066. Product Name:** Soybean Oil, and Soybean Oil Meal.

**Manufacturer's Name:** Archer Daniels Midland Co.

**Manufacturer's Address:** Mexico, Missouri.

**Date of Introduction:** 1985 January.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** *J. of the American Oil Chemists' Soc.* 1985. “Soy pioneer bows out, others grow bigger.” March. p. 474, 476. On 12 Jan. 1985 A.E. Staley Manufacturing Co. announced that it had sold its five soy processing plants “to Illinois-based Independent Soy Processors Co., owned by a general partnership of individuals associated with Archer Daniels Midland (ADM) and including ADM as a minority partner.” One of the plants was at Mexico, Missouri.

Note: The Staley Continental Annual Report for 1985 states (p. 40) that the five soybean processing plants were sold on 11 Jan. 1985 for approximately \$84 million in cash.

1067. *Wall Street Journal*. 1985. A.E. Staley sells soybean business to partnership. Jan. 14. p. 8, col. 2.

• **Summary:** Staley continues to divest itself of soybean operations. It is selling 4 mills in Illinois, Ohio, Indiana, and Missouri, and a mill and oil refinery in Iowa. Independent Soy Processors (ISP) includes Archer Daniels Midland as a minority shareholder. The mills have been leased to, and are being operated by, ADM.

1068. *CSY FYI (Central Soya Newsletter, Fort Wayne, Indiana)*. 1985. New processing plant a waterfront

institution: Victory Soya Mills. Jan. p. 3-4.

• **Summary:** Central Soya acquired Victory Soya Mills in Toronto 7 months ago. Canada's largest soybean crushing plant, it processes 1,350 tons of soybeans daily, 7 days a week, 24 hours a day. It has recently been operating at near record volume since two of the mill's chief competitors (Mapleleaf Monarch and Canadian Vegetable Oil Products) have endured strikes in recent months.

Central Soya's first processing plant in Canada, it employs 118 people. Its main products are soy oil (for food and industrial uses), and soybean meal (used in livestock and poultry feeds). Other products include lecithin and soybean flour, both used in the baking and confectionery trades. The plant has been a Toronto waterfront institution since World War II. It was built during the early 1940s by financier E.P. Taylor, and originally operated as Sunsoy Products Ltd., the first [sic] soybean processor in Canada.

1069. Young, L. Steven. 1985. Work with soy protein products by ADM and Central Soya, including soy ice creams and soy protein isolates (Three interviews). Conducted by William Shurtleff of Soyfoods Center, Jan. 9 and 16, Feb. 14. 7 p. transcript.

• **Summary:** ADM and Ralston Purina have approximately equal shares of the market for isolated soy proteins; there are no other major manufacturers. In 1984 approximate total use of isolates, with Tofutti as a major user, was 200,000 to 400,000 lb as delivered. Since only 2% of the soy ice cream mix is isolates, this translates into 10 to 20 million lb of mix. To convert this to gallons, figure 40-50% overrun, leading to 3 to 3.5 million gallons of nondairy frozen desserts.

Why did Central Soya get out of the soy protein isolate business at the very time when they were the world leader with their line of Promine products? Probably because it was not profitable. When they got out, they literally handed the market over to Ralston Purina. They told their former customers to buy from Purina, and even which products to buy. This move made Purina's isolate business profitable. Prior to that, Purina was within a year of getting out of isolates. Address: ADM, Manger of Product Applications, Food Research Div., 1825 N. Laramie, Chicago, Illinois, 60639.

1070. Rich, Robert. 1985. History of Rich Products Corporation's work with soy-based dairy analogs: Rich wins legal battles for non-dairy products (Interview: Continued—Document Part III). Conducted by William Shurtleff of Soyfoods Center, Feb. 8 and March 20. 12 p. transcript.

• **Summary:** (Continued): The new formulation had numerous advantages over its predecessor. Its flavor was better and its shelf life at 40°F was extended to 6 months, from 3-4 weeks. It could be whipped to a stiffness never before attained by any cream or filled cream (containing added vegetable fat). It whipped up to 4 times its liquid

volume, giving more than double the yield of dairy whipping cream. It retained overrun, freshness, flavor, and a "decorator's edge" for more than 48 hours at temperatures as high as 80°F. The base had a unique advantage over dairy whipping cream. It could be reconstituted or extended with either the usual water or nonfat milk, or with fruit juices to give special effects such as an orange icing or filling. Now Rich began to introduce the new Whip Topping in various sizes. In 1952 came Sundi-whip in an 8-ounce pressurized can for soda fountains and over-the-counter trade. In about 1953 appeared Rich's Green Label Whip Topping, which was developed for bakery and institutional use. Prior to mid-1955 Whip Topping had been Rich's only product. At that time they launched Rich's Frozen Chocolate Eclairs, which had Whip Topping as the filling. The eclairs quickly became enormously successful, and were called "the hottest thing to hit the frozen food industry in the last five years." In February 1955 Quick Frozen Foods published an excellent 27-page, tenth anniversary story of Rich Products' first decade, upon which we have drawn heavily. The 1960s. In 1963 Rich Products introduced Coffee Rich, a frozen liquid coffee whitener. It was test marketed in Baltimore. Rich deliberately used the generic disclaimer "coffee whitener" rather than "non-dairy creamer" to avoid as much as possible stepping on the toes of dairy interests. Coffee Rich was the second such liquid product to be sold in America; Presto Food Products in Kansas City, Missouri, had introduced a non-dairy coffee creamer named Mocha Mix (containing soy protein) in 1950, although Rich was not aware of it. But Rich's product was the first frozen liquid non-dairy creamer. The original Coffee Rich used coconut oil and contained no protein, being based on the 1953 patent formulation. The lack of protein gave the product a long shelf life when sold refrigerated in dairy cases, as was planned. But the product started settling out, so the company switched to using sodium caseinate as a protein source, then in about 1963 began using soy protein (typically about 0.75% by weight) as the main protein source. In the mid-1970s soy oil replaced half of the coconut oil, then later in the 1970s all of it. The dairy industry spent a small fortune trying to keep Coffee Rich off the market. Its fight against Whip Topping had been short lived largely because heavy whipping cream (of which little was sold and lots spoiled) was not a big money maker for milk dealers and dairies. But cream was the "bread and butter" of the dairy industry, and it girded to fight in state after state to the bitter end. In some states dairy interests claimed Coffee Rich was an "imitation cream" and hence against the state law; in others they claimed it was mislabeled because the words "imitation cream" did not appear on the label. The first lawsuit was in Louisiana in 1961. Rich Products won in a one-day trial. The defense was exactly the same as it had been for Whip Topping. Coffee Rich was a replacement, not an imitation. Angered by this defeat and hoping to break Rich by exhausting his financial

resources on court cases, dairy interests had Coffee Rich seized in Virginia, Michigan, and Washington. But the former college wrestling and football star wasn't easily downed. He parried by persuading the Carnation Company (which sold Coffee Mate, a powdered caseinate-based coffee whitener) to split all forthcoming legal fees. Two or three years later General Foods joined the non-dairy defense fund. Their Birdseye Division sold Dream Whip, a powdered whip topping, and later the famous non-dairy Cool Whip. Now all legal fees were split three ways. Dick Borne of RGB Labs says they were sharing expenses too before the association was formed, and that General Mills came in after. At about this time (in 1968) the group finally established the National Association for Advanced Foods, to defend the rights of non-dairy products and to be sure that no small companies went off half-cocked and lost precedent setting lawsuits. Ellis Arnall was the Association's first director; they charged annual dues plus assessments and took in new members. The many trials continued to be fought in the name of Rich Products Corp., since it had prestige. In the 1960s a small company selling Instant Blend, a non-dairy creamer or topping, after deciding to defend itself, lost its lawsuit 7-0 in the Massachusetts supreme court. They were kindly permitted to continue selling the product as long as it was distinctively colored—blue! The dairy industry gloated. A year later Rich Products deliberately sold Coffee Rich in Massachusetts so that it would be seized. Their case also went to the state supreme court, but this time Rich's team of seasoned attorneys won... 7-0! By 1966 some 15 consecutive court decisions had ruled in Rich's favor, though five of these went as far as the state supreme court. By 1974 the number of cases and victories for Coffee Rich had grown to 40. That year the Kansas Supreme Court declared Coffee Rich "a new and distinct food" and the milk lobby gave up. Rich Products' success in these suits led to the creation of a new food product category: Coffee whitener. Coffee Rich was the company's third product to contain a significant amount of soy protein. But Rich did not especially promote the fact that his products contained soy on the labels or in advertising, though he often discussed it with reporters. The company initially bought its isolated soy protein isolates for Coffee Rich from one or more of the big manufacturers (Central Soya, ADM, or Glidden). In the mid-1960s a powdered Coffee Rich was developed. In about 1965 Rich Products stopped using soy protein in its retail Whip Topping and switched over to the non-protein formulation adopted for institutional use in 1953. At about that time, company stopped making isolated soy proteins. By 1967 Bob Rich had built Wilber Farms Dairy into the largest solely owned, independent milk company in America. That year he decided to sell it and get out of the dairy business. Rich Products (whose plant was now 140,000 square feet) was doing well enough with non-dairy products to support him amply. In 1969 Bob Rich's oldest son, Robert Rich, Jr., started to work

at the company's Buffalo headquarters as sales manager. After graduating from Williams College in 1963, he had run the Rich Products plant in Fort Erie, Ontario, Canada. After setting up the company's first marketing department in Buffalo, he embarked on a bold program of acquisitions, based on the observation the Rich Products then had more frozen food distributors than any other frozen food packer in the USA. Company sales in 1969 were \$33 million. The first acquisition, that year, was the Elmtree Baking Co. in Appleton, Wisconsin. Sales began to rise by leaps and bounds. The 1970s. In 1975 food sales from Rich Products and affiliates had topped \$100 million a year. That year the company was awarded the National Frozen Foods Convention's first Grand Award, for "achievement in developing the frozen food industry..." and for his "pioneering work in researching and popularizing simulated frozen dairy products" (*Quick Frozen Foods* 1975). In November 1978 Rich Products launched an exciting new product and a revolutionary new process. The product was Bettercreme, a non-dairy icing that whips and is used primarily on cakes. It contained an enzyme-modified isolated soy protein (made perhaps by A.E. Staley's Gunther Products). (Continued). Address: Chairman of the Board, Rich Products Corp., P.O. Box 245 (1150 Niagara St.), Buffalo, New York. Phone: 716-878-8000.

1071. Aldon, Don. 1985. Work with Swift & Co. and non-dairy frozen desserts (Interview). *SoyaScan Notes*. Feb. 26. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Don started with Swift & Co. in 1961 in the "Vegetable Protein Products Division," a brand new division of the oil mill department. The oil was their main product and the protein-rich meal was a by-product. The president of the oil mill department started this department to turn the meal into food. Research on vegetable proteins started in about 1957-58.

Their first product, launched in early 1961, was brand-named SFP (Swift's Protein Food), a water-extracted, granular soy protein concentrate, containing 70% protein. It was not an isoelectric concentrate, and it was not texturized. It was used mostly in ground beef products, but also in some breads. More was sold to other companies than used in Swift's meat products.

The next product was Texgran, a textured soy flour (somewhat like today's TVP), invented by Dean Wilding in about 1963-64. He invented a texturization process while trying to find a way to extrusion cook soy flour. He visited Wenger and saw a variety of products they made. He recognized their value and bought a machine. Don worked for about 18 months developing the process, doing research, and generating information to be used in the patent. Swift started selling the product before they applied for the patent. "As soon as our competitors saw this product, they recognized its value because they had been extruding dog

food. Ralston Purina slammed things together and got a patent application in first. Two weeks later ADM had one in. Then 3-4 weeks later Swift applied.” Swift started selling Texgran in 1964-65. The patent was finally issued in about 1971-72. Litigation went on for years and years between the three companies. Finally Ralston got the basic patent since they had applied first. ADM and Swift got a royalty-free license. They did that just to settle the litigation. Note: The final key U.S. patent (No. 3,940,495) was issued to Ronald Flier of Ralston Purina in Feb. 1976, based on an application filed on 17 Jan. 1973, but based on an earlier application filed on 10 July 1964.

Texgran was used by Swift as a meat extender and sold to other companies as well. The first retail product in which Texgran was used was artificial bacon bits, the first such product on the market. Don developed this product, which was launched in about 1977-78. It was based on Texgran, with flavors added then smoked in a smokehouse. Right after that, General Mills introduced Bac\*O’s.

Swift, which had a combined dairy and ice cream department (the main plant was in Holland, Michigan) was also involved in making soy ice creams, using soy protein isolates purchased from Central Soya. For years, Swift also made an artificial nonfat dried milk (NFDM) called Provide, based on soy flour and cheese whey. They introduced it in about 1973-74. It was used by bakeries in place of NFDM. But Swift never really got into using isolates commercially. They were preparing to do so when they sold the business.

Dean’s Dairy in Arizona was the first to start selling Swift’s artificial milk, which contained vegetable fat, nonfat dry milk, and soy isolates. The product didn’t last very long; it was used to sort of test the market. For details, ask Tony Scaletto, who was Mr. Dipper Dan—head of Swift’s ice cream operations. “We had those ice cream parlors nationwide at one time. He developed all the ice creams and novelties. He may not remember all that went on with soy; we were compartmentalized.” Note: Talk with Tony Scaletto (Feb. 26): He is certain that Swift never had a frozen dessert containing soy protein on the market. He tried using soy protein in a soft-serve product but it was unsuccessful.

Swift got out of the soy protein business because it was driven by the vegetable oil business. They sold the whole oil business (3 crushing plants) to A.E. Staley in about 1979. The one making soy products was in Champaign, Illinois. He is not sure exactly why, but probably because sales and earnings fluctuated too much and could not be controlled. Also, most of the old-timers who really knew the business had retired.

Staley kept Provide and had it custom made outside. Since Staley had its own textured soy protein product, it shut down the Swift protein plant; SFP lingered on, then died.

Concerning Swift’s early history: They started as a meat packer. Then in the 1930s or 1940s they started making oil products from lard. In about 1938, to extend their business,

they got into the oil extraction business and soybeans. Today their big products are processed meats and poultry. Swift bought Hunt-Wesson in late 1983 or 1984. Swift & Co. is now a division of Beatrice Meats, Inc. in Oak Brook, Illinois. All the old company records on soy have been discarded.

Dean Wilding is now in the Philippines building houses. He left Kraft several years ago. His son is a contractor. Address: Alberto Culver, 2525 Armitage, Melrose Park, Illinois. Phone: 312-450-3000.

1072. Johnson, Dale W. 1985. Work with The Glidden Company and Central Soya (Interview). Conducted by William Shurtleff of Soyfoods Center, Feb. 27. 5 p. transcript.

• **Summary:** Dale went to work for Glidden in 1948. The following people worked at Glidden: Walter Bain, Sidney Circle (who now has Parkinson’s disease), Andy Engstrom, Art Levinson (who was with Spencer Kellogg & Sons in the 1920s and 1930s before coming to Glidden), Willard C. Lighter, Ed Meyer, Joseph Rakosky. People who worked at Central Soya before Central shut down their food labs in early 1949: Louis Sair who went to Griffith Laboratories, Ken Gunther who founded Gunther Products, and E.B. Oberg who went to Glidden and then Carnation.

Industrial soy protein isolates really started commercially in about 1934. They were originally used mainly as coatings for paper, but some were used in paints, shoe polish, and other miscellaneous uses. Procter & Gamble started making industrial soy protein isolates in the late 1930s or early 1940s; they made an isolate that went into Spic and Span, a wall cleanser. The isolate served both as a good detergent and to give a coating to a painted wall to make it easier to clean the second time.

Also discusses Promine D, Amisoy, Ralston Purina, Pillsbury’s work with soy isolates, Picot Laboratory in Mexico, General Foods, Pillsbury, Morel, Sidney Circle’s move to Anderson Clayton in 1967, why Central Soya sold its isolate business to ADM, the story of how Glidden developed soy protein concentrate (first commercialized as Promosoy by Central Soya in the early 1960s), first big sale of Promosoy in the early 1960s to Mead Johnson for use in their Metrecal Wafer (it was not used in liquid Metrecal), Central Soya’s concentrate plant at Gibson City, Illinois, Henry Ford’s researchers who did the pioneering work in whipped toppings, especially Rex Diamond who eventually went to Rich Products and ended up committing suicide, and Bob Smith who went to Delsoy, Bob Boyer and Francis Calvert went to Ralston Purina, Bill Atkinson went to ADM, Jim Liggett at Central Soya developed Rich Freeze (a soy ice cream). Address: Food Ingredients (Minnesota), Inc., 2121 Toledo Ave. No., Golden Valley, Minnesota 55422. Phone: 612-588-9456.

1073. *Australian Dairy Foods*. 1985. Soy report: Soy blends

to overcome disadvantages? Frozen soybean desserts. Technology is here for soy beverages. Feb. p. 46.

• **Summary:** Blends of soymilk and dairy milk are being considered in Australia. Address: Australia.

1074. *Australian Dairy Foods*. 1985. Soy report: Six new soy drinks expected. Soy products will enter market. Feb. p. 48.

• **Summary:** The first Australian soy drink last year was “Golden Life,” a “sport food” launched by Martin Pharmaceuticals in Tetra Brik cartons. Also concerns: Anders Linder of STS-Soya Technology Systems, Rajasoya, Vital, Soyvita, Granose. Address: Australia.

1075. Boyer, Robert A. 1985. Reminiscences: Automotive design—Oral history project. Dearborn, Michigan: Henry Ford Museum and Greenfield Village. 130 p. Accession #1673.

• **Summary:** This is the transcript of an interview conducted by Dave Crippen of the Henry Ford Museum on 7 Feb. 1985 at Mr. Boyer’s home in Dunedin, Florida. It covers all aspects of Boyer’s work with soybeans at the Ford Motor Co., including: Growing up in Royal Oak, Michigan; his father worked in the accounting department of the Ford Motor Co. at Highland Park, Michigan (p. 1). Boyer’s first meeting with Frank Campsall (p. 2). Growing up at the Wayside Inn (the oldest hotel in America, in South Sudbury, Massachusetts, p. 1-6). Attending high school in Framingham, Massachusetts (p. 6). First meeting with Henry Ford when the two ice skated together on the mill pond behind the Wayside Inn (p. 7). Moving to Dearborn in Sept. 1927 to attend Ford’s Trade School (p. 7-11). Early work at the chemical plant (quarter-size model of Iron Mountain plant) in Greenfield Village (p. 12-13). Ford’s trip to Germany [Peace Ship to Europe, in 1915 during World War I?] crystallized a lot of his thinking. The Great Depression and the origins of his chemurgic thinking. In 1934 the first National Chemurgic Conference was held at Dearborn Inn; Boyer was in charge of the program. Mr. Irene DuPont attended and Mr. Ford spent a lot of time with him. Before that, the DuPonts and the big banks did not trust Ford. (p. 14). Opening of Greenfield Village in late 1929 on the 50th anniversary of Edison’s first successful light bulb (p. 15). Chemical experiments on truckloads of farm crops using a retort; Frank Calvert (p. 16-19).

Experiments starting in about 1933 using hexane as a solvent to extract the oil from soybeans; the Ford Extractor (p. 20-23). Boyer’s group wanted to get pure protein from soybeans. So “in the lab we developed our own process for extracting the oil... We used hexane solvent, like dry cleaning. We’d flake the beans and run them through a pipe that was full of hexane on an angle with a screw in it.” Hexane solvent is “distilled out of petroleum. It has a very narrow boiling point—66° centigrade. The Ford extractor...

got quite a lot of attention. We built it across the street from the chemical plant. It was about 150 feet away. Mounted it all by itself because everybody was afraid of fire.” A roof was built over it but no walls. It was probably built in about 1933.

In 1933 at the World’s Fair [sic, the Ford Exposition of Progress] in New York City, Boyer’s group had a glass model (on a table) of this extractor that used hexane solvent.

Note: Ford boycotted Chicago’s A Century of Progress Exposition which opened in 1933, in part to call attention to the company’s 30th anniversary; he held his own “industrial fair,” first in Detroit and then in New York, in late 1933. *Business Week* described it as “the greatest industrial show ever held.” Some 2.3 million people attended the two-week show in New York.

A working model of the Ford extractor, using hexane solvent, was at the Chicago World’s Fair, starting in mid-1934, in the Ford Industrial Barn. “They would never let you do that today. Too dangerous.”

Research on purified soy protein and soy plastics with formaldehyde; Bakelite (p. 24-25). Use of soy oil for foundry core binders for casting the Ford V-8 engine block; thus, the soy experiments are now commercialized. Building a 50 ton/day extractor (p. 26-27). Spinning soy protein fiber like rayon, based on spinning milk protein in Italy. Using the fibers to make wrinkle resistant synthetic wool, a suit of clothes for Henry Ford and others, overcoats, neckties, felt hats. “We also found that these fibers blended in very well with rabbit fur for making men’s felt hats. So the Hat Corporation of America took all the fiber we could make. It wasn’t very much and they would blend it in with rabbit fur. And they actually had them [the men’s felt hats] on the market.” Rabbit fur is very expensive (p. 29-36). Ford’s suit of clothes contained 65% wool and 35% soy fiber. Boyer leaves Ford Motor Co. in 1943. Problem with fiber was tensile strength, especially wet strength. Ford’s interest in this fiber work, and his fitness at age 75 (p. 37-38). Ford “was not a true vegetarian but he was pretty close” (p. 38). Edsel Ruddiman’s work with foods (p. 39-47). Boyer and Ruddiman attend American Soybean Assoc. soybean conference in Washington, DC [in Sept. 1932] where they saw “leather-like products that the Chinese make” [yuba]. Boyer tried unsuccessfully to use the idea to make “synthetic leather.” USDA’s experimental farm in Holgate, Ohio, where many soybeans sent back by W.J. Morse were tested (p. 40-42). Work with soybean milk (p. 43-46). The executive dining room in the Engineering Laboratory. Henry Ford invited Boyer to lunch there about 6 times (p. 45). Development of soy ice cream; lipoxidase enzyme inactivation (p. 45-46).

Visits to Battle Creek, Michigan and Dr. John Harvey Kellogg (p. 47). Boyer’s work was with industrial products; the plastic car and structural plastics with hemp, flax, and phenol formaldehyde (soya protein Bakelite resin) (p. 47-64,

70). Making trunk lids using a hydraulic press (p. 50). Ford's famous axe demonstration on a trunk lid (p. 50-52). Lowell Overly and Joe Stewart (p. 53-56, 61, 78-79). Boyer drives the plastic car home (p. 63). Ford's aim with the plastic car: to provide industrial markets for farmers (p. 65). World War II stops plastic car development (p. 65-66). Contract to build an airplane wing of plastic (p. 66-70). The plastic lid and car contain little or no soy (p. 70). Fiberglass and the Chevrolet Corvette (p. 71). Plexiglas and the B-24 bomber made at Willow Run (p. 72). Edsel Ford's death of stomach cancer in the spring of 1943 and its effect on his father, Henry (p. 73-74). Ending work with soy fiber (p. 74).

Boyer leaves Ford in 1943 and goes to work for Drackett Co. in Cincinnati, Ohio. Wife needs to leave Detroit. After 1943 Boyer's career really takes off. Dr. Gangloff (p. 75-77). Use of soy fiber by Drackett in felt hats. "We sold them a lot of fiber and we decided to build a bigger plant." Building a protein plant and a fiber plant in Cincinnati big enough to supply the hat company's demands and larger "than we needed just to supply our fiber operation." They also had a big operation in Cincinnati for high-impact (not structural) plastic (p. 78-80). Drackett's marketing people knew how to market Windex and Drano "but they had no feeling for the soybean operation. So when Mr. Drackett died, they sold the whole soybean plant to Archer-Daniels-Midland (ADM, p. 81-83). Before Mr. Drackett died, Boyer's division had developed commercial soy products, and Drackett was making money on the plastic (phenol formaldehyde plus hemp) and the fiber (p. 81). Use of soy protein as a paper coating (p. 83). ADM finally closes the old Drackett protein plant and sells it to Central Soya, which used the million bushel elevator capacity for storage (p. 83-84).

Shortly after Mr. Drackett died, Boyer left Drackett to work on his edible soy fiber, where he owned patents. "If we can make a fiber from soy protein that resembles the outside of a sheep, why not make a fiber that will resemble the inside (p. 84-86). Idea of building an edible soy protein plant is in Cincinnati, with Mr. Drackett's approval (p. 87). Boyer tries to find companies to license rights to his landmark patent: Virginia Carolina Chemical (Taftville, Connecticut, p. 88); Swift & Co. (p. 89-92); Unilever, which was interested in peanut protein in Africa and at Port Sunlight near Liverpool (p. 92-94, 112-13); General Foods and Nabisco (Fairmont, New Jersey research lab) (p. 94, 99). Unilever and Swift pay licensing fees of \$20,000 a year plus consulting fees. General Mills and Ralston Purina (p. 94-95). Why Swift dropped its interest (p. 95-96). General Mills and Bacos (p. 96). Patent expires in 1971 after 17 years (p. 96). Worthington Foods (p. 97). Ralston Purina was getting into protein. In about 1956-58 they "had bought Procter & Gamble's protein plant in Louisville [Kentucky], which was making industrial protein for paper coating" (p. 98). Worthington Foods was too small to make their own soy protein fibers, so Ralston Purina made it for them (p. 78-80). Ralston Purina's great

success with edible soy protein and their small conflict: pet food vs. human food (p. 100-01). From 1961 to 1971 Boyer was receiving licensing fees / patent royalties from Ralston Purina, Worthington, and General Mills (p. 102). General Mills and Bacos (p. 103-04). Ralston Purina's patent lawsuit against Far-Mar-Co. Ralston won \$8 million. Boyer testified as an expert witness (p. 104-05).

Boyer remarries and retires in 1971 (p. 102, 105, 107). Subsequent work with Miles and Worthington; the Morningstar Farms line (p. 105-08). Companies now spinning soy protein fiber (two in the Netherlands, one in Japan, one in Australia). Ford Foundation was not interested in his work with soy protein for Third World nations (p. 110). Central Soya bought the ADM plant that was located in Chicago (p. 113-14). Kellogg's Corn Soya breakfast cereal (p. 114-15). Worthington's Soyloin Steaks; all early Kellogg and Worthington vegetarian products based on wheat gluten (p. 119). When Worthington bought Battle Creek they got their lady research director; she worked at Worthington until she was quite elderly. Boyer visited her in her lab at Battle Creek several times (p. 119-20. Note: Josephine F. Williams was in charge of the lab and product development at Battle Creek, where she worked closely with Dr. John H. Kellogg. She kept similar positions at Worthington Foods, according to Ron McDermott). Henry Ford as a soybean pioneer and visionary. The soybean is now America's No. 2 cash crop and also our second largest earner of foreign exchange. "That really started from Ford. When we first started in 1931, hardly anybody ever heard of the soybean, and Henry Ford's penchant for publicity publicized the soybean... He certainly made it popular and made people become aware of it. Today it's darned important." He should be remembered as the "Father of the Soybean." "I always thought it would be nice if they would rebuild the [Soybean] laboratory [in Greenfield Village] or restore it like it was when we were doing the soybean work and give it the real credit that it deserves..." (p. 120). After Henry Ford died in 1947 his family wanted no part of any of his pet projects. They completely eradicated the old Ford company (p. 121). Henry Ford was deeply interested in the welfare of American farmers. His tractors and Model T were of great use to them (p. 121). Origins of Ford's interest in chemurgy; William Hale and Dow Chemical Co. in Midland, Michigan; the first three chemurgic conferences in Dearborn, Michigan, in May 1935, 1936, and 1937 (p. 122-27). Ford and Ruddiman establish a complete canning line for good-tasting green soybeans on the outskirts of the Ford estate. The equipment was quite expensive. When World War II threatened, Ford gave it to Michigan State University to teach canning to students. (p. 129-30). Boyer's personal impressions of Henry Ford (p. 128-30). Address: 632 Edgewater Dr. #731, Dunedin, Florida 33528.

1076. **Product Name:** Granose Soya-Franks: Vegetarian

Soya-Sausages.

**Manufacturer's Name:** Granose Foods Ltd. (Distributor).

Made in West Germany by DE-VAU-GE.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1985 February.

**Ingredients:** Water, vegetable oils, onions, egg protein, wheat protein, soya protein, spices, seasonings, salt, gelling agent (guar gum, carob gum), wheat flour, glucose, apples, smoke flavour, oat-flakes, breadcrumbs, herbs, milk protein, soya sauce.

**Wt/Vol., Packaging, Price:** 200 gm cellophane wrapped pack. Retail for £1.06.

**How Stored:** Refrigerated or frozen.

**Nutrition:** Per 100 gm.: Calories 272.

**New Product–Documentation:** Food Report (Lehmann). 1985. Feb. The company says that these are just the first of some 20 new products planned for introduction this year.

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by DE-VAU-GE, was introduced in Feb. 1985.

Label sent by Granose. 1990. July 11. 2 by 5.5 inches. Red, brown, green, yellow, and black on white.

1077. **Product Name:** Granose Chicken Style Curry.

**Manufacturer's Name:** Granose Foods Ltd.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1985 February.

**Wt/Vol., Packaging, Price:** 425 gm can for £0.89.

**How Stored:** Shelf stable; refrigerate after opening.

**New Product–Documentation:** Food Report (Lehmann). 1985. Feb.

Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by Granose, was introduced in Feb. 1985.

1078. Gunther, J. Kenneth. 1985. History of Gunther Products (Interview). Conducted by William Shurtleff of Soyfoods Center, March 7. 3 p. transcript. [3 ref]

• **Summary:** Gunther Products Inc. was founded by J. Kenneth Gunther in 1949. He received a degree in biological chemistry at the University of Illinois in 1946, then worked briefly as a researcher at Swift & Co. in Chicago. In September 1944 he was offered a job by Central Soya Co. as director of their Central Research Laboratory; there he began his first research work with soy proteins.

Before he arrived, Central Soya had done work on developing a whipping agent from soy proteins. They hired an egg albumen expert from Armour & Co. named John R. ("Ray") Turner to sell the product, but it didn't sell well because of its poor quality. Though not trained as a researcher, Turner was nevertheless technically inclined and very curious. He did some experimental work to improve

the product and made several key discoveries, including the first successful use of enzyme hydrolysis of proteins with pepsin to make a whipping agent. In May and October of 1945 Turner applied for patents on his inventions; these were granted in 1949 and 1950 (U.S. Patent 2,489,208 and 2,520,581). In June 1946 Turner wrote an article in *The Manufacturing Confectioner* about "soy albumen," which had come into demand as a result of scarcities during World War II.

At Central Soya Ken Gunther also conducted research on whipping proteins made from soy protein. There he and Louis Sair improved on Turner's original, landmark patent invention. Like Turner, they hydrolyzed the soy proteins with pepsin, but they also separated and removed much of the insoluble protein from the solubles and added a little sodium chloride, giving a more concentrated whipping agent with greater whipping strength. On 6 June 1947 Raymond S. Burnett and James K. Gunther applied for a U.S. patent on this improved process for making soy albumen. The patent (No. 2,489,173) was granted on 22 Nov. 1949—before either of Turner's patents were granted!

Whipping agents and whip toppings are very different soy-based products. The whip toppings, such as Delsoy or Rich's Whip Topping, had a high fat and moisture content (about 35% fat, 55% water, and 10% sugar), and were used in place of whipping cream; they used a small amount of sodium proteinate that was not enzyme modified. Whipping agents or "soy albumen" type products, by contrast contained no fat, were modified (hydrolyzed) with enzymes, and were used in place of egg whites.

In the late 1940s Central Soya's founder, D.W. McMillen, forecast a huge depression. In early 1949 he fired most of his research staff, including Gunther. The outbreak of the Korean War in mid-1950 revived the U.S. economy so that McMillen's predicted depression was aborted.

In the summer of 1949 Ken Gunther founded Gunther Products in his home town of Galesburg, Illinois, where his family still lived and owned property. He purchased an exclusive license from Central Soya to manufacture enzyme-modified non-fat isolates under their patent. He paid license fees of 4% on sales for the next 14 years. Gunther Products bought food-grade soybean flakes (containing about 50% protein, also used in making soy flour) from A.E. Staley Mfg. Co. and from ADM. The main uses of Gunther's whipping proteins were in confectionery products, especially nougat-like or marshmallow-like nougat candies. The maker of Mars Candy Bars was one big customer. Most of the rest was used in icings and as an ingredient in a sponge cake mix (which sold very well in Australia). Lever Brothers was interested in Gunther's products for 2-3 years.

In 1969 Gunther Products was sold to the A.E. Staley Manufacturing Co. Ken Gunther, who was 62 years old at the time, needed \$750,000 to expand his plants to meet demand and Staley was very interested in getting into this kind of soy

protein business. Before that time Staley had done almost no research on soy protein foods in their huge laboratories—except for a little work on soy flour during World War II. Ken stayed on to run the business (which continued to be very successful), retiring in about 1973. Address: Gunther Products, 701 W. 6th St., Galesburg, Illinois 61401. Phone: 309-342-0119.

1079. Meyer, Edwin W. 1985. History of work with The Glidden Company (Interview). Conducted by William Shurtleff of Soyfoods Center, March 8. 5 p. transcript.

• **Summary:** A far-ranging interview on the history of The Glidden Co. and Central Soya.

Ed began working for Glidden in Aug. 1936. The work with soy proteins were just starting. He was invited to join the group by Dr. Percy Julian whom he had previously done some studies with at DePauw University in Greencastle, Indiana. Julian was a very famous Negro chemist. At DePauw, because of the very different role of blacks in society, they couldn't put him on the staff, so he was a research associate and did fine research in alkaloid chemistry. In late 1935 things heated up for blacks at DePauw so they thought it best if he moved on, even though it was a Methodist Episcopal School. He went to Glidden.

Dean Lewis of the Paper Institute in Appleton, Wisconsin, found Julian. Glidden had become interested in isolating soy proteins for industrial purposes in about 1933, when they had some pilot plant studies going in Cleveland [Ohio], their home base. Glidden got into soy through paints.

The Glidden Co. was founded in the early 1900s or late 1800s as a paint and varnish company; initially there was no connection with soy. It was a family owned concern. Adrian Joyce Sr., treasurer of the Sherwin-Williams paint company in the 1920s. He was an entrepreneur. He and several friends decided to go it on their own. The old-line Glidden family was selling their small paint and varnish company in Detroit [Michigan]. His investing group bought the company in about the 1920s. He got interested in soybeans because casein was the base for water-based paints in those early days, and vegetable oils were used quite extensively in paints, before resins took over the paint industry.

Joyce went to Europe and in Germany learned more about soybean processing. He saw the applications for Glidden. So in about 1933 Joyce and co-workers began to do some experimentation in Cleveland on isolating soy proteins for use in paints. Glidden had a paint plant in Chicago on LeClaire Ave. Joyce decided to put up a commercial soybean crushing plant on the property adjacent to the paint plant at 1825 N. Laramie. They did this in 1934, a combined solvent-exPELLER plant, with a double Hildebrandt unit from Germany. The capacity was about 500 US tons a day. At the same time, in 1934, they installed a full-scale protein isolation plant for industrial purposes. Both went into operation in early 1935. That was the first isolate plant

in America. But in October 1935 the solvent extraction plant blew up, and also leveled the soy protein isolation plant next door. It was a disaster. They boldly rebuilt the crushing plant with new Hildebrandt units (not larger) plus a bank of Anderson Expellers ("Expeller" is an Anderson trade name) but at that time they did not build a new protein isolation plant, just a pilot plant, which was in operation by 1936. It stayed as a pilot plant for several years.

Percy Julian and Ed Meyer both arrived in August 1936. Julian took over as Director of Research of Glidden's Soya Products Division. The first director of the Soya Products Division was Eric Wahlforss, a Finn. He was let go at the time and returned to Finland. Percy's task was to improve the isolated soy protein then being made in Glidden's pilot plant. They were working with the Paper Institute on using soy protein as a sizing and coating adhesive for paper. Paint was now of secondary interest. This expanded the horizons of industrial isolates. Julian, with his skeleton research force, Bernard Malter, Meyer, Donald Payne (chemical engineer from Purdue), began working to improve isolate quality in 1936. In late 1937 they began to build a commercial industrial isolate plant based upon new research findings. It went into operation in late 1938. George Walker was the chemical engineer in charge of the pilot plant; the plant manager was George Brett. The principal uses were paper coating and paper sizing. Research continued on using the isolates in water-based paints. In about 1937 Julian hired a young PhD out of Northwestern named E.B. Oberg. He came from the U.S. Gypsum Co. that had been making water-based paints. Julian was head of research until 1953.

In 1938 Meyer switched over to head the research effort on soy phosphatides (lecithin), reporting to Julian, but with his pay coming from Joe Eichberg of the American Lecithin Company. Glidden had a German lecithin plant put in along with the solvent extraction plant, making natural grades, containing 30-40% soy oil (as opposed to refined, oil-free grades). It was in place when Meyer arrived. In 6 months he got an assistant. In 1938 Meyer started the research on granular phosphatides (lecithin) that are very popular today in the health food market. They were selling food grade lecithin, containing oil, through American Lecithin Co. The lecithin was sold mostly to the confection trade as viscosity modifiers to chocolates, plasticizers to chewing gum, and cocoa-butter lecithin with oil-free lecithin was used in the confection trade as a viscosity modifier for chocolates. Meyer continued working on the granular isolates until he left to return to graduate school at Northwestern in September 1940. The project was the turned over to Herbert T. Iveson, a young man from the University of Illinois, who developed commercial granular lecithin in the early 1940s.

Glidden was definitely the first US company to have granular lecithin on the market. (Probably the first US commercial lecithin, non-granular, was made by ADM at their old solvent extraction plant on Blackhawk St. in

Chicago). American Lecithin had contracts with ADM, Glidden, and Hansa Muehle (which supplied information). [When Meyer returned to Glidden after graduate school, he worked with the fine chemicals crew on sterols, etc.]

Earliest food grade isolates in the USA. They were made by Glidden on a very small basis, using industrial grade isolates cleaned up and enzyme modified. It was enzyme modified and sold as a whipping agent into confections. The volume was very small. Meyer worked with Bernie Malter on this in the late 1930s. They fine-ground the industrial isolate and simply mixed it with papain enzyme. A key man in moving forward this modified isolate work was Mr. Art Levinson, then sales manager of the soy products division. Ed thinks Glidden conceived the idea of enzyme modification of isolates. Central Soya started research on enzyme modified isolates in the early 1940s and their work, especially that of Ken Gunther, improved on that of Glidden. The first patent on an enzyme modified isolate may have been by Levinson and A.G. Engstrom. Applied in late 1930s and granted in mid-1940s.

Note: See U.S. Patent 2,381,407. Issued 1945 Aug. 7. 4 p. Application filed 31 July 1940.

Later, in the late 1940s, Glidden made non-enzyme modified isolates at a small pilot plant.

Overview of 1930s. Main contributions: 1. The pioneering of soybean solvent extraction along with ADM. 2. Development of the concept of protein isolation of soybeans (separating a commercial purified protein from the soybean). Key isolate people were W.J. O'Brien, Vice President of R&D in Cleveland. He was the VP responsible for the Soya Products Division. Percy Julian, Roy Brett, etc. reported to him. Also Adrian Joyce was a key driving force. O'Brien was an executor in a sense. The paint field was their prime money maker. Within this was Glidden's firsts with commercial and small-scale edible soy isolates.

The Soya Products Div. was founded when they built the plants in 1934-35. The Glidden Co. bought the famous Cone and Brown Patents from I.F. Laucks, Co. Laucks was importing Manchurian soybean cake and grinding it up for use in plywood glues. Laucks sponsored the work of Cone and Brown on isolation of proteins. This was pioneering research. Cone and Brown he thinks were Laucks employees, not employed by Glidden. Residuals of I.F. Laucks still exist today.

Glidden's major contributions during 1940s. 1. Development of granular phosphatides to a commercial scale, and marketing of them to the dietary food industry. First sold in about 1942-43 to certain health food outlets = dietary outlets. Not used in other food products. 2. During the War Years industrial isolates came into their own, the process had been well established, so researchers were exploring other avenues. 3. Major contributions were minimized by the war effort. All of the protein after America entered the war was requisitioned by the Navy. It became the

base for the "bean soup" fire extinguishing foam. All Glidden protein went into that. Prior to this National Foam Systems (NFS) used scrap leather, hoofs, horns, hides to make fire extinguishing foam; it was digested and boiled vigorously with calcium hydroxide. Glidden sold isolated soy protein to NFS for this industrial use. On board a ship they would pump air into the liquid bean soup and it would foam to plaster burning ships, etc. This demand dried up after the war. The major thrust of Glidden's industrial plant then went back to the paper industry. Continued. Address: 1701 N. Sayre Ave., Chicago, Illinois 60635. Phone: 312-637-0936.

1080. Meyer, Edwin W. 1985. History of work with The Glidden Company (Interview) (Continued–Document part II). Conducted by William Shurtleff of Soyfoods Center, March 8. 5 p. transcript.

• **Summary:** (Continued): 4. In 1945, to add another chapter, Percy Julian hired Sidney J. Circle, who was put in charge of protein R&D. Under his direction a major effort was made to exploit the edible proteins. Before that it had been just drifting along. During the late 1940s a viable process was developed for making an edible product. Circle deserves credit for advances made. Tim Anson worked for Lever Brothers. Had been at the Rockefeller Inst. and made a name for himself in protein chemistry. He was interested in edible proteins and in the forefront of making meat analogs. Circle had set up a pilot plant and Glidden sold Lever Bros most of their material; it was used for test purposes. Not much came of it, except Anson patents, assigned to Unilever. Glidden's work continued into the early 1950s. Uses of those edible isolates was all at a laboratory stage. Ask Circle if any were sold.

Ed Wilhelm, a chemical engineer, came in in 1938. He could be a good information source. He lives in Florida.

Glidden began to realize in the mid-1950s that they were not going to succeed in the soy processing business unless they invested a lot more money. The soybean business had been growing. The meal had become a principal ingredient in mixed feeds. But Glidden realized that they could get a higher return on their investment if they spent their money to build company-owned paint stores. They had a big paint operation throughout this whole period, and still do. Ed does not know what percent of total sales the soy operations were.

Question: Was the whole Chicago plant called the Soya Protein Division or was that just a part of the plant?

They still do a big paint business as part of the SCM Corporation (Smith Corona Marchant). So Glidden tried to sell the business in about 1955. They contacted Central Soya he thinks and Central Soya turned it down. Willard Lighter was vice president of the Chemurgy Div. in the early 1950s. He pushed for commercialization of edible isolates. Glidden had a solvent plant and the peripheral works plus a feed mill down in Indianapolis, Indiana. They decided that they were going to build a big commercial isolate plant there. It was

designed and they began to put up the structural steel work in 1956-57. They had learned how to handle the sewage effluent, a key factor. All this time they were trying to sell the Chemurgy Division. Then they lowered their price and Central bought it in 1958, then took over in Aug. 1958.

Lighter was transferred to Cleveland [Ohio] as Executive vice president for Glidden. Richard Wesley was going to stay on with Central Soya. Wesley asked Meyer to stay on as Director of Research of the Central Soya Chemurgy Div. Central Soya scrapped the Indianapolis plant and rebuilt from scratch. Ed invites me to call back. He still consults for Central Soya.

In fact, Central Soya pioneered the dehulled, so-called 50% soybean meal, which is now 49%. This made possible the feeding of poultry, since poultry can't stand the fiber in a 44% meal. This expanded the horizons of feeding soybean meal tremendously. They had also done some soy flour and enzyme modified soy proteins, a process still in use today.

Glidden's first large scale production of soy isolates began in 1958, not 1957. Moreover Central Soya did not give the \$1 million to Dale Johnson, but they did invest it in the plant. Waldo exaggerates a bit. They gave the \$1 million to the whole organization; they encouraged everyone to stay.

Percy Julian left because Glidden had not had a very profitable history in the fine chemical area, so they wanted to give it up. He left in 1953. The fine chemical group, became a central/simple organic laboratory. That lasted from 1953-58.

Central Soya bought Glidden in July 1958. In the early 1950s Glidden changed the name of its Soya Product Division to the Chemurgy Division. Central Soya did not have a chemurgy division.

In 1949 Central Soya closed out all their edible work and cleaned house. "I knew the guy who was responsible for helping to clean the house." They too had not done well in the edible field. E.B. Oberg was one of their early directors, he left Glidden in 1938 for Central Soya, then from there he went to Carnation; Ken Gunther was the last director. Address: 1701 N. Sayre Ave., Chicago, Illinois 60635. Phone: 312-637-0936.

1081. Kahn, E.J., Jr. 1985. Profiles (soybeans). The staffs of life. V. The future of the planet. *New Yorker* 61:50-56, 60-66, 68-85. March 11.

• **Summary:** This wide-ranging overview of the soybean, from earliest times to the present, is well written though a little patchy and scattered. Among the topics it discusses: Soybeans as a relief food. Ted Hymowitz, Benjamin Franklin, and tofu. The Shah of Iran switching to soybean oil. The attempt by the Hunt Brothers of Texas to corner the soybean market. The Nixon soybean shock. Soybeans in Brazil and Manchuria. The origin of the soybean in China and Japan. Soymilk and Dr. Harry Miller. The dissemination of the soybean to Europe and America. How the soybean

became popular in America; William Morse and the USDA. Henry Ford's work with soybeans and William Atkinson. Dwayne Andreas and ADM. "There is no question in my mind but that the soybean is the fundamental future of the planet," Dwayne Andreas says.

Also discusses amaranth, the winged bean, IBPGR, loss of genetic diversity, and water shortages. The article closes with a quotation from Monkombu Sambasivan Swaminathan, the director general of the International Rice Research Institute in the Philippines: "We live in this world as guests of green plants."

1082. Meyer, Edwin W. 1985. History of work with The Glidden Company (Interview). Conducted by William Shurtleff of Soyfoods Center, March 13. 3 p. transcript.

• **Summary:** A far-ranging interview on the history of The Glidden Company, this is a follow-up to the interview on March 8.

Ask Sid Circle for Burnett's nearby address.

Spencer Kellogg: One guy (Ed is trying to remember his name) worked for Central Soya for a while, first in sales then in quality control. ADM purchased Spencer Kellogg plants in Decatur and Central Soya purchased their Bellevue plant.

Procter & Gamble: Their work with soy isolates was out of their Buckeye Cotton Division, for processing cottonseed used in their shortening. They had a plant in Louisville, Kentucky, and they made some industrial protein. For a short while they used it in Spic & Span as a film former—but *not* before 1935, probably after 1943. In the late 1930s might have been doing something.

1937 vs. 1935 and the introduction of soy isolate. Why he choose 1938. 1. They want to forget the solvent extraction plant explosion disaster in Oct. 1935 in Chicago. 2. The material made in the soy protein plant was of poor quality. It was a full scale plant—not a pilot plant. The poor quality may have been related to poor desolventizing at the solvent extraction plant. The two plants were practically wall to wall. The soy protein plant was of commercial size and it was intended for commercial utilization by the paper and paint industry. But the process was not a viable one; the material produced was completely unsatisfactory. Ed is not sure if the soy protein was sold or not. Maybe not. Glidden started building the plant in 1934; it started operation just before the explosion, but it was not commercially viable.

The explosion caused by a hexane leak. The original solvent plant may not have had Anderson Expellers, only a European solvent extractor. Glidden definitely had an Expeller plant in Aug. 1936 on site where industrial protein plant had been.

Other protein pioneers: Borden had a soybean Expeller crushing plant in the late 1930s in Kankakee, Illinois, later sold it to Swift. It was not making modern soy protein products.

Moffat St.: Glidden's offices were on a small side street.

It split the Glidden Co in half. 1 city block from Laramie Ave. to LeClaire. They owned the property on both sides of the street. In the early 1940s they bought the street then in 1941 fenced it in for security with a navy contract.

Horsburg was the man's name, not Horsboro. Not sure if from Sherwin Williams.

Ed Wilhelm is key man to check with. He developed the first pilot plant for industrial isolates!! Before the first plant and the explosion. He goes way back.

Alpha Protein: Glidden was very careless in handling it as a registered trademark. The term later came to be used generically for isolated soy protein. Yet it was trademarked from the outset.

The food grade soy protein product was not "Soya Whip" but "Albusoy;" it later became known as Premium Albusoy.

Central Soya's term was "Soya Whip" when Ken Gunther was working on it at Central. Albusoy was a registered trademark coined by Al Levinson. Later when the Glidden company stopped making it and Gunther Products was in operation, Gunther used to make the product for them and put it in bags marked Albusoy. They sold it way into the 1950s or even 1960s. Central Soya developed a better product than Albusoy, digested with pepsin (operated in the isolecetric range so no need to neutralize). When Gunther left Central Soya in 1949 he got exclusive rights under license. He began to make this whipping agent. He had a license to the Central Soya patent. It came on in competition to Albusoy, which Glidden made until 1949 or 1950. They switched to a small spray drier for the production of the Albusoy, phasing out drum drying.

Yes! It was advertised in 1943. Made in small amounts. How much? Gunther was making the product after 1950. Starting when? Chinese egg albumin had been shut off to the egg industry.

Rohm & Haas was a big enzyme company; they made an enzyme named Rhozyme. Mulsoya was used as a sizing for silk and cotton fibers during weaving to give additional strength, then later it was washed off. Ed's brother, Carl, ran the pilot plant. He started in 1938, before Albusoy.

Sterols: Utilizing soy sterols for the production of hormonal material was started by Ferriholz, who worked for I.G. Farben Industries in Germany. It was discovered in late 1930s. Glidden picked it up soon. First published in the *Annalen der Chemie*. Also Herman or Henry Kraybill at Purdue worked on isolation of soy sterols. He was an agricultural chemist.

Perrin from National Foam Systems got some Glidden isolates and developed the fire extinguisher. Scrap leather was cheaper, but the soy protein isolate was in steady supply and a big volume. Cost was no longer a question with the government paying.

From collection points from the farming areas, it was transported by barge to the central elevator on the Calumet

Harbor. Had 2 or 3 river elevators. Central Soya got them after the sale—after 1958

Glidden's Central Organic Chemistry Research Labs. (COL). This group of technical people is much too big to be supported by the Chemurgy Div. What shall we do? All the researchers were biochemical/organic chemistry oriented. Let's make that our central organic lab to serve the rest of the divisions. This was the best research operation in the Glidden Co, both facilities and people. The FCG people joined with the Chemurgy research people joined to form one organization. From then on, Chemurgy now contracted with COL to do their research! Ed became assistant director. Dr Wayne Pol? (now in Chicago) became director of research. Sid Circle was a part of that.

Ask Ed Wilhelm when in 1958-59 the edible protein plant went into operation. It was constructed adjacent to the industrial protein plant, had a common wall. The whole chemurgy research group continued to work in the same location. All kept doing what they had before. No key people were lost. Sid and his group stayed, Rakosky stayed as head of the microbiology lab. The essential people stayed and made the move to Central Soya. The lecithin people (such as Paul Davis) stayed.

Central Soya's headquarters were then in Ft. Wayne, Indiana, in the old bank building; they are now in a new high rise. Central's offices were not out with its plants. When did they move their offices from Decatur, Indiana, into the city? Probably in the early days.

Who of top Central Soya management can I interview?

Promosoy: The alcohol process had been explored by A.K. Smith in Peoria [Illinois, at NRRC] but no one had ever commercialized it. Glidden or Central Soya was the first to do so. The alcohol process preserves all of the proteins; whey proteins are lost in the aqueous process, which causes disposal problems. Griffith Labs. had big problems with disposal. Also, you can recover and recycle the ethyl alcohol. The alcohol process gives a bland concentrate. Didn't have to be neutralized or spray dried. Just desolventized then ground. Griffith's product difference was promotion. Griffith had a bigger sales organization for selling their edible products than Central. They had been in this business of selling edible products for a long time. One early product was Pro-Max? Then later changed the name to GL-301. Now they have both products.

Lou Sair left slightly before the closing of Central. He was not there in 1949. He was not severed at the time of the closing. Sair lives in the Chicago area. Address: 1701 N. Sayre Ave., Chicago, Illinois 60635. Phone: 312-637-0936.

1083. Sair, Louis. 1985. History of Griffith Laboratories (Interview). Conducted by William Shurtleff of Soyfoods Center, March 16. 4 p. transcript.

• **Summary:** Griffith Laboratories was founded in 1918 by a salesman of baking supplies named Enoch L. Griffith.

The main first product was Aquatex, a gelatinized starch sold to the bakery trade. The company specialized in bakery supplies. The son of the founder, C.L. Griffith, is now age 92, and still active in the business.

Lou Sair was born in Canada in 1910. He graduated from the University of Manitoba [Canada] with BS and MS degrees in cereal chemistry, then earned a PhD degree from McGill University (McDonald College). After working at the National Research Council on a meat problem, then Ogilvie Flour Mills and the Corn Industries Research Foundation in Missouri (on starch and cereals), he went to work for Central Soya Co. in about 1944 and began his first research on soy.

After World War II started, egg albumin (egg white) was selling for \$5 a pound. In 1939 the Glidden Co.'s Soya Products Division had started making a whipping compound named Albusoy, then in 1944 Soybean Products Co. in Chicago had started selling a similar product named Soyco that was made elsewhere for them. The Regional Soybean Industrial Products Laboratory in Urbana, Illinois (after 1942 called the USDA Northern Regional Research Laboratory) in Peoria, Illinois, played a leading role in the research on whipping compounds. Sair recalls that Albusoy yielded a fairly coarse foam, so while at Central Soya he was assigned the job of coming up with a good whipping compound. He made isolated soy protein, then used a pepsin digestion to convert the isolate to a fat free compound that whipped nougats and candy very well. Used in cakes, it rose beautifully during baking, then collapsed, since it was not denatured by heat. This product, also called Soy Whip, was of excellent quality and in 1945 it was commercialized. During the 2 years that Sair was at Central Soya, no one thought that soy isolates might have a place in human foods or in the food supply, other than in frills such as whip toppings. No thought was given to using soy protein isolates in sausages, breakfast cereals, etc.

In 1946 Sair left Central Soya and Ken Gunther took over research on whipping compounds. Soy Whip continued to be a commercial product, sold to good candy accounts. Then in 1949 Dale McMillan, founder of Central Soya, decided that there was no future for vegetable proteins at Central Soya so he shut down the whole operation and licensed the rights to the whipping compound to Ken Gunther, who established his own company in 1949 in Galesburg, Illinois, and, with his brother, Robert, made this product (and others like it) for many years until A.E. Staley bought the company. The company didn't expand much and is still fairly small.

In 1950 Sair and Rathman (both from Central Soya) were issued a patent on an improved process for making a soy-based whipping agent. He thinks he got 2-3 patents at Central Soya on Soy Whip. Another author on one may have been Mr. Turner, a salesman.

In 1946 Sair went to work for Griffith Laboratories, where he worked in many areas. He got over 50 patents at

Griffith. He thinks he has more patents as a food chemist than anyone in USA. Griffith is involved in almost everything. But his mind kept going back to the work he did at Central. Griffith had a big business in binders for sausage products, so he began to wonder if they couldn't use a soy protein in sausages. Since Griffith was not a soybean crusher, nor a manufacturer of isolates (which have a very low yield and cause major waste disposal problems), he hit on a very simple idea called the 'isoelectric (water) wash process' (different from the alcohol extraction process) to make a soluble soy protein concentrate (as they named it). The yield was 70%. Sair got the first patent. He began working on development of such a product in about 1950. This was long before Sidney Circle began working on this at Glidden (note at Glidden; Circle's was insoluble with an alcohol wash). It has a sandy texture, a completely different product. Extracting the sugars from soy with alcohol denatures the protein, so it has no emulsifying properties. It is a filler with good nutritional properties. But it has little functional value.

The Griffith process started with defatted soy flour, purchased from the A.E. Staley Mfg. Co., which sold them several hundred million pounds over the years. The protein was extracted from the flour, the pH lowered to 4, the sugars washed out with water, the protein neutralized, and then the protein was spray dried. The Nitrogen Solubility Index of the protein was 70%. A pound of the concentrate would do about the same job in terms of binding power as an isolate but it was much less expensive.

They went to the USDA and, after a long process, got the first approval to use soy protein concentrate in sausage—at a fairly low level.

In 1956 Griffith Laboratories introduced America's first commercial food-grade soy protein concentrate. The demand was great for their small production. At that time Griffith was also manufacturing a lot of sodium caseinate. They couldn't supply the market for caseinate for some applications. So Sair went to Glidden and bought some isolate. Sair thinks they were the first company that bought any soy isolate with the intention of putting it into a food. But the taste was so terrible (it was high in sulfur from Glidden's paper coatings), that it almost ruined a few Griffith accounts. Griffith bought large quantities then gave it up because it was absolutely useless as food. Griffith was using the isolate before it was modified (ask Ed Meyer).

Years later Ralston Purina went to Griffith and asked to purchase a license on their concentrate. Griffith refused.

In the 1920s Griffith Labs got involved with manufacture of hydrolysates at their East Coast plant in Newark, New Jersey. Initially everything was made from wheat gluten. In about 1965 they began to hydrolyze soy. George Inglett was in charge, under Sair for 2-3 years doing research on hydrolysates; George is now at NRRC in Peoria, Illinois.

One of Griffith's most interesting stories is in textured

soy proteins. One of Sair's patents may even be before ADM's TVP. He made what was called a "structured protein." In 1976 it was named GSVP (Griffith Structured Vegetable Protein). It is made by using soy flour by a controlled extrusion process; they controlled the pressure along the length of the extruder and at the exit from the die to give a good structure. He thinks it is greatly superior to TVP.

Note: Talk with Ralph Sair at Griffith Labs. 1991. Oct. 15. Louis Sair passed away about 3 years ago. The next best man to talk with about the early history of Griffith Labs would be Irving Melcer. Address: 9100 S. Sacramento, Evergreen Park, Illinois 60642. Phone: 312-422-2033.

1084. *J. of the American Oil Chemists' Society*. 1985. Soy pioneer bows out, others grow bigger. 62(3):474, 476. March.

• **Summary:** The soybean crushing industry is undergoing major restructuring as A.E. Staley Manufacturing Co., a pioneer in soybean processing, leaves the business. On 2 Jan. 1985 Cargill finalized its purchase of six soybean processing facilities from Ralston Purina. At that time it probably passed ADM to become America's largest soybean crusher. The plants acquired by Cargill are in Bloomington, Illinois; Lafayette, Indiana; Iowa Falls, Iowa; Kansas City, Missouri; Louisville, Kentucky; and Raleigh, North Carolina. A 7th plant owned by Ralston Purina at Memphis, Tennessee, was not offered for sale, but was scheduled to be closed in February.

With this acquisition, Cargill now has 20 soybean crushing plants in the Midwest and Southeast. The location of each of Cargill's 14 other soybean crushing plants, with daily processing capacities ranging from 20,000 bushels to 120,000 bushels, are given.

Ten days later the A.E. Staley Manufacturing Co. announced it had sold its soybean crushing business to Illinois-based independent Soy Processors Co., owned by a general partnership of individuals associated with Archer Daniels Midland (ADM) and including ADM as a minority partner. With this, ADM probably recaptured its lead, but only by a slight edge.

In October Staley agreed to buy CFC Continental Inc., the nation's second largest supplier to the food service business. Ralston Purina, meanwhile, in October acquired ITT's Continental Baking Co.

Central Soya Co. has 9 soybean crushing plants, 7 of them in the USA at: Gibson City, Illinois; Decatur and Indianapolis, Indiana; Bellevue, Delphos, and Marion, Ohio; and Chattanooga, Tennessee. These 7 U.S. plants are said to have a total capacity of about 10,000 tons/day of soybeans. The 2 plants outside the U.S. are in Utrecht, The Netherlands, and Victory Soya Mills in Toronto, Ontario, Canada.

Ag Processing, a cooperative based in Omaha,

Nebraska, operates 6 soybean crushing plants in the USA at: Van Buren, Arkansas; Eagle Grove, Sergeant Bluff, and Sheldon, Iowa; Dawson, Minnesota; and St. Joseph, Missouri. Total crushing capacity is estimated at 11,000 tons/day of soybeans. Ag processing is now entering the edible oil refining business, constructing its first refinery adjacent to its soybean crushing plant at St. Joseph, Missouri. Expected to be completed in 1985, it is rated to have a refining capacity of 12 tank cars (720,000 pounds) of soybean oil per day.

Two poultry-related firms that are building oil refineries next to their soybean crushing plants are Perdue Inc. of Salisbury, Maryland, and Townsends of Millsboro, Delaware. Each refinery will have a capacity of 12 tank cars (720,000 pounds) of soybean oil per day.

According to the *Soya Bluebook*, the capacities of Perdue's two crushing plants are 700 tons/day at Salisbury, Maryland, and 600 tons/day at Cofield, North Carolina. Townsend's single crushing plant has a 1,200 tons/day capacity.

1085. Oberg, Elmer B. 1985. History of work with Central Soya and Glidden (Two interviews). Conducted by William Shurtleff of Soyfoods Center, March 16 and May 4. 3 p. transcript.

• **Summary:** Oberg worked for Glidden from 1937-39, for Central Soya from 1939-43 (at Decatur, Indiana, as director of research), then for Carnation from 1943 on. He started as director of research at Carnation, at Oconomowoc, Wisconsin, but did not do a lot of work with soy at Carnation. Products discussed include Melksoy and Soyaffluff (soy flours), soy lecithin, Protein-70 (perhaps the first non-commercial soy protein concentrate, later developed into a commercial product under the name Promosoy by Sidney Circle at Central Soya and under the name Promax by Lou Sair at Griffith Labs).

Oberg did lots of work on commercial lecithin products. When he arrived at Central Soya in Oct. 1939 the company was making no lecithin, but they were experimenting with separating it from soy oil. When he left Central Soya in 1943, only 4 years later, the company was producing about 20 million lb per year. It was a very exciting program and he was very involved. Glidden had some early lecithin patents, including granular lecithin. Then Central Soya came along and sort of pushed their way in. Now Central Soya has become very big in lecithin. Granular lecithin was not made at Central Soya while he was there. Central Soya's brand name was "Central's Lecithin." The product started slowly. They did some interesting bleaching and modification work. "For years we sold our lecithin through the Cleary Corp. in New Jersey. They were a broker. American Lecithin Co. was a competitor, and was ready to sue Central Soya. He thinks ADM sold through American Lecithin. Staley got into the business later.

Oberg did some interesting, historically important work

at Central Soya on Protein-70, which is now called a protein concentrate. “I really believe I was the first one who did the first one and made any of that product.” He is quite sure (but not positive) that Lou Sair got involved later. Oberg made the soy protein concentrate by leaching soy flakes at the isoelectric point to remove all the soluble solids. He thinks that he and Sair used the same process, but Sair carried on his research only after he went to Griffith Laboratories. Protein-70 did not become a commercial product while was employed by Central Soya. Today the product is named Response and it is Central Soya’s only soy protein product.

“Glidden was really struggling, and practically dead until World War II came along and shot the soy protein isolate group into the air. They struggled to make money on Alpha Protein and to get it into the paper trade.”

Glidden sold a lot of soy grits to the baking trade, and (in about 1937-39) lots of Expeller soybean meal to the pet food trade. It contained 6-7% soy oil and was not extruded or texturized. It was just ground coarsely and screened to get various particles for use in canned dog food. This was a good source of income. Most of it was sold to a dog food company in Iowa (Ask Ed Meyer, who is a wonderful guy, has a superb memory and historical sense, and is the nicest person to work with; he keeps a neat notebook).

Note: In early 1949 Central Soya shut down its research laboratory, of which Ken Gunther was head. The man who had the keys to the laboratory door went there at about 5:00 A.M., locked it up, and when the employees arrived, they couldn’t get in. Central Soya shut down the operation because they felt it wasn’t paying off. In retrospect, this turned out to be a very short-sighted viewpoint. Address: 11228 Village 11, Camarillo, California 93010, or Oberg Foods Co., 1201 Broadway, Suite 203, Quincy, Illinois 62301. Phone: 805-484-3542 or 217-224-8010.

**1086. Product Name:** Scrummi (Non-Dairy Soy Ice Cream) [Banana & Honey, or Apricot].

**Manufacturer’s Name:** Vegetarian Feasts.

**Manufacturer’s Address:** 21 Carnwath Rd., Fulham, London SW6, England.

**Date of Introduction:** 1985 March.

**Ingredients:** Incl. tofu, fruits.

**How Stored:** Frozen.

**New Product–Documentation:** Talk with Sonia Newhouse. 1988. March 13. Sonia developed this product for her daughter, who was allergic to dairy products. It debuted at the International Food Exhibition in London, this product received positive reviews mention in the London Evening Standard and at the show. She thinks it was one of the first tofu ice creams in England. But it was never commercialized because the ice cream equipment did not arrive before she sold the company. Her daughter, Suzanna Price, named the product (short for scrumptious) and her daughter owns the formula. Today she served us 5 flavors of her homemade

tofu ice cream (pineapple, banana, raspberry, apricot, and chocolate) which are basically variations on Scrummi.

1087. *Grocer (The) (England)*. 1985. Soya milk spearheads move into yogurt, ice cream. April 6. p. 23.

• **Summary:** Michael Cole, managing director of Soya Health Foods of Trafford Park, Manchester, reports that he is selling about £3 million worth of his new Sunrise soya milk each year, and producing 46,000 gallons a week in half-liter aseptic Tetra Pak cartons. Major grocery chains have shown great interest in the product. Most competing soya milks are imported to England. Cole imports only his soya beans—from Canada. His company’s biggest competitor is Granose, which is selling through Safeway and other outlets.

Cole presently has to feed his okara, a by-product of soymilk production, to pigs. “But in the next few weeks we will be installing a vegetarian sausage and burger plant which will take care of that.”

Cole is a former health food shop owner who has all been involved in the marketing and manufacturing side of the trade, not only in England but also in India and America.

A large photo shows Cole standing next to stacked cartons of his Sunrise Soya Milk. The caption reads: “Soya yogurt possible—Michael Cole.”

Note: This was the article that led to the founding of Genice in Wales. Ray Pierce, who was with Classic Ices in Wales at the time read the article, learned that Michael Cole of Soya Health Foods Ltd. was planning to make a soy ice cream, then contacted Cole and offered to work with him in developing the product. It became Classic Ice’s first non-dairy ice cream. Seeing its potential, Ray and Irene Barclay left Classic Ices and started Genice. Address: Manchester, England.

1088. Meyer, Edwin W. 1985. Details on work with The Glidden Company (Interview). Conducted by William Shurtleff of Soyfoods Center, April 8. 4 p. transcript.

• **Summary:** Discusses: ADM’s solvent extraction plant in Chicago, Norm Witte, Central Soya’s Miracle Meal (the world’s first dehulled soybean meal made with a desolventizer-toaster; launched in 1952, it revolutionized the poultry industry), Central Soya’s first desolventizer-toaster started operation in Decatur in May 1950, Central Soya’s soy protein concentrate plants, Robert Boyer and Frank Calvert, Norman F. Kruse [pronounced Cruze], Endre F. Sipos. Elmer B. Oberg.

Say Calumet Harbor, not Calumet River; Ed thinks they acquired the 2 country elevators on the rivers but may have added on something. Ed Wilhelm might know.

Promine was used mostly by a large sausage manufacturer in Detroit, Michigan, for its functional properties. It was looked at but never used by John Morrell & Co., Armour, Swift, or Kraft—which had an all-meat image and mentality; “they never touched it.

Glidden sold Morrell a lot of soybean grits for dog food, for years during the 1930s; Morrell had a dog food company in Iowa, which made a popular canned product.

Ed had to make a rapid exodus from the Glidden Co. on Laramie after ADM bought it. They wanted to get in quickly; he left some important documents behind.

ADM did sell their lecithin through the American Lecithin Co. in the early days, just like Glidden. Ask Joseph Eichberg about the exact nature of the agreement.

Ed wouldn't say that Glidden soy operations Chicago was struggling, but their profits were not up to Glidden's expectations so they were considered a weak division. World War II helped a lot financially, especially since the industrial protein was requisitioned by the U.S. Navy through NFS. Toward the end of the war Glidden was supplying soy flour for the relief programs to the liberated areas, especially Italy.

Oberg is too gracious to say that Central Soya bought Glidden largely for its research team. The main reason was the price was cheap; the whole works for \$14 million, including all the elevators. Central got a great deal. Some years later they sold the Calumet Harbor elevators to Cargill for \$8 million. At that time Central Soya had only a small development group under Sipos, who is still with them. He reported to Norm Kruse, starting in 1953. True, they basically had no research team. It was of equal importance to many others.

**Steroids:** After 1953 they had a major contract with Charles Pfizer Co. to process steroids and to sell them an intermediate for making corticoid steroids / hormones. That was the main business. They also had a little business with Charles Strauss in Montreal, Canada. "After 1953 we toll processed for Pfizer alone (that means for a given sum you process material for a certain party) so we remained in the steroids business."

Ed was an Abbott–Glidden–Upjohn fellow at Northwestern University. Abbott Labs and Upjohn were very interested in Glidden's work; they were involved in an informal joint research operation. General Mills got into making soy sterols at their Kankakee plant. Glidden put them into the business in a way. Upjohn was buying sterols from General Mills for many years. Upjohn is still using soybeans for their corticoid hormones. General Mills sold that plant to Henkel A.G., a German company.

The forerunner of Promosoy (Central Soya's soy protein concentrate) was Protein 70 (also called Pro-70), developed by E.B. Oberg. The pilot plant was built in 1959 and the full commercial plant later at the Gibson City plant. Pro-70 was developed at Glidden by Sidney Circle. He started working on the concentrate after the soy protein isolate, in about 1953-54. Pro-70 was not commercialized until after Central Soya bought Glidden's Chemurgy Div. in 1958. It was commercialized under the name Pro-70. The term Promosoy was introduced in about 1960 [sic, 1962] with the Gibson City plant. Both were exactly the same product—a

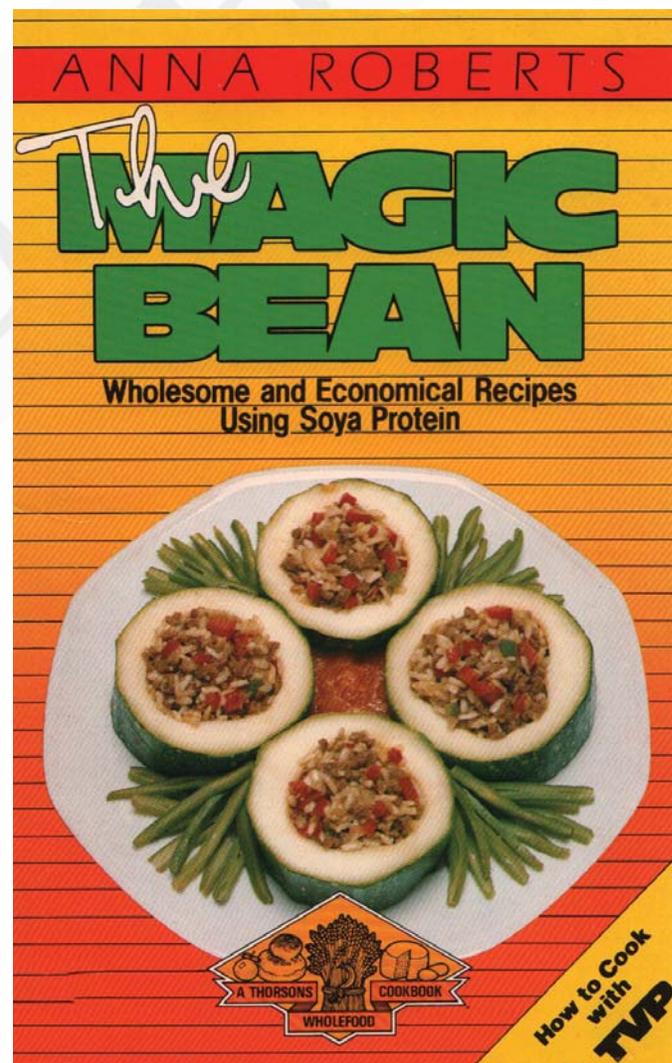
soy protein concentrated. Response, their textured soy protein concentrate, was developed later under Ed Meyer's supervision.

The first formula for Rich Freeze was developed by Jim Liggett in about 1963-64; Ed was director of research at the time. It was developed partly for the Japanese market. "We [Central Soya] had an affiliate, Dai Nippon pharmaceutical, which was selling our granular phosphatides in Japan. Dai Nippon also had a few food ingredients, principally plant gums. They thought they might sell Rich Freeze, but they bombed out" [failed].

The Cone and Brown patent which was the basis for Alpha Protein. Address: 1701 N. Sayre Ave., Chicago, Illinois 60635. Phone: 312-637-0936.

1089. Roberts, Anna. 1985. *The magic bean: Wholesome and economical recipes using soya protein*. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 128 p. Illust. by Clive Birch. Index. April. 20 cm.

• **Summary:** This is a lacto-ovo-vegetarian cookbook



about how to cook with TVP. It uses milk and free-range eggs. Dedicated to her husband, Peter, and to their family. Contents: Foreword by Peter Roberts: The requirements of life (protein and amino acids), protein quality, where protein comes from, the history of soya, the processing of soya, the texturing of soya, why replace meat, how do soya proteins compare for food values?, is it as good for you as meat, other important factors. Introduction. 1. Snacks and starters. 2. Soups. 3. Main meals.

Page 12 notes that 74% of the world's protein comes from plants and only 24% comes from animals. The FAO statistics are as follows: Plant protein—wheat 31%, soya 15%, rice 14%, maize / corn 14%, other 10%. Animal protein—meat 13%, fish 7%, milk and eggs 4%.

When people eat protein, regardless of whether the source is plants or animals, the body breaks it all down [catabolism] into basic building blocks, called amino acids, then makes the proteins that it needs [anabolism] from these building blocks.

Note: This book was also published by Thorsens in 1985 under another title: "The magic bean: Wholesome, delicious and economical recipes using natural soya protein." Address: Petersfield, Hampshire, England.

1090. Shurtleff, William; Aoyagi, Akiko. 1985. Soyfoods industry and market: Directory and databook 1985. 5th ed. Lafayette, California: Soyfoods Center. 220 p. Index. April. 28 cm. Updated every 1-3 years with a bibliographic supplement. [360 ref]

• **Summary:** Contents: 1. Introduction. 2. Directory of soyfoods manufacturers. 3. Directory of soyfoods support industry: Goods & services. 4. The many types of soyfoods. 5. Historical: Historically most important books and serials, earliest references to individual soyfoods. 6. Year in review. 7. Soyfoods industry and market in the U.S. 8. Tofu industry and market in the U.S. and Canada. 9. Soymilk industry and market: Worldwide and in the U.S. 10. Tempeh industry and market in the U.S. 11. Soy sauce industry and market in the U.S. and Japan. 12. Miso industry and market in the U.S. and Japan. 13. Soynut industry and market in the U.S. 14. Natto industry and market in Japan. 15. Statistics on fermented soyfoods in East Asia. 16. Soyfoods in restaurants, delis & cafeterias. 17. Soybean crushing industry in the U.S. 18. Soy oil industry and market in the U.S. 19. Soy flour and cereal-soy blends industry and market worldwide. 20. Modern soy protein products industry and market in the U.S. 21. Soyfoods terminology and standards. 22. Names of soyfoods in major foreign languages (incl. Chinese / pinyin; Hoisin sauce = haixian jiang). 23. Soybean production worldwide and country-by-country. 24. Key institutions working with soyfoods worldwide. 25. Measures, weights, and equivalents. 26. About the Soyfoods Center & soyfoods consulting services. 27. Bibliography.

In February 1977 a Gallup poll in America showed a

remarkable shift in the public's awareness of and attitudes toward soyfoods. The sampling of 1,543 adults across the nation found that: 33% believe that soybeans will be the most important source of protein in the future—ahead of fish at 24% and meat at 21%. 55% believe that "soy products have a nutritional value equal or superior to that of meat." 54% reported that they "had eaten foods containing soy protein as a prime ingredient within the past 12 months." Younger age groups living in large cities and those with college or university educations had the most favorable attitudes toward soy protein, indicating that support for soyfoods is likely to grow in the future. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

1091. Oberg, E.B. 1985. Re: Activities at The Glidden Co. and Central Soya Co. 1937-1943. Letter to William Shurtleff at Soyfoods Center, May 4. 4 p. Typed, with signature. Plus 2-page follow-up letter on July 30.

• **Summary:** Dr. Oberg was with Glidden from 1937-39, with Central Soya 1939-43, then director of research at Carnation from 1943 on; he did not work much with soy at Carnation. During his 2 years at Glidden he worked primarily on industrial uses of soy protein, and obtained several patents in this field. His notebook from Glidden reads: "Alpha Protein prepared in June 1939 was 117 tons, or for 22 days it was 5 tons/day. Cost was 10 cents a pound. Half of the cost was the soybeans, \$22.50/ton."

Concerning lecithin at Glidden: "My notes show that on 11 July 1939 Glidden was making 2,000 to 2,500 lb/day of lecithin. Much of it went to Texas Co., namely about 50,000 lb/month for \$0.30-\$0.33/lb. This lecithin was used as an additive for their 'Insulated' lubricating oil. 0.1% was used in oil to prevent or reduce carbon formation in auto engines. Emil Buelens was plant production manager for Glidden's lecithin program. He now lives at 1022 Marion St., Oak Park, Illinois 60302 (Phone: 312-383-4755). He played a major role in lecithin production for Glidden and also later at Central Soya."

"I know that as of Oct. 1939 Central Soya [C.S.] was not selling any lecithin but was experimenting with its separation from oil. When I left C.S. in 1943 their production rate was about 2,000,000 lb/year. In Dec. 1939 we shipped our first lecithin, 5 barrels (2,300 lb) to W.A. Cleary Corp. The second 5 drums went to Cleary on 2 Jan. 1940. Oberg was involved in this exciting lecithin program, but Norman F. Kruse (now deceased) was the driving force behind the program. He was a graduate of Iowa State University in chemical engineering. Hydrogen peroxide was used for the single bleach plus benzoyl peroxide (purchased from the Lucidol Corp. of Buffalo, New York) for the double bleach."

Mr. Oberg was very much involved in working with Central Soya's "legal beagles," the Schley and Trask firm of Indianapolis, Indiana, in trying to obtain the Kruse patent but they were turned down repeatedly. The final "turn

down” came with a note that said “and this is final.” “That’s when Mr. George Schley and I went to the patent office in Washington, DC, and with our samples convinced the patent examiner that our process was indeed different from that of anyone else. It was an important victory for Central Soya.” This development put Central Soya in competition with American Lecithin Co. which had long monopolized that business; they were operating under the Sorensen and Beal (ADM) patent. Mr. Kruse’s right hand man was C.I. “Scotty” Finlayson.

Note: Talk with Ed Meyer of Central Soya. 1993. April 7. Ed joined Central Soya on 1 Sept. 1958, so he was not there during the period 1939-43. But he thinks that during this period Central Soya made what is known in the trade as “crude lecithin.” It is not refined but it was usually bleached. It could be used for industrial applications (such as a pigment dispersant in paints) or food applications.

Oberg co-authored two patents at Central Soya, both pertaining to the isolation of sterols from soybean oil. He also co-authored some at the Glidden Co. (1937-39), but Dr. Percy L. Julian’s name was first on each.

During the period 1934-1943 Central Soya made quite an effort to get various companies to use its fat-free soy flour. Working with a large bakery in Fort Wayne, Indiana, they found they could replace only about 10% of the wheat flour in bread before getting reduced loaf volume. C.S. tried to get the confectionery trade to use its Mel-K-Soy soy flour in place of non-fat milk powder. The soy flour had a higher protein content and probably lower cost.

D.W. McMillen Sr. (“Mr. Mac”) was very interested in the possibility of using our fat-free flour in plastics as in phenolic or urea resins. We worked with plastic companies in Ohio and Michigan. On one occasion I went to the New York area, and especially to Brooklyn, and visited a number of moulding companies. Mr. Mac couldn’t believe it when I reported to him that my results were very negative.

“At one time Mr. Mac, Kruse and I visited Henry Ford’s soy processing plant at Dearborn, Michigan. Robert A. Boyer had a very extensive and interesting set-up for making soy fiber from soy protein. Once Mr. Mac gave a paper, which I wrote for him, on plastics, at a service club meeting in Fort Wayne. He and Henry Ford were both dreaming of a greater use of soy products in plastics.”

“Mr. Mac was very interested in the people in his company, down to the lowest man on the totem pole. He found time for personal contact with them, for he knew they were the key to the success of many projects. Mr. Mac was a great ‘pepper-upper.’ At sales meetings his frequent comment was ‘You have only your own record to beat,’ and also ‘Work is a tonic.’ Total laboratory personnel in Oct. 1942 was only twenty-two!”

“My first reference to Protein 70 (later called Concentrate in the industry) reads ‘Protein 70 prepared and taken to Masonite Corp. on 29 Jan. 1940.’ I have complete

records of that lab and pilot plant work, which continued into 1941. Protein 70 was also taken to companies like Celotex, Reilly Tar Chemical Co., and Central Paper Co. Central Soya never got into commercial production of Protein 70 while I was there” (i.e. before 1943).

In our lab preparations we used 100 gm. soybean flakes, 15 liters water, and 70 cc. of 25% sulfuric acid, plus 46 cc of 10% formalin. The mixture was stirred, allowed to stand overnight, the whey siphoned off, and the concentrate bagged off, pressed, dried and ground. 88% of the soluble carbohydrates were removed. In other preparations no formalin was added, and the product was neutralized with alkali. So the 70% protein product [soy protein concentrate] “that we made by leaching flakes at the isoelectric point was for industrial uses and not for edible uses.

“As of October 1942 we were processing about 12,000 bushels (360 tons) of soybeans per day in our solvent plant and the same amount in our expellers.”

A good contact who worked on soya flour at Central Soya was Weldon “Solly” Soldner. “He was at our lab when I arrived in 1939 and he stayed long after I left in 1943. While there, he handled the soy flour and grit research. I think he is retired and living in Decatur, Indiana.”

“Although we did a fair amount of work with various enzymes while I was at Central Soya, I don’t believe any of it pertained to the use of enzymes to hydrolyze soy protein so as to make it a better ‘whipping’ compound like egg white.” Address: 11228 Village 11, Camarillo, California 93010; Also: Quincy, Illinois. Phone: 805-484-3542 or 217-224-8010.

**1092. Product Name:** Protoveg Savoury Bakes (Meatless Meatloaves) [Chicken Style, Beefy Style, Pork and Pepper Style].

**Manufacturer’s Name:** Direct Foods Ltd.

**Manufacturer’s Address:** Petersfield, Hampshire, England.

**Date of Introduction:** 1985 May.

**Wt/Vol., Packaging, Price:** Foil trays. Retail for £1.25.

**New Product–Documentation:** Food Report (Lehmann). 1985. May. The products require only the addition of water and can be baked in their own foil trays for just 20 minutes.

**1093. Product Name:** [Sojal Soya Milk (Natural, Banana, Strawberry, or Carob)].

**Foreign Name:** Sojal Soja Melk.

**Manufacturer’s Name:** Pharma Food (Distributor). Made [actually marketed] in England by Haldane Foods.

**Manufacturer’s Address:** Netherlands.

**Date of Introduction:** 1985 May.

**Wt/Vol., Packaging, Price:** Liter cartons. Natural is Hfl. 3.10 retail. Flavored is Hfl. 3.30.

**New Product–Documentation:** Food Report (Lehmann). 1985. May. 1986. June. Two varieties of Sojal soya milk are newly available: one contains 9% soy flour and honey, the

other has no added sweetener. See also the Sojal soymilk imported to England by Haldane from a company in France; it is made from powdered Brazilian soybeans.

1094. STS–Soya Technology Systems. 1985. Containers for soymilk (Leaflet). 11 Dhoby Ghaut #11-06, Cathay Building, Singapore 0922. 2 panels each side. Each panel: 30 x 21 cm. Also published in Chinese. [Eng; Chi]

• **Summary:** Color photos show carton containers (Tetra Brik, Combibloc, Pure Pak), plastic bottles (incl. Remy/Serac Aseptic UHT), glass bottles, cans, and plastic bags (Prepac/UHT, Doypack/Toyo Seikan standing pouch/retort sterilized). Brands include Granose, Marigold, GranoVita, Soy Moo, Magnolia, No Cow, Vegemil, Vitamilk, Amofood, Milho Verde, PureHarvest, Yeo's.

Note 1. Milho Verde is made by Pennone–Produtos Alimenticios Ltda., Av. Adolfo Pinheiro 1247, Sao Paulo, Brazil. Their factory is at another address.

Prepac is at 62 Rue Pasteur, 94800 Villejuif (a commune in the southern suburbs of Paris), France. Address: Singapore.

1095. Archer Daniels Midland Co. 1985. “Tofutti” (TV ad slicks). ADM, Decatur, Illinois. 1 p.

• **Summary:** See next page. Shows 12 color frames from the ADM TV commercial promoting Tofutti, shown on “Meet the Press” (NBC) and “This Week with David Brinkley” (ABC). Address: Decatur, Illinois.

1096. **Product Name:** Sojal Light Dairy Free Frozen Dessert [Strawberry, Carob, Hazelnut, or Vanilla].

**Manufacturer's Name:** Regular Tofu Company Ltd. Made in Leicester, England, by Rossa Ltd.

**Manufacturer's Address:** 16 The Halcroft, Syston, Leicester, England LE7 8LD. Phone: 0533 605665.

**Date of Introduction:** 1985 June.

**Ingredients:** Carob: Water, dehulled soya beans, honey, vegetable oil, carob, soya lecithin, guar gum.

**Wt/Vol., Packaging, Price:** 500 ml.

**How Stored:** Frozen.

**New Product–Documentation:** See page after next. Ad in *The Vegetarian*. 1985. July/Aug. p. 23. “Sojal, So Good! New dairy-free frozen desserts, by Hera.” These new soy ice creams, made from soya milk, come in light vanilla, strawberry, carob, and hazelnut flavors.

Soya Bluebook. 1986. p. 104. Address: Hayhill Industrial Estate, Unit 25, Barrow Upon Soar, Leicester, Leicestershire, England. Letter from John Holt. 1987. Aug. 19. “The product was launched with these labels in June 1985. It was sold prior to that under the name of Soyboy Soy Ices.” Leaflet. 1987. “Sojal, So Good! New dairy-free frozen desserts by Hera.” Shows all 4 Labels in color. “Only 100 calories per 100 ml. Cholesterol free. No animal ingredients. No added sweeteners except honey. Contains

polyunsaturated vegetable oil.” On the rear is a handwritten letter from John Holt, with signature.

1097. Vansickle, Janice. 1985. Processing plant sold to U.S. firm. *Windsor Star (Essex County, Ontario, Canada)*. July 20. p. A3.

• **Summary:** The sale of Maple Leaf Monarch, a soybean crushing plant on Maplewood Drive in Windsor, “was to have been completed Friday” [July 19] to Archer Daniels Midland Co. of Decatur, Illinois, for an undisclosed amount. The plant employs 90 unionized employees. A local union leader said at least 11 non-unionized employees were dismissed, but Dick Burket, vice-president of ADM, said his company is not planning any changes in either management or operations. Address: *Star agriculture reporter*.

1098. **Product Name:** Granose Soya Milk [Sugar Free, Plain/Dairylike, Organic; Coconut, Chocolate, Strawberry, Banana, Carob].

**Manufacturer's Name:** Granose Foods Ltd. (Marketer). Made in West Germany by DE-VAU-GE Gesundheitswerk GmbH.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

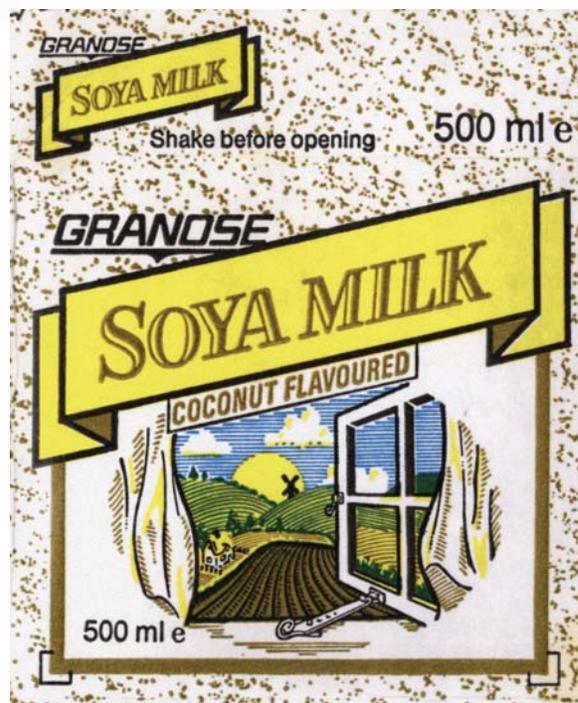
**Date of Introduction:** 1985 August.

**Ingredients:** Coconut: Water, dehulled soya beans, raw cane-sugar, coconut powder, sea-salt.

**Wt/Vol., Packaging, Price:** 500 ml Tetra Brik Aseptic carton.

**How Stored:** Shelf stable; refrigerate after opening.

**Nutrition:** Per 100 ml: 70 calories. Fat fractions: polyunsaturates 39%, saturates 15%.



# "Tofutti"

Today, America is moving towards more nutritious foods and ingredients from ADM are helping to lead the way.



Research.



At the Archer Daniels Midland Company, it's an on-going process.



Working with corn, soybeans and other abundant crops, ADM scientists are busy developing ingredients for the foods we eat.



Ingredients that have made a variety of new products possible.



One example is Tofutti brand frozen dessert, developed and produced by Tofu Time.



Besides its great taste, Tofutti is cholesterol-free and lactose-free.



Qualities that are important to today's health-conscious consumers.



At ADM, we produce a number of popular food ingredients.



Including the principal ones in Tofutti: protein from soybeans and sweeteners and oil from corn.



So you see, before you can buy your groceries, the people who feed the world have to buy theirs.



And many of them bring their shopping lists here:



The Archer Daniels Midland Company.

See this and other ADM commercials each Sunday on **"Meet the Press"** (NBC) and **"This Week with David Brinkley"** (ABC).



ARCHER DANIELS MIDLAND COMPANY

# Sojal, So Good!

## NEW DAIRY-FREE FROZEN DESSERTS



BY **hera**



- ★ ONLY 100 CALORIES PER 100mls
  - ★ CHOLESTEROL FREE
  - ★ NO ANIMAL INGREDIENTS
  - ★ NO ADDED SWEETENERS EXCEPT HONEY
  - ★ CONTAINS POLYUNSATURATED VEGETABLE OIL
- THE REGULAR TOFU CO. LTD..

**New Product–Documentation:** STS. 1985. Containers for Soymilk. Shows color photo of 500 ml Tetra Brik carton. Orange and green on white. “100% Vegetable. Rich in protein. High in polyunsaturates.” Use by 7/84.

Spot in Food Trade Review. 1986. June. Granose Foods Ltd. (UK) launched new strawberry soya milk in 500 ml Tetra Paks. Ad in The Vegan. 1986. Summer. p. 17. “Why does Granose Soya Milk flow so smoothly? Well, its the natural choice.” Shown in 500 ml and 1,000 ml. Sugar free or sweetened with raw cane sugar.

Photo and Spot in The Vegetarian (UK). 1986. Sept/Oct. “Granose strawberry flavoured soya milk. Absolutely delectable—pure strawberry essence, no artificial flavour or colour so its not bright pink!”

Label. 1987. Gold, yellow, brown, blue, and green. Illustration of sunrise seen through a farmhouse window.

Soyfoods (ESFA). Granose Foods Ltd. has launched a strawberry soya milk, made from soya beans, pure strawberry essence, raw cane sugar, sea salt, and natural vegetable flavoring. Presented in 500 ml “Tetra Paks,” it has a 6-month shelf life unopened.

Ad in The Vegan. 1988. Summer. p. 16. “Granose Soya Milk [Banana flavoured with no added sugar].”

1099. Leneman, Leah. 1985. Tomorrow’s world [soyfoods]. *Vegetarian (The) (England)*. July/Aug. p. 21-24.

• **Summary:** There are now 8-9 brands of soya milk sold in Britain. “It is a shame that most people’s introduction to tofu is in the form of Morinaga silken tofu which... is now found in most health food stores. Silken tofu is pleasant and nutritious, but is much softer than regular tofu and is therefore much less versatile. Following recipes meant for firm tofu with it can be frustrating.

“Granose is the first big-name health food manufacturer to feature a line of tofu-based products (imported from Denmark). Two of the three tinned convenience meals seem to me less than ideal. The tofu adds nothing special to either the Tofu and Tomato Sauce nor to the Tofu in a Savoury Bean Sauce; they might just as well have used tvp. However, the Chinese-Style Tofu is really excellent, with a nice balance of tastes and textures, including the cubes of tofu—just about the nicest tinned convenience meal around.

“The first national distributor of tofu (to the best of my knowledge) was *The Regular Tofu Company*... Like all other national distributors, their tofu is vacuum-packed, which considerably lengthens its shelf-life... *Paul’s Tofu* (The Old Brewery, Wheathampstead House, Wheathampstead, St. Albans, Herts.) produces another vacuum-packed firm tofu, which is available in London and South-East England...

“*Bean Machine* (Station Road, Crymych, Dyfed) produces not only tofu but also a range of ‘soysage’ foods made from okara... They also make ‘Soyannaize,’ a dairy-free dressing. *Duchesse All-Natural Tofu Dressing and Dip* (made by St. Giles Foods Ltd, St. Giles House, Sandhurst

Road, Sidcup, Kent DA15 7HL) is another mayonnaise-type product...”

She is writing *The International Tofu Cookery Book* for Routledge & Kegan Paul. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

1100. *Natural Foods Merchandiser*. 1985. New products, changing diets propel soyfood sales. Aug. p. 1, 39-40, 42-44.

• **Summary:** “The soyfoods revolution is being fueled by several powerful trends... Many consumers are attracted to soyfoods because they are an excellent no-cholesterol ‘replacement’ for meat and dairy products. Soyfoods are also growing with the rising tide of macrobiotics, which promotes the use of various soy products. And there are now enough soyfoods on the market to create synergy within the category: consumers buying soymilk try tofu, and go from tofu to tempeh.

“Tofu is by far the best-selling product in the soyfoods category, according to figures provided by the Soyfoods Association [and Soyfoods Center]. An estimated \$60 million worth of tofu is produced and sold in the U.S. annually, while frozen tofu desserts, entrees, and prepared products account for approximately \$25 million. Soymilk sales have jumped from near zero a few years ago to \$10 million today, while tempeh is an emerging growth category at 5 million in yearly sales.” All of the retailers interviewed by NFM indicated that the soymilk category is experiencing major growth. Most of the growth has been in six-ounce aseptic individual serving packages supplied by such companies as Westbrae, Ah Soy, Vitasoy and Eden. Health Valley’s Soy Moo has recently been repackaged in a 8.45-ounce package.

“Tempehworks produces approximately 7,000 pounds of tempeh a week during peak months, including that used in its processed tempeh products, such as Fakin’ Bacon, New York Style Strami and Kansas City Barbecue.”

Includes “A directory [sic, glossary] of soyfoods terminology” that defines tofu, tempeh, soybean, miso, soymilk, shoyu/tamari, TVP or TSP, soy protein isolate, defatted soy flour, and “secondary” soyfoods products.

1101. Franklin, John. 1985. History of Honeymead Products Co. (Interview). *SoyaScan Notes*. Sept. 10. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Honeymead is an agricultural cooperative that crushes soybeans. Honeymead’s parent company is Harvest States Cooperatives. John Franklin is the director of public relations there. Honeymead was formerly part of GTA (the Farmers Union Grain Terminal Association), which had 2 plants—Mankato (which crushes soybeans and makes edible products) and Minnesota Linseed Oil (which also recently started to crush some sunflower seeds). An old-timer at Mankato is Stan Eichten.

Honeymead was started by a group of businessmen

in Mankato. Then it was sold to the Andreas family; Dwayne and Lowell Andreas ran it. They sold it to GTA (also a co-op) in about 1960. GTA purchased a margarine company in Kansas City, then purchased 2 margarine plants—Drew in Kansas City and a salad dressing plant named Wholesome Foods. They may have owned or bought a refinery also.

In June 1983 GTA merged with North Pacific Grain Growers (NPGG) to form Harvest States Cooperatives. NPGG, headquartered in Portland, Oregon, grew mostly white wheat. GTA was looking for an outlet on the Pacific Rim.

Honeymead now makes industrial soy oil mainly for adhesives/coatings, paints & varnishes, pesticides, and soaps.

Note: This is the earliest document seen (March 2008) that mentions “Harvest States Cooperatives” in connection with soybeans—and with Honeymead. Address: 720 Minneopa Rd., P.O. Box 3247, Mankato, Minnesota 56002. Phone: 507-625-7911.

1102. Archer Daniels Midland Co. 1985. Annual report 1985: We bring home America’s harvest. P.O. Box 1470, Decatur, IL 62525. 16 p.

• **Summary:** Part I describes ADM’s daily work. “ADM. Where the people who feed the world buy their groceries.” Pages 8-9 note: “We unlock the protein inside the soybean.” Contains color photos of many soy products including Protoveg Vegetable Goulash, and Betty Crocker Hamburger Helper (p. 1), Similac (p. 7), ProSobee, Rich’s Coffee Rich, Betty Crocker Bac\*O’s, and Protoveg Sizzles (p. 9), Tofutti (p. 15).

Part II, an insert in the portfolio, is the annual report financial data (34 pages). Net sales and operating income: \$4,738,767,000. Net earnings: \$163,908,000. Total current assets: \$1,367,826,000. Total current liabilities: \$328,822,000. Address: Decatur, Illinois.

1103. Dunn, John R. 1985. Update on U.S. cooperatives and soybeans (Interview). Conducted by William Shurtleff of Soyfoods Center, Oct. 21. 2 p. typescript. [1 ref]

• **Summary:** Estimated capacities (in tons/day) of the major U.S. soybean crushers (Sept. 1985). Mr. Dunn has compiled the following statistics from the trade literature: 1. ADM

### Estimated Capacities of Major Soybean Crushers. Sept. 1985.

<u>Company Name</u>	<u>Estimated Capacity (tons/day)</u>	<u>Ownership</u>
1. Archer Daniels Midland	33,500	Public
2. Cargill, Inc.	26,000	Private
3. Bunge	12,700	
4. Ag Processing Inc.	10,500	Co-op
5. Central Soya	9,800	Private
6. Quincy Soybean	4,600	Public?
7. Continental Grain	4,100	?
8. Ralston Purina	3,000	Public
9. Harvest States (Mankato)	2,500	Co-op

33,000. Ownership: Public. 2. Cargill, Inc. 26,000. Private. 3. Bunge 12,700. Private. Ag Processing Inc. 10,500. Co-op. 5. Central Soya 9,800. Private. 6. Quincy Soybean 4,600. Public? 7. Continental Grain. 4,100. Private? 8. Ralston Purina. 3,000. Public. 9. Harvest States Cooperatives (Mankato). 2,500. Co-op.

In August 1983 Land O’Lakes, Farmland Industries, and Boone Valley Processing Assoc. put all their plants into an interregional cooperative named Ag Processing Inc., headquartered in Omaha, Nebraska. It began operation in August 1983. Boone Valley no longer exists; its feed mill was taken over by Farmland. Land O’Lakes and Farmland still exist—they just spun their soybean processing assets into Ag Processing, of which they are owners. In Sept. 1983 [or June 1982] Ag Processing Inc. closed its plant in Fort Dodge, Iowa.

“Sept. 1983. Ag. Processing Inc. closed its Fort Dodge, Iowa plant.

Oct. 1984. Ralston Purina sold 6 of its 7 plants to Cargill. It kept its large plant in Memphis, Tennessee. That was part of a change in Ralston’s strategy to exit some of the commodities/ingredients and concentrate more on consumer products.

“Dec. 1984. A.E. Staley sold all its 6 plants to a wholly-owned subsidiary of ADM.

“1984. Riceland Foods sold its Helena Ark plant on the Mississippi to Quincy Soybean, based in Quincy, Illinois.

“1984. Coops. Goldkist had 3 plants. It sold 2 to Bunge. Marks (Mississippi, but not on the Miss. River) and Decatur (Alabama). Kept the one in Valdosta, Georgia.

“March 1984. Cargill closed its small (about 300 tons/

day capacity) plant in Washington, Iowa

“The big picture. Last 4 years. Two main things are:

1. Consolidation of crushing activities in the Western Corn Belt to rationalize their capacity, including some vertical integration. Ag Processing Inc. has just began processing a salad oil called Ag Soy (spell?) in their St. Joseph, Missouri plant. Consumer or industrial product? 2. Contraction out of export based soybean crushing activities. Never had plants overseas. Goldkist’s two plants and Riceland’s one river plant were all oriented toward export. But Ag Processing Inc. is still doing a lot of exporting. Others now better placed to serve the domestic market. Plants that were sold were the ones that depended on an active export market.

“Ag Processing Inc. is now the biggest cooperative SB crusher.”

A ranking of the cooperative soybean processors is as follows: 1. Ag Processing Inc. 2. Harvest States (including Honeymead). 3. Gold Kist. 4. Riceland. 5. Agri-Industries. Address: USDA Agricultural Cooperative Service (ACS), Washington, DC 20250. Phone: 202-475-4929.

1104. Anderson, Ronald L. 1985. Re: History of Continental Grain Company’s involvement with soybeans. Letter to William Shurtleff at Soyfoods Center, Nov. 11. 10 p. Typed, with signature on letterhead.

• **Summary:** The following is excerpted from a 1985 Continental Grain Strategic Planning Study: History–World Processing Division: 1946–Allied Mills–Bought Taylorville, Illinois soybean crushing plant (100 tonnes/day capacity). Note: Allied Mills owned a soybean crushing plant at Taylorville, Alabama, by Aug. 1935.

1960–Allied Mills–Guntersville, Alabama, crushing plant start-up (500 TPD).

1965–Continental acquires 51% of Allied Mills, a major feed producer [Wayne Feeds] as well as a producer of fresh poultry.

1973–Acquired Allied Mills’ plant in Cameron, South Carolina (300 TPD) and expanded it to 800 TPD.

1974–Allied Mills becomes a wholly owned subsidiary of Continental Grain. Continental’s new Processing Division is created by consolidating the above three soybean plants from Allied Mills. That year Continental expanded its charter to include participation in international processing and oilseed product trading. Thus the company first expanded outside the USA. 1975–Acquired a specialty plant in Culbertson, Montana, to crush safflower and sunflower seeds (no soy; Expanded to 400 TPD in 1983). 1975–77–Constructed a soybean crushing plant at Liverpool (1,500 TPD; expanded to 2,200 TPD in 1982).

1976–Acquired a soybean and cottonseed crushing and oil refining plant at Capsa, Paraguay (600 TPD). 1977–79–Constructed a soybean crushing plant at Maringa, Brazil (2,200 TPD). 1979–Rebuilt a plant in Maurie, Australia, with a toll crush agreement with the Australian government, to

crush soybeans, sunflower, and safflower seeds (300 TPD).

1980–81–Built a plant to crush sunflower and soybeans at Chivilcoy, Argentina (800 TPD). 1981–Acquired 50% of ICIC plant at Ancona, Italy. It crushes 800 TPD of soybeans and 250 TPD of sunflower seeds, and also refines oil. 1983–Bought plant in Sydney, Australia (300 TPD).

1984–Sold plant at Taylorville, Illinois. 1985–Acquired soybean crushing plant at Venice, Italy (1,200 TPD). 1986–Sold Liverpool plant (2,000 TPD). 1987–Sold Cameron plant (1,000 TPD). 1987–Closed Oleaginosa tung nut plant in Argentina. 1988–Sold Culbertson plant (400 TPD). 1989–Plant to sell all South America and Australia plants and upgrade Italian plants. 1989–Formed joint venture marketing company [Conti-Quincy] with Quincy Soybean of Quincy, Illinois.

In 1975 Continental’s oilseed crushing capacity was 3,000 TPD or 1,100,000 tonnes/year. By 1985 this had increased roughly four-fold to 11,800 TPD or 4,300,000 tonnes/year.

A table lists all U.S. soybean crushers, the city and state of each of their plants, and the capacity of each. There were 78 plants with a total capacity of 121,025 TPD

America’s largest soybean crushers are ADM (18 plants, 32,900 TPD, 27.3% market share), Cargill (21 plants, 29,200 TPD, 24.2%), Bunge (8 plants, 14,600 TPD, 12.1%), Central Soya (8 plants, 12,000 TPD, 9.9%), Ag Processing (6 plants, 10,050 TPD, 8.3%), Quincy Soybean Co. (3 plants in Illinois and Arkansas, 5,700 TPD, 4.7%), and Others (12 plants, 16,270 TPD, 13.5%). Address: Senior Vice President and General Manager, Continental Grain Co., World Processing Div., 277 Park Ave., New York, NY 10172. Phone: 212-207-5100.

1105. Hashizume, Kazumoto; Ohara, Tadahiko; Ando, Yoko. 1985. [Identification of vegetable protein in animal protein by urea polyacrylamide gel electrophoresis]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 47. p. 167-72. Nov. [7 ref. Jap; eng]

• **Summary:** Figures show: (1) Disc electrofocusing of soybean, wheat and meat proteins in 7.5% polyacrylamide gels containing 8M urea. (2) Disc electrophoresis of soybean, wheat and meat proteins in 7.5% gels containing 8M urea at pH 8.9. (2) Effect of pH of polyacrylamide gels on electrophoretic patterns of soybean, wheat and meat proteins. (11) Urea and SDS electrophoretic patterns of commercial meat products containing TVP.

Reprinted from *Nihon Shokuhin Kogyo Gakkai Shi (J. of Food Science and Technology)* 25(11):635-40 (1984). Address: 1. National Food Research Inst. (Shokuhin Sogo Kenkyujo), Ministry of Agriculture, Forestry and Fisheries, Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan; 2. Nagano State Lab. of Food Technology, Kurita, Nagano-shi; 3. Kyoritsu Women’s Univ., Kanda-Hitsubashi, Chiyoda-ku, Tokyo.

1106. Praskin, Laurie Sythe. 1985. The Farm soy history: An overview. Document part II. Los Gatos, California. 10 p. Dec. 1. Unpublished manuscript. [Eng]

• **Summary:** (Continued): In 1975, Farm members started a company to promote the use of soybean products in the America diet. The company, named simply Farm Foods [Farm Food Company], began sales on the East Coast with full-fat soy flour (ground fresh on The Farm), TVP (texturized vegetable protein), Good Tasting Nutritional Yeast, split soybeans, and Tempeh Starter Kits (developed by Cynthia Bates and Dr. Lyon). In 1976, under the management of Leticia Coate and Robert Tepper, Farm Foods began participating in national health food trade shows. At the time, they were one of the only companies representing soyfoods. Along with their packaged products, they sold cookbooks and served free samples of tempeh, TVP chili, and nutritional yeast crackers.

“The products and recipes developed over the years led to the publication of three cookbooks: *The Farm Vegetarian Cookbook* (1975) and *Tofu Cookery* (Oct. 1982), edited by Louise Hagler, and *Tempeh Cookery* (March 1984), edited by Colleen Pride. These books made a major contribution in westernizing recipes previously Oriental in origin. They were available in all natural food stores throughout the country.

“The work with soy products on The Farm also inspired members to start two vegetarian restaurants; the Farm Foods Cafe [opened Aug. 1976], in San Rafael, California, managed by Robert Dolgin, was the first “soy deli” in the United States. Everybody’s, located in Nashville, Tennessee [opened July 1980], was managed by Judd and Diane Hoffman.

“The acceptance by the public of Farm Foods Cafe was overwhelming, and although it only operated from 1976 to 1977, it pioneered the path for many tofu delis that have followed since. The unique characteristic of this deli was the tofu and tempeh shop producing fresh products located in the rear of the store. The Farm Foods Cafe also became the first [sic] company to market a non-dairy ice cream made from soybeans. This frozen dessert, marketed under the name of ‘Farm Foods Ice Bean,’ is still being sold in health food stores nationwide.

“In 1977-78, The Farm Foods Cafe closed, and the soy processing equipment was moved to San Francisco. Farm Food Company began wholesaling soy products throughout California under the management of Robert Tepper. They continued marketing Farm Foods Ice Bean, and added tofu salad [like eggless egg salad], ‘tofu cheesecake,’ a frozen soy yogurt dessert, and the first firm-pressed tofu to hit the California market. In 1980 it was decided to drop the perishable tofu business and concentrate on the nationwide distribution of Farm Foods Ice Bean. The plant in San Francisco was closed, and large scale production began in a Memphis, Tennessee, dairy and ice cream factory. This

new location gave the company easier access to East Coast distributors, and they soon established additional warehouses in Connecticut and California.

By 1984, under the management of Ron Maxin and Michael Lee, the weekly production of The Farm Soy Dairy [in Summertown, Tennessee] was 1,000 lb of tofu, 150 gallons of soymilk, 20 gallons of soy yogurt, 20 gallons of soy ice cream, 400 ice cream sandwiches, and 90 lb of tempeh. Today, the Soy Dairy produces an average of 5,000 gallons of soymilk a month for Farm Foods to use in Ice Bean production. The soymilk is shipped by tanker truck to the Ice Bean production plant [in Memphis], and the Farm Soy Dairy also markets its products in Nashville and Columbia, Tennessee.

“The Farm’s uniquely controlled vegetarian diet led to two official studies of its effect on the children. In 1979, Dr. Jeffrey Hergenrather, et al., conducted a study on the pesticide levels in the breast milk of vegetarian nursing mothers on the Farm. He submitted a letter of his findings to the editor of the *New England Journal of Medicine*, March 26, 1981. His letter challenged a previous article written by Rogan, et al, (*New England Journal of Med.* 1980) which stated that ‘there are no obvious dietary predictors’ of chemical pollutant in human milk. Rogan went on to say ‘For certain fat-soluble chemicals, nursing infants can be regarded as living at the top of the food chain and are exposed to much more than background levels.’ Dr. Hergenrather’s study included 12 women whose breast milk was analyzed for 17 chemical substances. When compared to the seven contaminants studied by Rogan, in all but one of the contaminants, which showed no difference in contaminant levels, the milk of the vegetarian women had lower levels of contamination.

“The second study was conducted by Jean Roberts Fulton in 1980 and was published in the *Journal of the American Dietetic Association*. She studied a group of the Farm nursery school children and found their amino acid and iron intake to be adequate. (The diet was low on calories, however.)

“The innovative methods used by the Farm soy technologists inspired many groups and individuals to start all over the world to train in the Farm Soy Dairy, and many who couldn’t come personally were encouraged through correspondence. In 1977, Plenty, the non profit relief organization founded by the Farm, established an international training program whereby people from other countries could come and train in soybean processes and other technologies that The Farm had to offer. The Farm Soy Dairy received its first trainees from Guatemala and Mozambique.

“From the beginning days of the Farm Soy Dairy, the technicians realized the value that soybeans could have in Third World countries. Eventually they were able to share their knowledge and training in the field of soybeans by

starting a dairy in an impoverished country. In 1979, Plenty Canada and Plenty USA sent Farm Soy Dairy technicians Laurie Sythe Praskin, Suzy Viavant and Richard Decker to Guatemala to help establish Plenty's first international soy dairy/tofu shop. Other technicians who trained on the Farm have gone on to help start soy programs with Plenty Canada in Lesotho (in Southern Africa, 1979-present), Jamaica (1983-present), St. Lucia (1983-present), and Dominica (1984-present).

"Many of the people who lived on The Farm and trained in the Soy Dairy or with Farm Foods have started their own soy companies or are working in underdeveloped countries. The common goal felt by all has been to provide healthful, delicious foods for all people, rich and poor alike. Because soybean products can be presented as gourmet dishes, yet can also be prepared very simply, they continue to be accepted by all classes of people" (Continued). Address: 17969 Oak Dr., Los Gatos, California 95030.

1107. *SoyaScan Notes*. 1985. Chronology of soybeans, soyfoods and natural foods in the United States 1985 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Jan. 2. The soybean crushing industry begins a year of major restructuring as the big get bigger and two pioneers drop out. Ralston Purina announces that it has sold six of its soybean crushing plants to Cargill, Inc. A seventh at Memphis, Tennessee, was closed. This removed the company from the soybean commodity business. With this transaction Cargill passes ADM to become America's largest soybean crusher.

Jan. 3. "Myth or Miracle: Debunking the Tofutti Fad," by Mark Medoff published in *Whole Life Times*. The first exposé of Tofutti, which contains very little tofu. Jan. 13 Medoff appears on the Gary Null Show, Natural Living, to discuss his findings for 1 hour on prime time radio.

1985 Jan. 12. A.E. Staley Manufacturing Co. announces that it is basically getting out of the soybean crushing business. It has sold five of its six soybean plants (having a combined crushing capacity of some 275,000 bushels daily) to Independent Soy Processors Co., which is closely affiliated with Archer Daniels Midland. Staley was unable to sell its Decatur facility, which ceased operations indefinitely in Jan. 1984. With this transaction ADM has probably regained a slight lead as America's largest soybean crusher.

Jan. 14-26. Soybean Utilization Workshop held at Soyfoods Research Center in Gannoruwa, Peradeniya, Sri Lanka, sponsored by the Sri Lanka Soybean Project and INTSOY. 24 representatives from 12 developing countries participate. The world's first event of its kind (*Soyanews*, Dec. 1985).

Jan. 25-27. Natural Foods Expo at Anaheim. Soy ice creams steal the show. Tofu standards are debated heatedly at Soyfoods Association board of directors meeting on Jan. 28,

especially by Ralston Purina attorney. Board decides funds are too limited to try to hire an executive director for SAA. Jan. 31. Paul Obis, founder and editor of *Vegetarian Times*, is seriously considering buying *Soyfoods* magazine from Doug Fiske. He makes a firm offer in late March.

Feb. "Designer Beans," an excellent overview of the U.S. soyfoods movement and its gourmet connections by Sandy MacDonald, published in *New Age* magazine.

Jan. American Soybean Association introduces SIS (Soybean Information Service), a computerized database focusing on soybean production and marketing, and oil and meal. The earliest record is 1958.

Feb. 21. *Tofutti and Other Soy Ice Creams: Non-Dairy Frozen Dessert Industry and Market*, by Shurtleff and Aoyagi published by The Soyfoods Center. Two volumes, 352 pages. This is the first study of the rapidly emerging soy ice cream market, and of Tofutti.

Feb. 27. "Tofu Products May Be In, but Its Fans Wonder if There's Tofu in the Products" by Trish Hall published in *The Wall Street Journal*. Second major exposé on so-called "tofu ice creams" (such as Tofutti and Gloria Vanderbilt Glace), which contain only a token amount of tofu, as a marketing gimmick.

March 13-14. The theme of the Feb. 27 *Wall Street Journal* article picked up by the NBC evening news and the Today Show. Very positive coverage for tofu. Gary Barat of Legume, David Mintz of Tofu Time, and Gloria Vanderbilt each speak about tofu.

March 22. *The Book of Tempeh*, extensively revised second edition by Shurtleff and Aoyagi, published by Harper & Row. New bibliography (374 entries), history chapter, and list of tempeh producers.

March 26. Soyfoods Association's Tofu Standards (7th draft) presented to eight senior officials at the U.S. Food and Drug Administration's Center for Food Safety and Applied Nutrition, in Washington, DC, by Tom Timmins (Head of SAA Standards Committee), Gary Barat (President of SAA), Steve McNamara and Tom Donegan (SAA Food & Drug attorneys). The FDA group hears an hour long presentation on tofu, the standards, and the Soyfoods Association of America.

March. Soyarella (later renamed Soy Mozzarella), a tofu-based cheese, is introduced. It becomes an instant hit. Distributed by Neshaminy Valley Natural Foods of Huntingdon Valley, Pennsylvania, it is labeled as "non-dairy," yet it melts, and it tastes like cheese. Shrouded in secrecy, its manufacturer is unknown and the ingredients are questionable. It is sold in large blocks and labeled at individual stores.

March. American Soybean Assoc. launches a campaign among its members to write USAID and encourage them to cancel support for U.S. programs (such as INTSOY) aiding soybean production in Third World nations. The campaign is successful.

April 1. INTSOY signs a new cooperative agreement with USAID. Their work will henceforth focus on soybean utilization. The shift toward utilization began in 1983 and all work on soybean production and varietal development stopped in Aug. 1986.

April. *Tempe: An Annotated Bibliography*, compiled by Siagian and Sofia in Indonesia. Containing 273 references, it is the first bibliography to introduce the extensive Indonesian-language research on tempeh, the majority of which has been published since 1980.

April 15-16. International Symposium on Tempeh held in Jakarta, sponsored by the Indonesian Ministry of Health. 113 people attend.

April. Central Soya buys Griffith Laboratories' line of protein products.

May 31. Barricini Foods acquires Farm Foods, which then becomes a trade name for Barricini's natural / health foods line of non-dairy frozen desserts, including the pioneering product, Ice Bean, and Barricini Tofulite.

May. Morinaga, one of Japan's largest dairy companies, establishes Morinaga Nutritional Foods, Inc., a subsidiary with offices in Los Angeles, to focus on promoting their long-life silken tofu in America.

May. At the 6th Annual *Natural Foods Merchandiser* Merchandising Awards, soyfoods do well. Miso Mustard by American Natural Foods and Malted by Westbrae win gold medals. Ah Soy by Great Eastern Sun wins a silver.

May. Soft Tofu Cheese, a non-dairy cream cheese cultured in miso, launched by Simply Natural, Inc.

June. Tofu Topper launched by Worthington Foods.

June. Ralston Purina publishes its 1985 Consumer Attitudes Monitor. Soy Protein in Foods, based on a nationwide survey of 628 adults. Indicates positive attitudes toward soy protein and soyfoods.

July 19. Shamrock Capital, a private company headed by Roy Disney, buys Central Soya, a publicly owned corporation. Agreement to buy was announced April 2.

July. Soy Supreme, spray-dried tofu powder, launched by Oberg Foods Div. of St. Peter Creamery.

July. Asian Symposium on Non-Salted Soybean Fermentation held at Tsukuba, Japan.

July 31. Tofu Time's sales of Tofutti increased more than sevenfold last year to \$17,114,886 as compared with \$2,361,391 for the previous year. Net income increased nearly 100-fold to \$2,006,451.

July. New Gallup survey on vegetarianism of 1,033 Americans shows that millions are eating less meat and tens of millions agree with the move away from meat. 72% disagree with what used to be the standard notion: "The vegetarian diet is just a fad that will pass." A majority (52%) believe that "no one really needs to eat meat more than once or twice a week."

Aug. The DE-VAU-GE soymilk plant in West Germany starts production. Built by STS, with 4,000 liters/hour of

soymilk capacity, they make Granose and GranoVita brands of soymilk.

Aug. Lightlife Meatless Tofu Pups (hot dogs) introduced by Tempehworks / Lightlife Foods of Greenfield, Massachusetts. The product sold nearly \$250,000 in the next 10 months.

Sept. Soyfoods Center introduces SOYA, a computerized bibliographic database on soybean utilization, history, nutrition, processing, marketing, and production. Contains 18,500 references from 1100 B.C. to the present.

Sept. 30. Fearn Natural Foods in Illinois is sold by Louis Richard to Modern Products, Inc. in Milwaukee, Wisconsin.

Sept. 30 to Oct. 4. Tropical Soybean Workshop held at the International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria. Proceedings are published in 1987 as *Soybeans for the Tropics*. Also this year IITA established a soybean utilization unit.

Sept. Tofulicious, a tofu-based non-dairy ice cream launched by Eastern Food products of Minneapolis. It was developed in conjunction with the University of Minnesota and funded by the Minnesota Soybean Research and Promotion Council. By 1986 it has become the first soyfood product in recent times to be actively promoted by state soybean associations, who sell it at many state and county fairs... where it is a big hit. Through Tofulicious many soybean growers begin to warm up to soyfoods.

Oct. 8th Draft of the Tofu Standards finished, incorporating extensive suggestions from FDA. Compiled by William Shurtleff.

Oct. Mori-Nu brand aseptically packaged tofu introduced by Morinaga Nutritional Foods.

Oct. Cream of the Bean Soygurt, a cultured soymilk yogurt, launched by Cream of the Bean, Inc.

Nov. Kikkoman introduces a long-life tofu in a foil retort pouch, imported from Japan. Poor quality causes the product to be withdrawn. It was re-introduced later.

Dec. Tofu Time starts exporting Tofutti to Japan. The first order by Daiei (a large retailer) of tubs for their parlors, is \$350,000. This may be the first major export of a soyfood product (not including ingredients such as soy protein isolates) to Japan.

\* The International Institute of Tropical Agriculture (IITA) in Ibadan, Nigeria, starts a program to promote processing and utilization of soybeans in Nigeria and throughout Africa. Continued.

1108. *SoyaScan Notes*. 1985. Chronology of soybeans, soyfoods and natural foods in the United States 1985 (Continued) (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Continued. 1985 New Trends:

Dramatic Rise of Tofutti and Other Soy Ice Creams. 1985 will go down in the soyfoods history books as the "Year of Tofutti." Never before in history of the United

States has any soyfood product achieved such widespread and sudden popularity or notoriety.

During 1985 at least 50 brands of soy ice cream (many with “Tofu” on the label) were on the market worldwide, most in the USA. And many were made by America’s biggest dairy companies. An estimated 2.5% of all frozen desserts except novelties (popsicles, bars, etc.) sold in supermarkets were soy-based nondairy. The result of all this was to introduce tofu and isolated soy proteins to millions of people in a very positive context.

But many of the companies that sold so-called “tofu ice creams,” while emphasizing tofu in their product names and marketing programs, actually had surprisingly little (if any) tofu in their products. In fact they contain so little that this marketing gimmick might be misbranding and a deliberate deception of the consuming public.

Rise of Soyfoods in Europe. Thanks to the Belgian Office of the American Soybean Association (ASA), and specifically to the efforts of Michael Martin, Europe’s growing soyfoods movement is starting to become organized and active. In March 1984 Martin launched Europe’s earliest known soyfoods newsletter, *Soya Foods*, and in September organized the First European Soyfoods Workshop, for which bound proceedings were published. This is the first time in recent decades that ASA has promoted soyfoods (other than soy oil) in the Western World. The strong U.S. dollar has led to a recent dramatic decline in imports of soybeans and soybean meal to Europe for feed and oil use (European rapeseed and sunflowerseed are being substituted), so the ASA is exploring new outlets where soy is unique.

The launching of tofu production and marketing by Switzerland’s biggest supermarket chain, Migros, and by Galactina, a large and respected maker of dietetic and pharmaceutical products (including soymilk) is a landmark for tofu in Europe. In early January, *Tages Anzeiger*, one of Switzerland’s biggest newspapers, had a special report on tofu, followed on Jan. 9 by a 30-minute TV feature on tofu.

The total number of soyfoods companies in Europe continues to show a steady increase. Many of these are being founded by people interested in macrobiotics. By Jan. 1985 there were 1,113 names in The Soyfoods Center’s computerized mailing list of people actively involved with soyfoods in Europe.

At the 1984 ASA soyfoods workshop, Martin reported the following estimates of annual European soyfoods consumption: A table with three columns shows: Soyfood name, consumption, percentage of U.S. consumption.

Soy oil–1.7 million metric tons–38%  
 Modern soy protein products–40 million kg–28%  
 Soymilk–9 to 10 million liters–7%\*  
 Tofu–5 to 6 million kg–22%  
 Tempeh–400,000 to 500,000 kg–50%  
 Miso–250,000 to 300,000 kg–11%

\* U.S. figure includes soy based infant formulas.

European figure is not clear on this point.

Note that the population of the USA is about 234 million compared with 489 million for all of Europe (not including the USSR), but 237 million for Northern and Western Europe, where most of these products are consumed.

Rapid Growth of Second Generation Soyfoods. In the 1984 edition of this book, we stated that the three fastest growing soyfoods in the USA (in terms of production increases) were tempeh (33% a year compound annual growth rate), tofu (15%), and soy sauce (14%). But now the picture has changed. In 1984 the fastest growing category was second generation products, ready-to-eat, all-American preparations, especially those based on tofu. The leader in this group is clearly soy ice creams (led by Tofutti), with a production growth rate of roughly 600% a year for the past 1-2 years. Then comes convenience tofu-based entrees such as Legume’s products, tofu burgers and tofu burger mixes, and the like. This is the number one way that soyfoods are now entering the mainstream American diet. And the biggest gains are being made by marketing companies, rather than manufacturers. The second fastest growing category may now be imported soymilks, growing at about 40-60% a year. Major New Capital Influx. The following is a brief summary of new capital influx to the soyfoods industry: A table with four columns shows: Company name, date of offering, \$ amount, equity or debt; use.

Legume–Oct. 1982–\$100,000 net–Equity. For tofu frozen entrees

Legume–Oct. 1982–\$100,000–Debt. For tofu frozen entrees

Legume–Nov. 1983–\$400,000 net–\*Equity. For tofu frozen entrees

Legume–Nov. 1983–\$200,000–Debt. For tofu Frozen entrees

Hinode Tofu–Nov. 1983–\$2,500,000–Equity For general expansion

Tofu Time–Dec. 1983 \$2,760,000 net–Equity. For soy ice cream

Tempehworks–July 1984–\$265,000–Debt. For tempeh expansion

Legume–Feb. 1984–\$200,000–Debt. For tofu frozen entrees

Legume–Aug. 1984–\$1,248,000 net–Equity. For tofu frozen entrees

Brightsong–Dec. 1984–\$500,000–Equity. For tofu products

Legume–April 1985–Expecting lots more. For tofu frozen entrees

White Wave–Expecting.

Note: Equity = Sale of equity ownership in the company via stock in a public offering or in a private placement. Debt = Debt financing by taking out a private loan.

How have these companies fared? Tofu Time has done spectacularly well. The value of the company

has increased more than five-fold since Dec. 1983, and profits are excellent. Legume, a marketer of low-calorie, cholesterol-free frozen entrees featuring tofu, has had the hardest sledding. A preliminary prospectus by Huberman Margaretten & Straus dated 5 June 1984 stated that from its inception through 31 March 1984, the company incurred aggregate losses of \$709,773, including a loss of \$18,465 in 1982, then \$225,302 in 1983, increasing again to roughly \$486,500 in 1984. Legume's common stock had a negative book value; 1984 sales were "a little less than \$1 million." Yet the company has excellent products and in early 1985 landed some big food chains, which could help its bottom line considerably.

**Growing International Interest in Tempeh.** During 1983-84 Japan became a major tempeh producer. By May 1984 the world's largest tempeh producing company was Marusan-Ai (of Japan), which made 15,150 lb. a week. New marketing and production techniques were pioneered. The full story was described by Shurtleff and Aoyagi in *Tempeh Production* (1984).

Three Major International Symposia Featuring Tempeh were held: 15-16 April 1984 in Jakarta, Indonesia; 15-17 July 1984 in Tsukuba, Japan; and May 1986 in Honolulu, Hawaii. A special 13-day group study tour on Japanese Food Fermentations, led by Dr. Keith H. Steinkraus, has been organized by the Japanese-run, New York-based Technology Transfer Institute. Tempeh continues to be one of the fastest-growing soyfoods in the USA.

**Growing Interest in Spray-Dried Tofu.** Eleven articles were published this year on a product that promises to revolutionize the tofu industry. The first and largest manufacturers (St. Peter's Creamery and Clofine) are both dairy companies. Spray dried tofu should appeal to the food industry, since it is easy to ship, store, and process.

**Dairy Magazines Publishing Many Positive Articles About Soy-Based Dairylike Products.** Traditionally the dairy industry has seen dairy analogs as a threat and fought to oppose them. The decades-long struggle against margarine is a good example of this. But now, many small dairies, struggling to survive, are looking for new products. A number (such as St. Peter's Creamery and Clofine) have gained a new lease on life by starting production of soyfoods.

**Major Changes in the U.S. Soybean Crushing Industry.** Narrow crushing margins, a depressed export market for U.S. soybean meal, and poor profitability have led two of America's biggest soybean crushers, the A.E. Staley Manufacturing Company and Ralston Purina, to decide to get out of the soybean crushing business in Jan. 1985. Clearly they view poor profitability as a long term problem, and plan to diversify away from unpredictable agricultural commodities toward the "value added," retail end of the nation's food supply. Staley, in effect, sold its plants to ADM and Ralston Purina sold its plants to Cargill. In Nov. 1984 Staley acquired CFS Continental, Inc., the nation's

second largest supplier to the foodservice industry. Staley, previously the oldest existing soybean crusher in America (since 1922), now relinquishes that honor to ADM. ADM is now the largest soybean crusher in America, but Cargill (which has many overseas plants) is the biggest in the world. These changes have led to a concentration of control in the U.S. soybean crushing industry. Both Staley and Ralston Purina plan to keep their edible soy protein (isolates, concentrates, etc.) operations.

Biotechnology is Emerging as a Major, Promising Factor in future soybean breeding development. Some agricultural experts are predicting that it could usher in the latest agricultural revolution, following the agricultural revolution of the 1940s and the Green Revolution of the 1960s and 1970s.

The "Calcium Craze" Starts in America, aiding sales of tofu (curded with calcium sulfate), which is one of the best non-dairy sources of calcium.

1109. *SoyaScan Notes*. 1985. Development of the book *History of Soybeans and Soyfoods* (Overview). Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** 1980 Oct. 22. First Table of Contents for *Soyfoods History*. I started this book because Nahum Stiskin of Autumn Press refused to let us use material from our tofu and miso books in our next book, titled *Soyfoods*, and it's hard to write the history portions of soyfoods. Inspired by Dr. Harry W. Miller and Henry Ford.

Dec. 9. Start to put bibliographic records on 3 x 5 inch file cards.

1981 March 13. Add chapters on Nutrition, National Soybean Processors Assoc., T.A. Van Gundy.

April 26. Add Society for Acclimatization, Li Yu-ying, Horvath, Lager.

May 15. Make Overview into four chapters. Add Soybean Chronology, Sri Lanka, History of Soybean Production, Asian History, Berczeller, USDA.

May 30. Change book title to *History of Soyfoods and Soybeans* from *Soyfoods History*.

June 6. Make Chronology Chapter 1. Make History of Soybean Production a separate chapter. Add McCay, *Soyfoods Producers in the West* (Listing of companies), changed title from *Soyfoods History* to *History of Soyfoods*.

August 21. Four Soybean Processors (Staley, ADM, Ralston Purina, Central Soya), Hymowitz, Bureau of Plant Introduction.

Oct. 8. Cargill, Co-op Processors, drop Hymowitz, *Soybean Production Pioneers*, put Soy oil ahead of soy flour, change the order of many chapters.

Nov. 3. Change title to *History of Soybeans and Soyfoods*. Put soy nuggets [fermented black soybeans] before miso.

Nov. 7. Set up first 3+2 character cataloging codes for Soyfoods Center library and documents, e.g. Hym-81.

1982 Jan. 2. Brief History of Fermentation East and West.  
 Feb. 2. Macrobiotics and Soyfoods, Kikkoman.  
 March 21. K.S. Lo and Vitasoy. Relocate East Asian pioneers at end of Pioneers section.  
 June 18. Separate Fermented Tofu and Fermented Soymilk.  
 July 22. Separate Soy Oil and Soybean Meal from Hydrogenated Soy Oil Products.  
 Aug. 21. Put all country histories together.  
 Oct. 25. Start using % instead of percent in Margarine chapter.  
 Nov. 13. D.W. Harrison.  
 Nov. 19. Decide to do separate chapter on Lecithin. Retitle each country from "History of Soyfoods in X" to "History of Soybeans and Soyfoods in X."  
 1983 Jan. 1. Switch from 3-letter codes to 4-letter. Hymo-73.  
 April 17. Changed "at" to KW = (keyword) on cards.  
 May 5. Dr. Fearn.  
 Nov. Added Cereal-Soy Blends at Flour chapter, Iowa State University, History of Soyfoods and Health Foods in Los Angeles.  
 1984 March. Meals for Millions, SFM-Rodale.  
 Sept. 22. Added 12 chapters on individual countries. Divided hydrogenation into 3 chapters: Oil, margarine and shortening. Change book's subtitle to "Past, Present, and Future." Structure it into four volumes.  
 Oct. 31. Completely restructure Soybean Production chapter into 16 parts. Discuss each by decade.  
 Dec. 26. Add Ice Cream.  
 1985 Jan. 19. Change ModProt to ProtMod, ProtIsol, etc.  
 March 8. Add PPC = Pioneering Protein Companies: Glidden, Rich Products, Gunther, Griffith Labs, I.F. Laucks. March 9. Add the Chemurgic Movement and US Regional Soybean Industrial Products Lab: Industrial Uses of Soybeans. United Nations, History of World Food and Protein, Hunger and Malnutrition.  
 April 17th. Redo outline, giving each company its own line and bibliography, like Adventists. Print outline vertically. Address: Director, Soyfoods Center, Lafayette, California 94549. Phone: 510-283-2991.

1110. **Product Name:** Hera Vegetable Savoury Mixes [Fibre-Rich Burgers, Meatballs, Meatloaf, Shawburger, or Soysage].  
**Manufacturer's Name:** Haldane Foods Ltd.  
**Manufacturer's Address:** Units 16 & 20, Long Furrow Trading Estate, East Goscote, Leicester LE4 8XJ England.  
**Date of Introduction:** 1985.  
**Ingredients:** Meatballs: Textured soya protein food, oatmeal, potato powder, vegetable fat, hydrolysed vegetable protein, oatbran and germ, vegetable oil, onion powder, guar

gum, garlic powder, herbs, spices.

**Wt/Vol., Packaging, Price:** 200 gm (7 oz) in cellophane envelope in paperboard box.

**How Stored:** Shelf stable.

**Nutrition:** Meatballs: Per 33 gm: Calories 123, protein 9.3 gm, fat 4.7 gm, carbohydrate 11.7 gm, fibre 3 gm, minerals 2.6 gm.

**New Product–Documentation:** Labels. 1985, undated.

"Meatballs: A complete natural mix of Soya Protein, Herbs, and Spices. High fibre. Requires only water. Needs no eggs. No added salt."

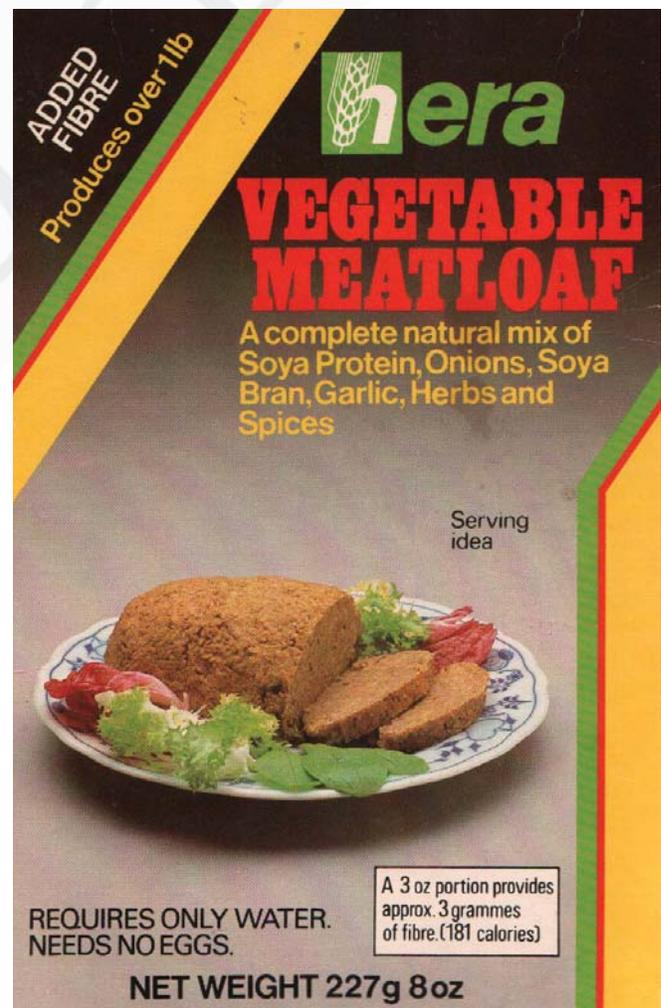
1111. **Product Name:** Hera Vegetable Soup Mixes [Bran Paysanne, Farmhouse Vegetable, Tomato, or Vegetable Goulash].

**Manufacturer's Name:** Haldane Foods Ltd.

**Manufacturer's Address:** Units 16 & 20, Long Furrow Trading Estate, East Goscote, Leicester LE4 8XJ England.

**Date of Introduction:** 1985.

**Ingredients:** Goulash: Wholemeal wheat flour, dried onions, vegetable oils, cornflour, hydrolyzed vegetable proteins, textured vegetable protein food, tomato powder, paprika



powder, sea salt, wheat germ, potato powder, caraway seeds, herbs, spices.

**Wt/Vol., Packaging, Price:** 125 gm (4.4 oz) plastic envelope.

**How Stored:** Shelf stable.

**Nutrition:** Per 100 gm Goulash: Calories 393, protein 16 gm, fat 13 gm, carbohydrate 53 gm.

**New Product–Documentation:** Label. 1985, undated.

“Goulash: Wholesome soup mix based upon natural ingredients and with added natural supplements.” Soya Bluebook. 1987. p. 100.

1112. **Product Name:** Hera Vegetable Meals [Bolognese, Casserole, Chili, Curry, Goulash, or Stroganoff].

**Manufacturer’s Name:** Haldane Foods Ltd.

**Manufacturer’s Address:** Units 16 & 20, Long Furrow Trading Estate, East Goscote, Leicester LE4 8XJ England.

**Date of Introduction:** 1985.

**New Product–Documentation:** Label. 1985, undated. “A complete natural mix of Soya Protein...”

1113. **Product Name:** Hera Soya Milk.

**Manufacturer’s Name:** Haldane Foods Ltd.

**Manufacturer’s Address:** Units 16 & 20, Long Furrow Trading Estate, East Goscote, Leicester LE4 8XJ England.

**Date of Introduction:** 1985.

**New Product–Documentation:** Product leaflet. 1985, undated. “Health, Hera, and You.”

1114. **Product Name:** Hera Tofeata Tofu. Soya Bean Curd.

**Manufacturer’s Name:** Haldane Foods Ltd.

**Manufacturer’s Address:** Unit 25, Hayhill Industrial Estate, Sibley Rd., Barrow-Upon-Soar, Leicester, England.

**Date of Introduction:** 1985.

**Ingredients:** Water, dehulled soybeans, calcium sulphate (natural coagulant).

**Wt/Vol., Packaging, Price:** 255.6 gm (9 oz) vacuum pack inside full-color paperboard box. Retail for 65 pence.

**How Stored:** Refrigerated.

**Nutrition:** Per 100 gm.: 328 calories, protein 7.8 gm, fat 4.3 gm, 2.3 gm.

**New Product–Documentation:** Label. 1986, undated.

“Fresh, Light. A non-dairy meat alternative. A versatile replacement for meat and dairy products. Keep chilled.”

Letter from Simon Bailey. 1988. Oct. 10. Haldane joined forces with British Arkady in Feb. 1988 as part of Arkady’s Health Food Div. Brian Welsby and Peter Fitch are joint managing directors. Letter from Neil Robinson. 1989.

Aug. 7. The three major tofu products in Britain, as far as I know, are (1) Tofeata Tofu by Haldane Foods (Hera), Leicester, England; (2) Cauldron Foods, Bristol, England; (3) Truehealth Tofu by Birchwood Foods, Wrexham, Wales.

1115. **Product Name:** [Soy Flour, Textured Soy Grits,

Textured Soy Protein].

**Manufacturer’s Name:** Sojaprotein.

**Manufacturer’s Address:** Industriska Zona B.B., 21220 Becej, Yugoslavia.

**Date of Introduction:** 1985.

**New Product–Documentation:** Soya Bluebook. 1985. p. 90; 1986. p. 87.

V. Molar. 1988. *Hrana i Ishrana* (Food and Nutrition). 29(2):67-69. “Quality aspects of products made by the Sojaprotein Co. for catering.” The company makes full-fat and defatted soy flour, full-fat soy grits, and textured soy protein.

Letter from Dr. L. Bodis, director of FTTE in Budapest, Hungary. 1990. April 2. “Soya Vita is an extruded product, used mostly as a substitute for meat. It is made by Sojaprotein (in Becej, Yugoslavia), which also makes soy-cubes, TVP, soy meal, and soy oil.”

Note: This is the earliest known commercial soy product made in Yugoslavia.

1116. **Product Name:** [Soja Vita {Soy-Enriched Food Similar to Grits}].

**Manufacturer’s Name:** Sojaprotein.

**Manufacturer’s Address:** Industriska Zona B.B., 21220 Becej, Yugoslavia.

**Date of Introduction:** 1985.

**New Product–Documentation:** Hillyer. 1987. *Soybean Digest*. Oct. p. 24. “Eastern Europe wants more beans.”

In the soya cookbook titled *Eteleink Szojaval*, there is a color photo of a bagged product named Soja Vita on page 11, and a full-page ad on page 45.

Letter from Dr. L. Bodis, director of FTTE in Budapest, Hungary. 1990. April 2. “Soya Vita is an extruded product, used mostly as a substitute for meat. It is made by Sojaprotein (in Becej, Yugoslavia), which also makes soy-cubes, TVP, soy meal, and soy oil.”

1117. **Product Name:** Mealmaker. Spiced and Flavoured.

**Manufacturer’s Name:** Spices & Essences (Ceylon) Ltd.

Forbes & Walker Group (Importer & Marketer). Made in India by Mysore Snack Foods Limited.

**Manufacturer’s Address:** S&E, 29 Braybrooke St., Colombo 2, Sri Lanka.

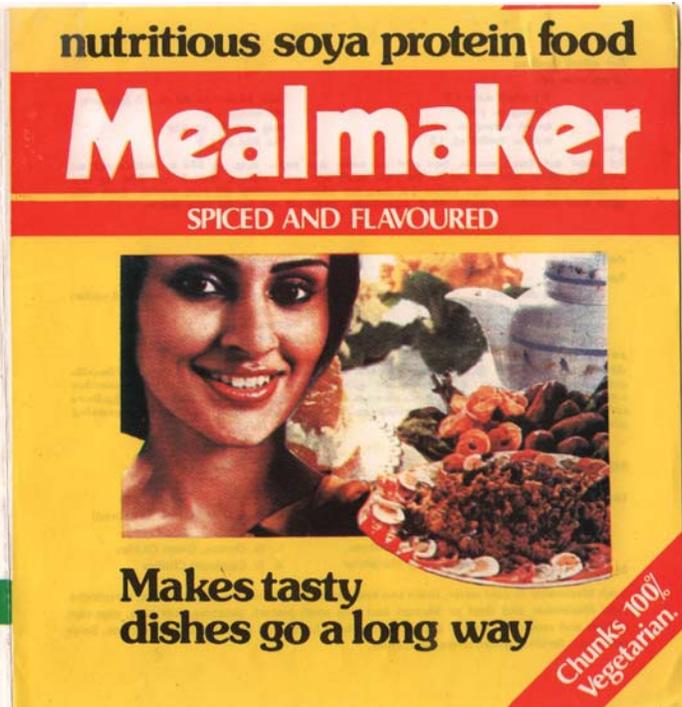
**Date of Introduction:** 1985.

**Ingredients:** Soybeans, spices.

**Wt/Vol., Packaging, Price:** 100 gm retails for Rs. 7/50.

**How Stored:** Shelf stable.

**New Product–Documentation:** Label/Leaflet. 1985. 5.5 inches square. Red, yellow and black with photo of beautiful lady holding a dish of TVP. “Nutritious soya protein food. Makes tasty dishes go a long way. Chunks. 100% vegetarian. Cholesterol free. Excellent meaty texture. Natural spices added. Flavour enhanced.” Recipes for Mealmaker Curry, and Sweet and Sour Mealmaker. Imported—probably from



India.

1118. Batt, Eva. 1985. *Eva Batt's vegan cooking*. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 144 p. Illust. (55 line drawings) by Margaret Leaman. Index. 22 cm.

• **Summary:** Across the bottom of the front cover: "The classic vegan cookbook. Recommended by The Vegan Society."

Contents: Acknowledgements. Introduction. Mueslis. Soups and small savouries. Salads and Salad dressings. Ways with vegetables. Main meals. Small savouries. Savoury sauces, stuffings and spreads. Desserts and ice cream. Bread, cakes and buns. Pastry, biscuits and cookies. Miscellaneous. Useful information.

Soy related: In the Introduction are sections on "Soya" (p. 13-14) and "Textured Vegetable Protein (TVP)" (p. 17; several brands are available. "Most come in flavoured and unflavoured varieties, in chunks and mince." This nutritious food is low in fat, "high in protein, economical, easily stored, requires very little cooking, and no waste {bone, skin, gristle or fat} is involved").

Recipes include: Beauty breakfast (with "3 tablespoons vegetable milk" [Plantmilk concentrated soymilk], p. 28). Fresh fruit muesli (with vegetable milk, p. 29). Cream of onion soup (with "2 teaspoons soya flour" and "¼ pint {140 ml} undiluted concentrated vegetable milk," p. 34). Salad cream (with "1 tablespoon undiluted concentrated vegetable milk," p. 41). Tofu mayonnaise (with "4 oz {120 gm} silken tofu," p. 41). Basic nutmeat mixture (with "2 level teaspoons soya flour," p. 54). Curried textured vegetable protein (with

"1½ oz {45 gm} unflavoured textured vegetable protein, mince or chunks," p. 55). Mushroom pie (with soya flour, p. 62). Fricassee with mushrooms (with "2 oz {55 gm} tvp mince," p. 63). Savoury steak (with "tvp slices" and "soy sauce," p. 66). Bengal curry (with "1 teaspoon soya sauce," p. 68). Pizza (with "10 oz {285 gm} cooked tvp or tin of soya beans," p. 75). Onion tart (with "Soya sauce," p. 76). Soya fritters (with soya flour, p. 79). Soya burgers (with "2 oz. tvp mince," p. 81). Soya crispie (with soya flour, p. 92). Junket (with "½ pint {285 ml} concentrated soya milk," p. 96). Banana ice-cream (with "¼ pint soya milk," p. 97). Plamil ice-cream (with "7 fl oz {200 ml} concentrated soya milk," p. 97). Fruit and nut loaf (with "7 fl oz {200 ml} soya milk," p. 101). Tiger's bread (with 1 oz {30 gm} soya flour," p. 102). Small fruit cakes (with soya flour, p. 102). Soya 'cheese' (cream style) (with "4 oz soya flour," p. 122). Soya 'cheese' (cheddar style) (with "3½ oz Soyolk or other heat-treated soya flour," p. 122). Soya compote (with "2 oz. soya flakes"). Soya milk and/or soya flour are used in many baked goods (breads, cakes, and buns, etc., see p. 99-137).

Note: Eva has basically not yet realized how tofu, tempeh, miso and good-tasting soymilk can transform a vegan diet.

Previous edition published as *Eva Batt's Vegan Cookery*, the first major vegan cookbook ever published, with over 300 recipes, plus practical advice and nutritional information. The "corporate author" is given on OCLC as the Vegan Society.

Plamil Foods put this at the top of its list of recommended vegan cookbooks. "This cookery book is most comprehensive and advises on preparing nutritious

appetising meals without meat, fish, eggs or dairy products. Essential nutrients from vegetable sources, planning meals for best food value, savoury dishes, snacks, desserts, cakes, bread, biscuits, sauces, garnishes, etc.” Address: Vegan Society, UK.

1119. Kahn, E.J., Jr. 1985. *The staffs of life*. Boston, Massachusetts: Little, Brown and Co. 310 p. See p. 251-299. Index.

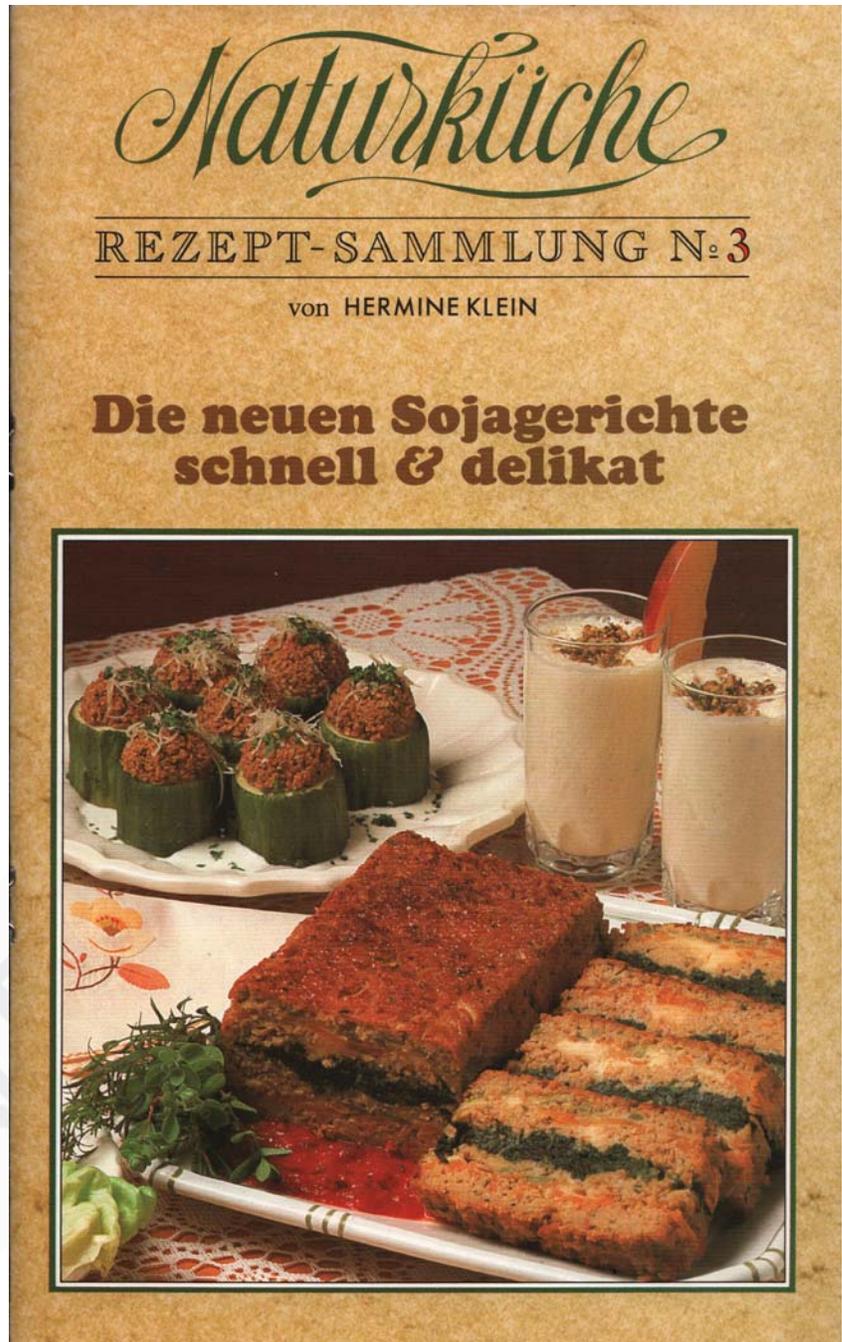
• **Summary:** Most of this book originally appeared, in somewhat different form, in *The New Yorker* (1985). Contents: Preface. Author’s note. 1. Corn: The golden thread. 2. Potatoes: Man is what he eats. 3. Wheat: Fiat panis. 4. Rice: Everybody’s business. 5. Soybeans: The future of the planet. Ely Jacques Kahn was born in 1916.

1120. Klein, Hermine. 1985. *Die neuen Sojagerichte: Schnell und delikate–Naturliche Rezept-sammlung No. 3* [The new soy recipes: Quick and delicate–Natural recipe collection No. 3]. Vienna, Austria: Fachverlag Gesundheit GmbH. 50 p. Illust. 24 x 15 cm. [Ger]

• **Summary:** An attractive cookbooklet. Contents: Introduction. Green seeded soybean recipes. Yellow soybean recipes. Making tofu at home. Tofu sweets. Soymilk recipes. Miso soups. Soy granule recipes. Soy granule sweets. TVP recipes. Soy burgers (*Sojastangerln*). Address: Vienna, Austria.

1121. McDougall, Mary A. 1985. *The McDougall health-supporting cookbook*. Vol. 1. Piscataway, New Jersey: New Century Publishers. v + 122 p. Index. 23 cm.

• **Summary:** This is a vegan cookbook whose 250 original recipes are designed to support The McDougall Plan, which is a diet low in fat and sodium, high in complex carbohydrates. Since soyfoods are relatively high in fat, they are used sparingly and the recipes are marked by a symbol of a crown. Soy-related recipes include: No gluten bread (with 2 cups defatted soy flour, p. 7). Rice-soy bread (gluten-free) (p. 7). Easy corn bread or muffins (gluten-free) (p. 7-8). Puffs (gluten-free) (p. 8). Carrot corn bread (gluten-free) (p. 8). Plain & simple corn bread (gluten free, p. 9). Tofu-garlic dressing (p. 12). Tofu chili dip (p. 16). Curried tofu dip (p. 16). Best tofu mayonnaise (p. 16-17). Tofu mayonnaise (p. 17). Tofu “TVP” (using frozen tofu, p. 17). Tamari sauce (p. 37). Azuki rice (p. 62). Tofu and vegetables with rice (p. 67). Mu shui



tofu (p. 78). TVP sloppy joes (p. 89). Smoothies (non-soy, p. 27; using regular or frozen bananas, apple juice or water, and other frozen or fresh fruits). Tofu cheesecake (p. 108). Apricot tofu pie (p. 108-09). A portrait photo on the back cover shows Mary McDougall.

Note 1. Not long after this book was published, New Century Publishers changed its name to New Win Publishing, Inc. and moved to Clinton, New Jersey. As of 2000 this book is published by Putnam/Penguin.

Note 2. This is the earliest English-language document seen (Feb. 2005) that contains the term “gluten-free” (or

“gluten free”). Address: P.O. 14039, Santa Rosa, California 95402.

1122. Patel, John. 1985. Re: Unisoy Milk and By Products Ltd. Letter to William Shurtleff at Soyfoods Center. 1 p. Typed, with signature on letterhead. Undated.

• **Summary:** This company plans to make Gold Soy Ice Cream and “Burgers.” Note: Mr. Patel died on 5 Nov. 1985. He never became actively involved with the Unisoy company.

Note: This is the earliest document seen (June 2015) concerning Unisoy in England. However the company’s first product was not launched until May 1986. Address: 24 Chorlton Dr., Cheadle, Cheshire SK8 2BG, England. Phone: (061) 428-9433.

1123. Young, L. Steven. 1985. Soy protein products in processed meat and dairy foods. In: R. Shibles, ed. 1985. World Soybean Research Conference III: Proceedings. Boulder, Colorado: Westview Press. xxiii + 1262 p. See p. 182-90.

• **Summary:** Contents: Soy protein products: Textured vegetable proteins, soy protein concentrate, soy protein isolates, processed meat applications, vegetable protein entrees—low fat, no cholesterol, reduced calorie. Processed dairy foods: Beverages, all vegetable/high protein frozen desserts, imitation cheese and cheese-like products. Address: ADM, Food Research Div., Chicago, Illinois, 60639.

1124. British Arkady Co. Ltd. 1985? What’s in a name? The story of Arkady. Skerton Rd., Old Trafford, Manchester, England. 5 p. Undated. Unpublished typescript. Double spaced.

• **Summary:** “To find the origins of Arkady ADM Iberica we have to go back eighty years or more. Our story begins in the United States of America where Mr. George S. Ward had begun to build up what was to become the most important group of bakeries in that country.” Ward was unable, even after extensive tests, to get bread of a standardized quality from his various bakeries. One bakery gave persistently better results than the rest. To find a solution he sought the help of the Mellon Institute of Industrial Research at the Univ. of Pittsburgh [Pennsylvania]. Its director was Robert Kennedy Duncan, who formerly held the chair of Industrial Chemistry at the Univ. of Kansas. The ensuing investigation showed surprisingly that the quality of the bread was dependant on the quality of the water used to make the dough. Small amounts of dissolved minerals could have a big effect on the activity of the yeast in the dough and the ultimate bread quality. So Ward developed a ‘magic powder,’ a simple mixture of mineral salts, and added it to standardize the quality of water in all his bakeries. Soon he was producing the best bread in America.

“By way of a tribute and in gratitude to a great scientist,

George S. Ward asked permission of Robert Kennedy Duncan to name the powder after him or rather after the initials of his name R-K-D. So Arkady bread improver was born.”

Eventually Ward allowed the Fleischman Yeast Co. to make Arkady powder and to distribute it with their yeast. This was an excellent commercial arrangement and soon it was well known to bakers throughout America. All this happened before 1913.

During World War I Robert Whymper, a major in the British Army and in charge of all British bakeries in France, noticed that American soldiers were enjoying bread of much better quality than the British soldiers and that the reason for the difference was the magical Arkady powder... In 1920 production of Arkady began in a tiny section of the Baker Perkins factory in Willesden in London.

“The product was excellent, bakers liked it, soon there was the need to build an entirely new factory with increased production capacity. This was established in Old Trafford, Manchester (near the home of the celebrated Manchester United Football team) in 1923. This growth was rapid, the size of the factory doubled in 1929 and again in 1936 and there has been continuous expansion right up to the present day.

“Sales were not just confined to England, the Arkady product was so good that their use quickly spread to other countries. From the technological and information center in Manchester grew up a number of thriving satellite companies. In the years between 1930 and 1939, the British Arkady Company established ‘Arkady’ companies in France, Scandinavia and Germany. Only the Deutsche Arkady Company survived the trauma of the 1939-45 war eventually leaving the ownership of the British Arkady Company. Later the Deutsche Arkady Company joined with Ireks to become Ireks-Arkady. There is only this historical connection between Ireks-Arkady and the British Arkady Company. No commercial contacts exist today and indeed the companies actively compete in some parts of the world...

“Arkady-ADM-Iberica is a joint company bringing together the knowledge and experience of three great companies: ADM—a giant among food processing companies world wide and manufacturers of Arkady products in America; RIBA—established in Barcelona for years, intimate knowledge of Spanish cereal technology; British Arkady—the company which brought the first Arkady product to Europe 65 years ago, and has been in the forefront of bakery technology ever since.” Address: Manchester, England. Phone: 061-872-7161.

1125. **Product Name:** Tofeata Tofu Spicy Burgers.

**Manufacturer’s Name:** Haldane Foods Ltd.

**Manufacturer’s Address:** Unit 25, Hayhill Industrial Estate, Sibley Rd., Barrow-Upon-Soar, Leicester, England.

**Date of Introduction:** 1985?

**Ingredients:** Water, tofu (soybean curd), wheat germ, bulgur wheat, rolled oats, sesame seeds, tomatoes, sunflower seed oil, hydrolysed vegetable protein, sea salt, paprika, chili powder, spices.

**Wt/Vol., Packaging, Price:** 2 burgers weigh 8 oz (227.2 gm).

**How Stored:** Refrigerated.

**New Product–Documentation:** Label. 1987, undated. 4 x 7.5 inch box. Color photo with red, yellow, and black design on white. “A blend of tofu (soybean curd) with wheat germ, cereals and spices. By Hera. A ready to eat vegetarian meal. Keep chilled.” *Soya Bluebook*. 1987. p. 96. “Tofeata Tofu and Tofu Burgers.”

1126. *Family Circle (British edition)*. 1986. I’ve never claimed that it’s a magic diet. I can only say what’s happened to me. Jan. p. 51-52.

• **Summary:** “Twelve years ago, Sonia Newhouse suffered from chronic arthritis and believed she would end her life in a wheelchair. Within months of becoming a vegetarian, she was mobile, and now runs her own successful food business.” Discusses the path of her recovery and the establishment of Vegetable Feasts.

1127. **Product Name:** [Tofu Ravioli (with Bolognese Sauce, or with Cheese Cream Sauce)].

**Foreign Name:** Tofu-Ravioli (an Sauce Bolognese, or an Kaese Rahmsauce).

**Manufacturer’s Name:** Soyana.

**Manufacturer’s Address:** Friedensgasse 3, Postfach 8039, CH-8002 Zurich, Switzerland. Phone: 01-202-8997.

**Date of Introduction:** 1986 February.

**Wt/Vol., Packaging, Price:** 400 gm.

**New Product–Documentation:** Letter from Michael Karlen. 1986. Feb. 16. They now sell soymilk. Brochure. 1986. Soyana. The Future has begun. 10 panels. Blue and white. In German. Tofu Ravioli. Without flesh. Ready to eat; just warm in a pan. Keeps without refrigeration. Whole-grain, organically grown. Two varieties. The sauce Bolognese is made with tomatoes and Soyana soy protein [TVP].

1128. Jones, Paul. 1986. On Michael Cole and his many soyfoods successes in England (Interview). *SoyaScan Notes*. March 4. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Cole started in late 1984. His partner, who has all the risk and 51% equity, is Mr. Arora, a Sikh from India. Cole has 30% equity and the finance company has 19%. Cole spent years in Los Angeles, and is a bit of a hype artist. He launched a soymilk ice cream for the Regular Tofu Co. He now has an inexpensive Japanese tofu plant with a continuous roller extractor. He tanks the milk to a spray drier or Tetra Pack machine. He has had big success with soymilk

in the supermarkets. Before him all soymilk came from Vandemoortele/Alpro in Belgium. He produces private label Tetra Pak soymilks for 3-5 national supermarket chains. He is also doing an organic soymilk. His ice cream looks like it will be very successful. It is made under license for him by Bayvilles, a big company. He has made genuine inroads into the mainstream market. Last year his total sales were \$525,000. He also has okara burgers. He tried a soy yogurt made from thin soymilk but it fell flat on its face. Address: Owner, Paul’s Tofu, England.

1129. Duxbury, Dean D. 1986. Soy protein isolates in restructured/injected meats increase cooking yield 35%. Also improves raw or cooked seafoods. *Food Processing (Chicago)* 47(3):28, 30. March.

• **Summary:** Adding the ADM isolate increases yield of restructured or injected meats by 35%.

1130. *Wall Street Journal*. 1986. Archer-Daniels, Unilever pact. April 10. p. 10, col. 1.

• **Summary:** “Archer-Daniels Midland Co. said it agreed to acquire three European oilseed processing facilities from Unilever PLC. Terms weren’t disclosed.

“The plants include a soybean facility in Europoort, the Netherlands; and oilseed operation in Spyck, West Germany, and an oilseed and vegetable oil refinery in Hamburg, West Germany.”

1131. Andres, C. 1986. High quality tofu made with dairy equipment: Base for frozen desserts, yogurt-type product, imitation sour cream [from ADM]. *Food Processing (Chicago)* 47(4):108-09. April.

• **Summary:** Coagulums made of isolated soy protein, vegetable oil, lecithin, corn sweetener, buffering agent, and glucono delta-lactone. From ADM Research Dept., 1825 N. Laramie Ave., Chicago, Illinois 60639. Address: Editorial Director.

1132. Archer Daniels Midland Co. 1986. Archer Daniels Midland to assume European oilseed processing and refinery operations on May 1st [from Unilever] (News release). Box 1470, Decatur, Illinois. 1 p. April.

• **Summary:** ADM today reached an agreement with Unilever for ADM to acquire three European oilseed processing facilities on 30 April 1986. These are Unilever’s soybean plant at Europoort (Rotterdam), the Netherlands, the oilseed plant at Spyck, West Germany, and the oilseed plant and vegetable oil refinery at Hamburg, West Germany. ADM has already established its European oilseed operation headquarters in Hamburg as ADM Oelmuehlen GmbH.

A related story in JAOCS (Feb. 1986, p. 190) adds: The three crushing plants, with an estimated annual capacity of 3 million tons, represent about 50% of Unilever’s crushing capacity. The plants provide ADM with its first crushing

facilities in Europe. Addition of the European plants apparently gave ADM the largest worldwide crush capacity among private corporations. Address: Decatur, Illinois.

**1133. Product Name:** Genice Ice Delight [Vanilla, Strawberry, Raspberry Ripple, Hazelnut, and Pistachio & Almond].

**Manufacturer's Name:** Genice Foods Ltd.

**Manufacturer's Address:** Pinfold Lane, Llay Industrial Estate, Wrexham, Clwyd LL12 0PX, Wales, UK. Phone: 0978-853-787.

**Date of Introduction:** 1986 April.

**Ingredients:** Vanilla: Soya milk [spray dried soymilk], raw cane sugar, corn syrup, vegetable oil, soya protein, vanilla bean extract, vegetable gums (guar, locust bean gum), lecithin, natural colour (annatto).

**Wt/Vol., Packaging, Price:** 1 litre tub.

**How Stored:** Frozen.

**New Product–Documentation:** Note: The Haldane Foods Group acquired Genice Foods Ltd. in March 1989. Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 4 and 8. This non-dairy frozen dessert was Genice's first product, launched in April 1986 in five flavors. Initially the main soy ingredient was powdered soymilk obtained from Michael Cole of Soya Health Foods Ltd., which probably imported it. But soon Genice switched to using soy protein isolates because they were less expensive and seemed to give a better product.

At that time Genice bought the isolates from Macauley-Edwards (in Peterborough, eastern England), which later somehow became Purina Protein. Genice developed this product largely because they needed an actual product to show potential customers, but they never put much effort into marketing the product because they had already decided that Genice wanted to be a product development and manufacturing company and leave sales and marketing to other companies. By Jan. 1993 the product was seen as extraneous and was even competing with other soy ice creams made by Genice, so it was discontinued as part of the company's "rationalization" program.

Labels sent by Genice Foods Ltd. 1994. Feb. 18. The labels (vanilla, or raspberry ripple) for 1 liter tubs are 6.75 by 4.25 inches. A color photo shows a dish of this soy ice cream next to fruits or flowers with a brown background photo of woven reeds. "Naturally delicious. Non-dairy frozen dessert. Contains no salt, lactose, artificial colourings, emulsifiers, or flavourings." With UPC indicia.

**1134. Wilkinson, Ralph. 1986. Soy fiber: types and sources (Interview). *SoyaScan Notes*. May 2. Conducted by William Shurtleff of Soyfoods Center.**

• **Summary:** Soy fiber is classified into three basic types: (1) Soy bran or soy bran fiber: It is cleaned, finely pulverized soybean hulls.

(2) Okara or soy pulp: The residue left after making tofu



or soymilk. It contains some natural oils and protein, and has a very high protein quality (as measured by PER).

(3) Soy cotyledon fiber (SCF) or defatted soy cotyledon fiber: The residue left after making isolated soy proteins. It contains almost no fat (since isolates are made from defatted soybean flakes), but it still contains quite a lot of high-quality fiber. It binds a great deal of water.

Who sells what?

(1) ADM introduced soy bran in about 1977. Their 1983 catalog (from the IFT show) lists “Nutrisoy Fiber (Soy Bran).”

(2) Ralston Purina now makes SCF which they call “soy polysaccharides.” Ross Laboratories and Mead Johnson use this in small amounts for geriatric foods, sort of like an infant formula for the aged.

(3) Grain Processing Corp. plans to introduce a SCF in mid-1986, i.e. later this year.

(4) Dawson Mills made SCF 5-6 years ago as a by-product of their soy protein isolate operations. It was on the market for only 1-2 months before they got out of the isolate business. Note: The product was named Fi-Trate / Fitrade Soy Fiber Concentrate. On 1 March 1980 the merger of Dawson Mills and Land O’Lakes was officially announced. Address: Grain Processing Corp., Muscatine, Iowa.

1135. **Product Name:** White Waves (Soymilk). Soon renamed White Wave Soya Milk (Plain/Unsweetened, or Sweetened with Raw Cane Sugar).

**Manufacturer’s Name:** Unisoy Milk ‘n By-Products Ltd.

**Manufacturer’s Address:** Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire, England. Phone: 061-430 6329.

**Date of Introduction:** 1986 May.

**Ingredients:** Soya beans, purified water, raw cane sugar.

**Wt/Vol., Packaging, Price:** Both: 500 ml Tetra Brik Aseptic carton. 29 pence (10/86). Unsweetened also in 1 liter Tetra Brik carton.

**How Stored:** Shelf stable; refrigerate after opening.

**New Product–Documentation:** Spot in *The Vegetarian*.

1986. Sept/Oct. “Making Waves.” “There’s a new, very economical soya milk on the market. White Waves is a completely natural product. A real bargain at only 29 pence for 500 ml, 52 pence per litre.”

Simon Bailey. 1988. *Natural Choice*. Aug. 15. “Soya-Based Products.” A photo shows the label. “White Wave Soya Milk–Sugar Free.” On the front (large) and top (small) of the brick-shaped 500 ml aseptic package is a square logo, with one corner at the top—so that it looks like two triangles, one facing up and one down. In the top triangle is an illustration of a breaking wave, and in the bottom half are the words “White Wave.” Note: This combined brand name and logo is strikingly similar to that used for many years by White Wave in Boulder, Colorado, USA.

CSP form filled out by Simon Bailey. 1988. Sept. 28.

Gives date of introduction as spring 1986 and product name as White Wave Soya Milk. *The Vegan*. 1989. Spring. p. 12. Mentions the product. Talk with Neil Rabheru of Unisoy. 1990. July 3. This soymilk, in 2 flavors, was the company’s first product. Production began in May of 1986. Inorganic soya beans were used. The name has always been White Wave Soya Milk; it was never named “White Waves.”

Talk with Neil Rabheru of Unisoy. 1991. Sept. 16. He exported some of this soyamilk to Crivellaro in Italy, packaged under their own brand/label.

1136. Thomas, Susan. 1986. Nutrition and profit in balance. *Financial Guardian*. June 20.

• **Summary:** Two years ago Sonia Newhouse began to market her Vegetarian Feasts—tasty, additive-free, nutritionally balanced frozen meals. Now she has an annual turnover in excess of £500,000 and a staff of 25 turning out 6,000 microwaveable units a day. The products are found in Safeways and Co-op supermarkets.

“Twelve years ago she was virtually crippled with arthritis. No amount of traditional medicine helped until a vegetarian practitioner made her give up animal products, refined food, stimulants and artificial additives. Within days she was walking without pain.”

1137. **Product Name:** Genice Ice Delight Cones [Vanilla and Hazelnut with Carob Coating, Strawberry and Hazelnut with Carob Coating, Vanilla with Raspberry Ripple and Carob Coating].

**Manufacturer’s Name:** Genice Foods Ltd.

**Manufacturer’s Address:** Pinfold Lane, Llay Industrial Estate, Wrexham, Clwyd LL12 0PX, Wales, UK. Phone: 0978-853-787.

**Date of Introduction:** 1986 June.

**Ingredients:** Raspberry Ripple: Soya milk [spray dried soymilk], raw cane sugar, corn syrup, vegetable oil, vanilla bean extract, carob, raspberries, stabilisers (guar gum, locust bean gum), emulsifier (vegetable mono diglycerides), natural raspberry flavour, natural colours (annatto, beetroot red).

**Wt/Vol., Packaging, Price:** 100 ml cone.

**How Stored:** Frozen.

**New Product–Documentation:** Label and leaflet sent by Genice Foods Ltd. 1994. Feb. 18. The small round label reads “Genice Ice Delight Cone–Raspberry Ripple flavour. All natural non dairy vanilla with raspberry and carob.” 2½ inch diameter. Black on pink. The 8½ by 11 inch color leaflet reads: “New from Genice. Ice Delight Cones: The non-dairy alternative to ice cream. Lactose free. All natural ingredients. Available in three delicious flavors.” Three colorful cones, with gold foil as part of each design, are shown against a blue background.

Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 23.

**NEW FROM** *Genice*  
**ICE DELIGHT CONES!**  
**THE NON-DAIRY ALTERNATIVE TO ICE CREAM**



**LACTOSE  
FREE**

**ALL  
NATURAL  
INGREDIENTS**

THE ACTUAL  
SIZE OF THE  
CONES IS  
LARGER THAN  
SHOWN IN  
THIS ILLUSTRATION!

**AVAILABLE IN  
3 DELICIOUS FLAVOURS!**

★ Vanilla and Hazelnut with carob coating  
★ Strawberry and Hazelnut with carob coating  
★ Vanilla with Raspberry Ripple and carob coating



**GENICE FOODS LTD.**  
PINFOLD LANE  
LLAY INDUSTRIAL ESTATE  
LLAY, Nr. WREXHAM, CLWYD LL12 0PQ  
TELEPHONE: 097 883 3787

**1138. Product Name:** Light Tofu Brownies, Sausage Style (Meatless Sausage).  
**Manufacturer's Name:** Light Foods Inc.  
**Manufacturer's Address:** St. Louis, MO 63017.  
**Date of Introduction:** 1986 June.  
**Ingredients:** Water, tofu, TVP (textured vegetable protein), soyoil, egg whites, salt, natural herbs and spices, honey, tamari, wheat gluten, malt powder.  
**New Product–Documentation:** Poster. 1986. “No cholesterol, no MSG, no sugar, no meat.” Spot in Natural Foods Merchandiser. 1987. March. p. 99. Adweek East. 1987. April 6. Soya Newsletter. 1988. Sept/Dec. A new smaller size, (8 links in a 12-oz. package) was introduced in late 1988. Address is now 613c Broadmoor, St. Louis, Missouri 63107. Ingredients include water, tofu, TVP, soy oil, salt, honey, soy isolate, malt powder, and natural herbs and spices.



**1139. Product Name:** Dayvilles N'ice Day (Soya Ice Cream) [Hazelnut, Pistachio & Almond, Strawberry, or Vanilla].  
**Manufacturer's Name:** Dayville Ltd. (Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.  
**Manufacturer's Address:** 78 Stamford Rd., London N15 4PQ, England. Phone: 01-801 7331.  
**Date of Introduction:** 1986 July.  
**Ingredients:** 1994: Soya milk, raw can sugar, raw cane syrup, vegetable oil, soya protein [isolates], flaked almonds, natural stabilisers (guar gum, carob gum), natural emulsifier (lecithin), pistachio extract.  
**Wt/Vol., Packaging, Price:** 3/4 liter (750 ml) rectangular plastic tub.  
**How Stored:** Frozen.  
**Nutrition:** Per 100 ml.: Energy 88 kcal (calories; 370 Kilojoules), protein 2.0 gm, fat 3.2 gm, carbohydrate 10 gm.  
**New Product–Documentation:** Grocer (London). 1986. July 19. p. 40. The product is based on soy protein and comes in one of 5 flavors. European New Product Report/Food. 1986. Aug. 1. p. 21. International Product Alert. 1987. March 18. Letter from Simon Bailey. 1988. Oct. Gives full details. Only four flavors. Dennis Wheatley is in sales.

Health Food Business (England). 1990. June. p. 22-23. “Health Food Business retailer guide to ice creams.” “Dayvilles say have a n’ice day.” These are all natural soya based frozen desserts.

Health Food Business (London). 1992. May. p. 34. “Frozen desserts. Dayvilles Original American Ice Cream. Dayvilles Original American ‘N’ice Day’ is a non-dairy alternative to ice cream, an all-natural soya-based frozen dessert which looks and tastes like premium quality ice cream but which contains no milk or dairy products, no artificial colours, flavours or preservatives, and is cholesterol and gluten-free. Suitable for vegetarians and vegans, it is also appealing to those on cholesterol-free diets or a diet free from milk protein, and is available in Vanilla, Strawberry, Hazelnut and Pistachio/Almond flavors in 750 ml packs. Foundation Foods are the distributors for the South East of England.”

Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 4 and 8. In 1986 Dayville Ltd. asked Genice if they could make a non-dairy frozen dessert intended to appeal more to the general grocery sector of the market than health food stores where Ice Delight and Ice Dream were sold. The product N’ice Day, was launched for Dayville in July 1986, sold in 3/4 litre packs in four flavors—vanilla, hazelnut, strawberry, and pistachio & almond. The soy ingredient was soy protein isolates.

Label (Pistachio & Almond) sent by Genice Foods Ltd. 1994. Feb. 18. 6 by 4.5 inches. Label fits into the top of a 750 ml rectangular plastic tub. Light green on white.

Overhead photo of 3 scoops of white ice cream in a light green octagonal dish garnished by 3 cherries and 3 pineapple wedges. "All natural. Made only with natural ingredients. No artificial colors, flavors, or preservatives." A round red seal states: "Dayvilles seal of quality. Non dairy frozen dessert. Low fat, gluten free." UPC indicia.

1140. Realeat Company (The). 1986. Meat in decline. The 1986 Realeat Survey (News release). London. 2 p. July. [2 ref]

• **Summary:** A three year look at Great Britain's changing attitudes to meat eating. A survey conducted for Realeat Co. by Gallup (Social Surveys) Ltd. polled 3,881 adults age 16 and over at 200 points across the British Isles. Realeat Co. is a natural foods firm that introduced the popular VegeBurger in 1983. The percentage of Britishers who are vegetarian grew to 2.7% in 1986 from 2.1% in 1984. An additional 3.1% avoided red meat in 1986, up from 1.9% in 1984. Students aged 16 and over are now 4 times as likely as the rest of the population to be vegetarian. In 1986, 18.2% of students ate no meat (11% ate no meat, fish or poultry), up from 9.8% and 4.8% respectively in 1985. 7.3% of all women eat no meat versus 4.2% of all men. Of those eating less meat, the upper classes are cutting back the most (mainly for health reasons) and the lower classes the least (if so, more for cost reasons). Address: Gregory Sams, 2, Trevelyan Gardens, London NW10 3JY, England.

1141. *Food Engineering*. 1986. Sea and soy proteins spark analogs, blends. 58(8):91. Aug.

• **Summary:** "By acquiring the Griffith soy protein concentrate line (April 1985) and the Staley concentrate line (Feb. 1986), Central Soya is now the nation's only supplier of soy protein concentrates." Also discusses Ralston Purina custom isolated soy proteins, Grain Processing Corp.'s Frostline tofu mix, Dreamy Tofu from Giant Foods, Tofu For You (a non-dairy frozen dessert based on powdered tofu) from the Ingredient Systems Div. of ITC, spray dried tofu from St. Peter Creamery and Clofine Dairy Products, creamy tofu dressings and Nasoyanaise from Nasoya Foods.

1142. *Windsor Star (Essex County, Ontario, Canada)*. 1986. New dryers expected to end fire hazards. Sept. 23. p. A5.

• **Summary:** "Maple Leaf Monarch Company says new grain dryers to be installed in about 8 weeks should eliminate the nagging problems the company has had with fires." The local labor union leader said he had records of 200 to 300 fires at the plant during 1983 and 1984, although most were small and quickly extinguished by the workers. A photo shows puff of smoke seen coming from a recent Maple Leaf Monarch fire.

1143. Archer Daniels Midland Co. 1986. Annual report 1986. P.O. Box 1470, Decatur, IL 62525. 37 p.



Ships as large as 200,000 tons can unload soybeans for processing at ADM's Europeport plant in the Netherlands. Loadout facilities for ships, barges, trucks and railroad cars give us access to virtually every European market via the best suited transportation system for that market.

3

• **Summary:** See previous page. Net sales for 1986 were \$5,336 million, up 16.8% from 1985, and up 252% from 1977. Earnings for 1986 (before extraordinary loss) were \$239 million, up 46% from 1985. Assets totalled \$3,315 million, up 11.7% from 1985. A three-for-two stock split was declared in June 1986.

“In many ways, 1986 will be remembered as the year Archer Daniels Midland Company stepped up its efforts to meet the growing demands of an increasingly hungry world... Food is a growth business. Globally there are 85 million more mouths to feed each year; the equivalent of the current population of Mexico or more than one-third of the U.S. population...

“In the United States, we entered into a joint agreement with Growmark, Inc., a major Midwest farmer-owned cooperative.” ADM purchased three European oilseed plants this year, including one, the world’s largest (a color photo of which is shown), in the Europoort area of Rotterdam, the Netherlands. The others were at Hamburg and Spyck (on the Rhine River), West Germany. ADM’s partnership in Alfred C. Toepfer International, an international trading company in Hamburg, will also provide new strength in Europe.

In England, Direct Foods Ltd. has been operating successfully for 16 months under the ownership of The British Arkady Co. Ltd. During the year, Arkady acquired Vegetarian Feasts Ltd., a pioneer and market leader in oven-ready frozen meals. “On the average given day, over 100 ships are on the seas with agricultural cargoes sold by Toepfer and/or ADM.” Address: Decatur, Illinois.

1144. Audrain County Historical Society. comp. and pub. 1986. *History of Audrain County, Missouri: An update 1936-1986*. 1st ed. Mexico, Missouri: ACHS. vi + 599 p. Illust. Index. 29 cm.

• **Summary:** The section titled “Active history” notes (p. 9) that one of major fires during the half century covered by this book “destroyed the main feed mill and elevator building of the MFA (Missouri Farmers Association) at 400 East Holt Street on March 17, 1944.” Flames and sparks, rising 150 feet into the night sky, were seen from nearby towns, whose firemen helped to fight the fire. “Loss of the former W.W. Pollock Mill, remodeled by the MFA for soybean processing, was estimated at \$280,000. MFA rebuilt, and the location is now operated by Archer-Daniels-Midland.”

An updated history of the MFA (which started on 10 March 1914) (p. 252-52) states that one of the first cooperative soybean processing plants in the USA was located in Mexico, Missouri, owned and operated by the MFA. On 21 May 1943 the MFA purchased the W.W. Pollock Milling and Elevator Company of Mexico, Missouri. “It consisted of a 60,000 bushel wooden elevator and a 4 story brick building that housed flour milling machinery. The M.F.A. immediately began converting the mill into a soybean processing and feed manufacturing plant. They had installed

all the feed mixing equipment and about half of the soybean processing equipment when it was destroyed by fire on March 17, 1944. By the end of the year plans for rebuilding were progressing.

“The new M.F.A. Soybean Mill was dedicated on November 2, 1946. It was the only such plant in outstate Missouri. With the completion of this plant was born a brand new industry in the northeast quarter of the state where soybean production had been expanding during the past five years with no suitable markets at hand.

“In a radio broadcast at the dedication ceremonies, F.V. Heinkel pointed out that fourteen counties in Northeast Missouri, all within a radius of 50 miles of the Mexico Mill, produced a half-million bushels of soybeans in 1941, worth \$752,000. But this year (1946), he disclosed, the same counties increased production of soybeans to 3,600,000 bushels [up 7.2 fold] valued at approximately \$9 million [up 12.0 fold]. (Revised government figures for that year show production of 3,109,700 bushels, valued at \$7,929,735.) The counties he named were Audrain, Randolph, Montgomery, Callaway, Boone, Howard, Warren, Shelby, Marion and Macon. Until 1946 practically the only markets afforded this new crop were at Quincy, Illinois and St. Louis [Missouri].

In his speech, Heinkel said “We dedicate this plant in the name of progress and advancement to the rendering of service to the soybean producers, livestock feeders, and poultry raisers of this fine agricultural area with the objective of increased prosperity for the farmers and townspeople of Audrain and surrounding counties.”

Heinkel then introduced E.W. Lierheimer, who produced soybeans in Audrain County and who helped raise money to build the new plant. “Lierheimer recalled the late William Hirth had often told him that he had longed to have a major M.F.A. plant located in Mexico, county seat of his home county... Lierheimer also said that this plant didn’t grow up or wasn’t built overnight. ‘It is the result of longrange thinking and careful planning on the part of a lot of people.’”

The Mayor of Mexico, Missouri, Hon. Robert Finley, also appeared on the program and welcomed the new mill. Several days before the dedication ceremonies, the *Mexico Ledger* published a special edition devoted to the MFA, and especially telling all about the new soybean mill. Mitchell White, the editor of this newspaper—published both daily and weekly—appeared on the program. He “recalled a time many years ago when County Agent, Earl Rusk, began to talk of soybeans and their possibilities, and of a mill to process them.” Today, he declared, “this dream has become a reality through the splendid plant of the M.F.A.”

The section titled “Agriculture: A history of agriculture in Audrain County—Emphasis 1933-43” (p. 280-83, by Glen Mutti), begins with an excellent analysis of the effects of the Great Depression on local farmers. Surpluses of agricultural products, low farm prices for these products, terrible summer droughts (1930, 1934, 1936), plagues of grasshoppers

and chinch bugs, heavy debt, many farm foreclosures, and almost no agricultural credit. “The year 1933 ushered in the first huge U.S. government farm program, The Agricultural Adjustment Administration” (called The Triple A or AAA); its goal was to reduce acreages of basic crops thereby reducing production in that hope that depressed farm prices would improve. It was followed by a host of other government programs designed to help farmers. By 1939 the Rural Electrification Administration (REA) and farm mechanization (tractors and combines) had begun to transform farm life. “Rural Electrification and Soybeans, for Processing have probably had more impact than anything else on the Agriculture and standard of living of rural Audrain Countians.

“Soybeans introduced in the 1920s were first used mostly for hay. the crop was harvested with a grain binder tying the beans into bundles, which were shocked up in the field,” and left until they were hauled to the farmstead and fed to cattle. “A few farmers fed threshed soybeans to hogs as a protein supplement to corn. The result was soft pork and a lower price to the farmer for his hogs.

There became a demand for both oil and meal from processed yellow soybeans. In 1936 experimental test plots were set up by the Extension Service on seven Audrain County farms using the best known soybean varieties to determine those which were superior. The Alton Railroad cooperated with the Audrain County Agricultural Agent by furnishing farmers with seed beans. The work was continued into the early 1940s, then in March 1942, meetings were held at Laddonia, Vandalia, and Mexico [cities in Audrain Co.] to discuss the possible establishment of a commercial plant for processing (extraction of oil and meal) of soybeans.

“In 1945 the M.F.A. completed construction of the first soybean processing plant in northeast Missouri. The plant, now A.D.M., is still operative in 1985.

“One third of the land area of Audrain Co., about 145,000 acres, has been planted to soybeans—1974-1984. For more than 25 years soybeans have been the largest crop of the county.”

“The use of agricultural lime in Audrain increased from 180 tons in 1934 to 55,000 tons in 1942.” This expanded use had the most important impact of farming practices during this period.

After World War II began, it was “impossible to replace worn out farm machinery with new equipment. It was patch it up and try to keep it running.” As farmers’ sons entered the military, there was a shortage of farm labor. Many older farmers and their wives shouldered the burden, becoming a “loyal, patriotic, and dedicated work force.” The slogan was “Food for Freedom.” Fortunately the years from 1940 to 1955 were outstanding one for farmers, with record highs in farm income, crop prices, and general prosperity.

Contains detailed federal time series data for each of the following in Audrain County: Number of farms, average

size of farm, land prices per acre, percentage of land tenants (renters), number of horses and mules (work and draft), tractors, combines, yields of corn, soybeans, and wheat (p. 282).

The section on “Irrigation” (p. 283) discusses the importance of irrigation to first crop and double crop soybean yields in Audrain Co., and gives yield statistics. Address: 501 South Muldrow, Mexico, Audrain Co., Missouri.

1145. Benedickt, G. 1986. Verwendung von Sojaerzeugnissen zur Herstellung von Backwaren [Use of soy products in the production of baked goods]. *Schriftenreihe aus de Fachgebiet Getreidetechnologie* No. 8. p. 115-25. Sojaprodukte: Herstellung und Verwendung. [21 ref. Ger]

• **Summary:** Contents: Introduction. Reasons for using soy products: Technical purposes (effect of soy products on baking), nutritional purposes. Summary. Tables (the source for all is Ireks-Arkady): 1. Composition of full-fat toasted soybean meal (*Sojaschrot*). 2. Composition of full-fat, enzyme-active soy flour (*Sojamehl*). 3. Composition of defatted, enzyme-active soy flour. 4. Composition of toasted soy hulls (*getoasteten Sojaschalen*, also called *Sojaspeisekleie*) (Crude fiber is 45.2% of total solids TS); Bulk—by Thomas enzyme method 71.9% of TS; Bulk—by neutral detergent fiber (NDF) method 71.6%.

Note: This is the earliest German-language document seen that mentions soy bran, which it calls *Sojaschalen* (soy + hulls or husks) or *Sojaspeisekeie* (soya + edible + bran) (one of two documents). Address: Ireks-Arkady GmbH, Kulmbach, West Germany.

1146. Barrett, Mariclare. 1986. The cook’s glossary of soyfoods. *Vegetarian Times*. Nov. p. 28-35. [10 ref]

• **Summary:** Gives good definitions, with a full-page color illustration by Emily Soltanoff, of: Soybeans, soynuts, soy flour and grits, soy oil, textured vegetable protein, soymilk, okara (“the pulp that remains after the soymilk has been strained”), soy yogurt and soy cheese, tofu, fermented soyfoods, tempeh, miso, natto, soy sauce.

The article begins: “For 60 seconds on a national television commercial, a small, round soybean rolls past a lineup of infant formula, bread, pizza, chili, salad dressing, ice cream [Tofutti], soymilk and cubes of tofu; meanwhile the narrator intones, ‘The newest development in nutrition is actually one of the oldest foods known to man.’ Through advertising, the concept of soyfoods is brought home to millions of Americans by the soy giant, Archer-Daniels-Midland Company.” Address: Staff.

1147. Dacosta, Yves. 1986. Le gluten de ble et ses applications [Wheat gluten and its applications]. Paris: Association pour la Promotion Industrie Agriculture [APRIA]. iii + 130 p. Nov. Illust. 30 cm. [82 ref. Fre]

• **Summary:** Contents: 1. Composition of the wheat grain. 2. The solubility of the wheat proteins and their classification by Osborne. 3. Composition of the proteins of wheat flour. 4. Interaction among the proteins, the carbohydrates (comprising both the glycoses and the glycosides), and the lipids. 5. The soluble proteins. 6. The gliadines. 7. The glutenins. 8. The characteristics of wheat gluten. 9. Relationship between the constituents in wheat flour and their value in baking. 10. Industrial processes for the extraction of gluten. 11. Modified glutes. 12. The use of gluten to improve the baking quality of wheats weak in gluten (in 1984 some 70% of the gluten produced worldwide was used in leavened baked goods). 13. Other food applications of gluten: Biscuits, pasta, breakfast cereals, nutritious snacks, fritters (deep-fried products), spreads for breads or sandwiches, chewing gum, meat products (extenders and analogs/substitutes), edible wrapping films, protein drinks, aromas (hydrolyzed gluten), aquaculture, feeds for domestic animals (dogs, cats, etc.), and other (such as pharmaceutical tablets). 14. Non-food applications of gluten: Films for wrapping, adhesives, paper coatings, textiles, cosmetics and pharmaceutical creams, other. 15. Economic data: France, the EEC the world. Bibliography. Chart showing the structure of CDIUPA (Commission Internationale des Industries Agricoles et Alimentaires).

Concerning economic data: Table 20 shows, for France, that imports of wheat used by millers rose from 88,000 tonnes (metric tons) in 1974/75 to 116,200 tonnes 1984/85. During the same period, imports of gluten rose from 974 tonnes 4,952 tonnes, and gluten exports grew from 83 tonnes to 4,198 tonnes. Recorded production of gluten began in 1983/84 with 10,288 tonnes, rising to 12,254 tonnes in 1984/85. There are 4 main manufacturers of gluten-and-wheat starch in France: 1. Roquette, in Cambrai (Nord dept.), in Vecquemont (Somme), and in Lestrem (Pas-de-Calais). 2. Tenstar Aquitaine in Bordeaux (Gironde). 3. Paul Doittau in Haussimont (Marne; made about 500 tonnes in 1984). 4. Cooperative of Vic-sur-Aisne in Vic-sur-Aisne (Aisne; began production in 1985). The two largest of these are Roquette and Tenstar Aquitaine; they produce about equal amounts but these amounts are secret.

APRIA is located at 30 rue du Général-Foy-75008, Paris. Phone: (1) 42.93.19.24. The tonnage of wheat milled in the EEC has grown from 207,000 tonnes in 1976/77 to 384,000 tonnes in 1981/82, to 952,000 tonnes in 1984/85. Note the rapid growth after 1982. The top European users (in tonnes) of this milled wheat are: The UK 307,000, West Germany 283,000, France 142,000, Belgium 113,000, Netherlands 58,000, Belgium 113,000, Ireland 45,000, and Italy 4,000.

There are 19 manufacturers of gluten-and-wheat starch in the EEC as follows by country: West Germany 7, UK 5, France 2, Italy 2, Belgium 1, Ireland 1, and Netherlands 1. Outside of France, the largest manufacturers are: Amylum in

Belgium. Grespel & Deiter, and Emsland (both in Germany), Latenstein in Netherlands, Tenstar Products, and Tunnel Refiners (both in the UK).

In 1979, according to the International Wheat Gluten Association (IWGA), 5 companies produced wheat gluten in Australia (Allied Mills Starches, Bunge, Fielder Gillespie, George Weston Foods, and Manildra Starches Pty. Ltd.), 4 in the USA (ADM Milling Co., Centennial Mills, Henkel Corp., and Midwest Solvents Co.), and 1 in Canada (Industrial Grain Products). Japan is also an important producer. In 1984/85, world production of wheat gluten was estimated at 150,000 to 180,000 tonnes. Address: Conseiller d'Entreprises, France: 47, rue Guersant-7015 Paris, France.

1148. **Product Name:** Granose Soya Dessert [Vanilla, Chocolate, or Strawberry].

**Manufacturer's Name:** Granose Foods Ltd. (Marketer). Made in West Germany by DE-VAU-GE Gesundheitswerk GmbH in West Germany.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1986 November.

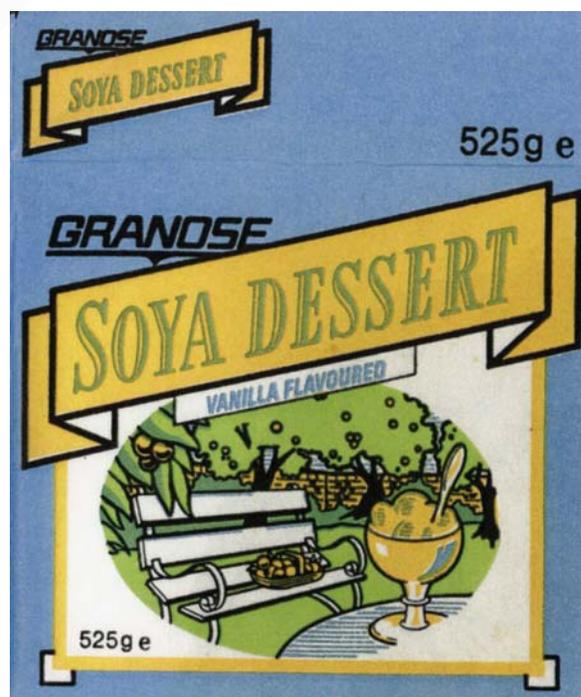
**Ingredients:** Water, dehulled soya beans, raw cane sugar, maize starch, seaweed, sea salt, natural vanilla flavourings.

**Wt/Vol., Packaging, Price:** 525 gm Tetra Brik Aseptic carton retails for £0.45.

**How Stored:** Shelf stable.

**Nutrition:** Per 100 gm: 72 calories. Fat fractions: polyunsaturates 58%, saturates 15%.

**New Product-Documentation:** Labels and color photo sent by STS. 1987. Blue, yellow, black, and green. Illustration of a bench in the park with glass of dessert on nearby table.



Lindner. 1987. *The World Soymilk Market*.

1149. *Soybean Update*. 1986. Central Soya buys plants [from Bunge]. 10(46):3. Dec. 8.

• **Summary:** Central Soya plans to buy 7 of Bunge's 9 soybean processing plants, allowing Central Soya to control 20% of U.S. crushing capacity, while ADM controls 30% and Cargill 25%. Bunge plants to be sold: Cairo, Illinois; Decatur, Alabama; Emporia, Kansas; Jackson, Mississippi; Marks, Mississippi; Vicksburg, Mississippi; Logansport, Indiana.

1150. *SoyaScan Notes*. 1986. Chronology of soybeans, soyfoods and natural foods in the United States 1986 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Jan.—The first major soy cheese to hit the market is Soya Kaas—a landmark product. It was developed and introduced by Richard McIntyre of Soya Kaas Inc., a subsidiary of Swan Gardens Inc. Marketed exclusively by American Natural Snacks of Florida, it long remain America's most popular cheese alternative.

Jan. Ron Ishida, an attorney with no previous knowledge of tofu, working for Azumaya Inc. (South San Francisco, California), rewrites the Tofu Standards without authorization. They have already gone through 8 drafts. This creates a crisis.

Jan. *Soyfoods: The Journal of the European Soyfoods Association (ESFA)* begins publication from Paris. Philippe Vandemoortele of Alpro is president of the association and Guy Coudert is editor of the periodical. The association plans to organize a soyfoods conference every 2 years. But the journal is discontinued after 3 issues.

Jan. Tomsun Foods is reorganized, changing its name (for the fourth time) to Tomsun Foods International. The firm's new chairman is Juan Metzger, founder of Dannon Yogurt. The company produces nearly 3 million lb. of tofu a year.

Jan. First Tofutti Shop opened in Japan by Daiei Co. Inc., Japan's largest retailer. Shop sells non-dairy soy-based ice cream and related snacks.

Feb. 7. Fire destroys Island Spring tofu plant in Vashon, Washington, with an estimated \$1 million loss.

Feb. Soya Kaas, an imitation cheese containing soymilk and casein, launched by American Natural Snacks, a marketer. The manufacturer is Swan Gardens of Georgia.

Feb. Jofu, a tofu-based, non-dairy, nonfermented, yogurt-like product, sweetened with fruits, launched by Tomsun Foods International of Greenfield, Massachusetts. The product is a hit, grossing nearly \$400,000 in its first 32 weeks on the market.

Feb. Barricini Foods has its first public stock offering. Raises \$1.5 million, gross to use in marketing Tofulite and Ice Bean soy ice creams.

Feb. Central Soya purchases Staley's protein line, including Mira-Tex, Procon [soy protein concentrate], and Textured Procon brands.

Feb. ASA hires Jim Guinn as technical director of soybean quality programs. Soybean quality is an area of growing interest, with two parts: 1. The traditional area of soybean condition, concerning grades, damage, foreign material, etc. 2. The newly emerging area of soybean composition and its relation to grades. New measurement technologies make it likely that soybeans may soon be sold based on their composition of oil and protein. Both effect exports and price.

March 5. Pesticide control now tops the Environmental Protection Agency's list of most pressing problems, announces *The New York Times* (and *Soybean Digest*, June/July). Stricter pesticide laws are enacted.

March 7. Richard E. Lyng of California becomes U.S. Secretary of Agriculture, replacing John R. Block. Policies remain unchanged.

April 18. Wm. Shurtleff, in charge of compiling the original tofu standards, submits a strong criticism of the illegitimate Ishida draft in the form of a detailed chronology of the development of the tofu standards.

April. Tofu cheesecake revolution in New York City profiled by *Whole Life*. Thirteen restaurants now offer them.

May. Tofutti Love Drops (chocolate covered graham cookie drops) launched by Tofutti Brands with much fanfare.

May. Nasoya's new million-dollar automatic tofu-making system, imported from Sato Shoji in Japan, begins operation.

June. Increasing consumer deception by "soy cheese" manufacturers. *Whole Life* publishes "Whole Frauds in the News: Will the Real Soy Mozzarella Please Stand Up (That is, If There is One)," an exposé of mislabeling involving Soyarella, Tofu Mozzarella, and Soya Kaas (though the latter brand is not at fault). Argues that it is deceptive for health food stores to call a product "non-dairy" if it contains casein (milk protein), even though FDA rules allows such a designation. In Oct. *Whole Life* reports that "Independent lab tests prove Soyarella hoax; Large quantities of casein [19.6%] found in so-called soy cheese." Soyarella had previously been marketed as casein free.

July. Ralston Purina Co. starts publication of *Nutrition Overview*, a newsletter focusing on soy protein and fiber.

July. Soyfoods win big in 7th Annual Natural Foods Merchandiser merchandising awards: Gold: San-J tamari and shoyu. Silver: Fantastic Foods' Tofu Scrambler and Tofu Burger, Westbrae Natural miso soups. Honorable mention: Walker & Wilks frozen entrees, White Wave boxed tofu.

July. Vitasoy reintroduces its line of reformulated and repackaged soymilk products, originally launched in 1984. They contain more solids and nutrients, and are sweetened with barley malt instead of maple syrup.

July. A Roper poll in the U.S. finds that tofu is the "most

hated" food. 35% of a sample of 2,000 adults checked it on a list of foods said to be disliked, ahead of liver (34%), yogurt (29%), Brussels sprouts (28%), and prunes (24%). Results do not vary significantly by age, but tofu dislike is somewhat less among those with higher incomes. The poll results are very widely publicized, and are even the subject of a question on the TV program Jeopardy (in early 1988)—and its rerun! These findings suggest both a widespread awareness of tofu and a split image: Some like it and others don't.

Aug. Kikkoman's new shoyu plant starts operation in Chitose, Hokkaido, in northern Japan. The first product was shipped on 30 Jan. 1987.

Sept. 9. American Soy Products Inc. plant dedicated in Clinton, Michigan. A \$10 million joint venture between Eden Foods and four Japanese companies (Kawasho, Marusan, Muso, Seikensha), construction on the plant began in Oct. 1985. It will make Edensoy soymilk in Tetra Brik cartons. The first products are shipped in November.

Sept. 19. Tofu standards passed by Tofu Standards Committee in San Francisco, after all committee members except Shurtleff agree to start with a blank slate in drafting new standards—thus erasing years of work by hundreds of people. Shurtleff resigns in protest, arguing that this is a violation due process. Shortly thereafter Barricini and Ralston Purina also refuse to give final approval. Tofu standards are stalled indefinitely after many years of hard work.

Sept. 24. First International Tofu Products Expo, Seminar, and Soyfoods Buffet, held in Munich, West Germany. Sponsored by Bernd Lehmann International Consultants. 100 people attend.

Oct. Supersoy brand soymilk introduced to America by Mitoku USA. It is made by Kibun Health Foods Co. in Japan.

Oct. Ralston Purina sells its domestic agricultural products business, Purina Mills. Total sales for 1986 were \$5.5 billion.

Nov. Island Spring announces \$6.5 million investment from Edward Lynch Co. to finance an expansion plan. Construction of a new 30,000 square foot factory is now underway on Vashon Island.

Dec. 1. White Wave of Boulder, Colorado, acquires Soyfoods Unlimited, a tempeh manufacturer of San Leandro, California. This makes White Wave America's largest tempeh manufacturer.

Dec. 8. Central Soya purchases 7 of 9 Bunge's soybean crushing plants. ADM is now estimated to control 30% of U.S. crushing capacity followed by Cargill (25%), Central Soya (20%), and other (25%).

Dec. Tomsun Foods International nets about \$3.45 million in its first public stock offering (IPO). Most of the funds will be used for sales and marketing of Jofu, and to repay \$800,000 in debts. Total Tomsun sales in 1986 were about \$3.1 million.

Dec. Haagen-Dazs will drop Tofutti and start distributing Barricini Tofulite, a non-dairy frozen dessert.

Dec. Brightsong Foods is named as one of the top ten food innovators for 1986 by Food & Beverage Marketing magazine. In fact, Brightsong is listed first!

Dec. Tofruzen Inc., a soy ice cream marketer from Englewood, Colorado, raises \$1.6 million in a public stock offering. Sales of Tofruzen in fiscal 1986 were \$91,000, rising to \$158,000 in 1987, and \$213,000 in the first quarter of 1988.

Dec. Edible Soy Products in Hudson Iowa is sold to Solnuts of Tilburg, The Netherlands, and renamed Solnuts, Inc. The Hudson and Tilburg plants are the only ones in the world that dry roast soybeans to make soynuts.

Dec. More than 60,000 Italian farmers harvested nearly 25,000 hectares (61,700 acres) of soybeans this year. Italy is now Europe's largest soybean producing country, followed by France. Five years ago, Italy produced virtually no soybeans. The Ferruzzi Group is the leading promoter, helped by hefty subsidies from the EEC.

1986 New Trends:

So Called Tofu Cheeses. Eight new soy cheeses were launched during 1986, many with the term "Tofu" in the product name. Many have been shrouded in mystery, with the names of the manufacturer and ingredients often not disclosed. There has been much consumer deception, mislabeling, and several attempts to conceal the fact that they usually contain casein, the protein in cow's milk.

Soy Yogurts and Yogurt-Style Products. The leader in this exciting new category is Jofu from Tomsun Foods. The two basic types are fermented soymilk products (e.g. Cream of the Bean, Soy-O), and non-fermented tofu-fruit blends (e.g. Jofu).

Move to Manufacturing Soymilk in America. The rising cost of soymilk imports is making them unprofitable. Domestic production, which obviates shipping U.S. soybeans to Japan, then shipping the beans and water back, will have major, beneficial long-term effects on Edensoy, Ah Soy, and Westbrae Malted. Still imported are Vitasoy (from Hong Kong, whose exchange rate is tied to the dollar) and Sunsoy (from Belgium).

The declining value of the dollar against the yen starting in late 1985 led to a steady rise in soymilk prices. But the combination of domestic production and larger size packages (see below) has led to a drop in soymilk prices during 1986. For example, Edensoy, selling for 6 times the price of dairy milk per unit volume in early 1984, was selling for only 3.5 to 4.1 times as much in late 1986, a drop of about 37%.

Soymilk Switches to Tetra Brik Cartons and Liters or Quarts. Edensoy, Westsoy, and Ah Soy have all switched to Tetra Brik cartons this year. Lower total manufacturing and shipping cost is the main reason. The liter/quart size was pioneered in the U.S. by Alpro/Vamo Foods/Sunsoy, and followed by Edensoy, Ah Soy, and Vitasoy. These

counterparts of dairy milk in quarts suit the needs of regular soymilk users by offering a more economical price per unit volume plus greater convenience. Soymilk may be the first liter-size Tetra Brik product to succeed in America.

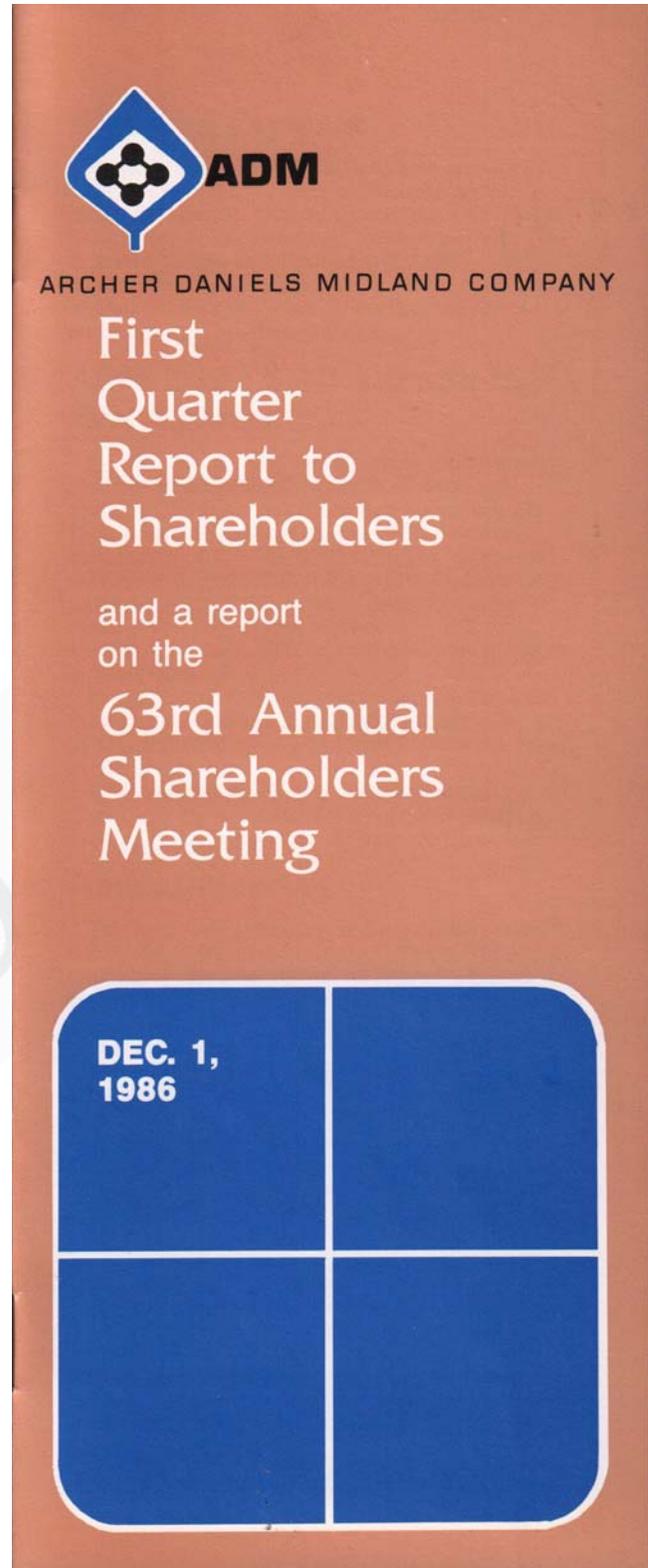
INTSOY is doing outstanding, pioneering work with soyfoods and soybean utilization in the Third World and America. Research is focusing on extrusion cooking, extruder-exPELLER processing for small-scale oil expression, and fresh green soybeans. Since April 1987 the INTSOY Newsletter has become one of the best soy-related publications available.

Morinaga Long-life Silken Tofu becomes a major force in the U.S. tofu market. Traditional manufacturers consider the product a major threat to their markets. Azumaya has hired an attorney who spends considerable time causing troubles for Morinaga.

1151. Archer Daniels Midland Co. 1986. First quarter report to shareholders. Box 1470, Decatur, IL 62525. 8 p. Dec. 1. • **Summary:** In the President's Report, page 1: "Our purchase of the three European Unilever plants was completed on May 1st. The Rotterdam crushing plant is the largest in the world with a daily capacity of 166,000 bushels of soybeans. We are in the process of adding a fluid bed dehulling system to enable the plant to run 100% high protein meal. The Hamburg plant can crush 4,000 tons of soybeans and softseeds daily, and refine the oil from a major portion of that crush. We are planning several modernization projects, including cogeneration, at Hamburg that will cut our processing costs in half. The third plant, located in Spych on the German-Holland border, crushes rapeseed, sunflower seed and flax.

"The former Staley crushing plants leased a year earlier along with our newly acquired crushing plant at Windsor, Canada, were thoroughly modernized and processing costs were reduced substantially. Our Augusta plant was modified to crush peanuts. At the close of this fiscal year, we had the ability to crush 1,875,000 bushels per day of soybeans, rapeseed, sunflower seed, cottonseed, corn germ, and peanuts in 38 crushing plants."

Pages 3-5: A graph shows the value of ADM stock from 1970 (\$1.25) to 1986 (\$18). Dwayne Andreas notes: "Why do we think of ADM stock as a zero based bond? Because our shareholders have elected over the years to reinvest most of the earnings to modernize existing facilities, adapt new technology and acquire additional processing and handling operations. We have constantly reinvested. In spite of the fact that ADM shares, adjusted, have gone from \$1 in 1970 to almost \$20 today, we have not been spectacular earners. We have had some good years and some not so good, but we have constantly reinvested earnings and we know about compound interest. My father taught me about compound interest when I was about 7 years old and fortunately I never forgot it. He said "You've got to know about compound



interest and here is the way it works. You take any interest rate and divide it into 72 and that will tell you how long it takes you to double your money". Well, that made me one greedy boy. If we can make 12% on your capital, 12%

divided into 72 is 6. That means we double your money every 6 years. That's the magic of compound interest when we reinvest your earnings. Our shareholders have endorsed that principal for the last 20 years and we will keep on doing it as long as we can find the right investments. Of course we strive to earn more than 12%.

Also that ADM purchased three Unilever oilseed crushing plants at Rotterdam (Netherlands), and Hamburg (West Germany), and Spych/Spyck (on the West German-Netherlands border). The plants were acquired in April and ADM took over operations on May 1. "The Rotterdam crushing plant is the largest in the world with a daily capacity of 166,000 bushels of soybeans... The Hamburg plant can crush 4,000 tons of soybeans and softseeds daily, and refine the oil from a major portion of that crush. The plant at Spych crushes rapeseed, sunflower seed and flax." Address: Decatur, Illinois.

**1152. Product Name:** ADM Veggie Burger (Dry Mix with Textured Soy Protein Concentrate) [Meat Style, Curry Style, Gyros Style, and Herbs & Spices Style].

**Manufacturer's Name:** Archer Daniels Midland Company.

**Manufacturer's Address:** Box 1470, Decatur, IL 62525.

**Date of Introduction:** 1986.

**Ingredients:** Meat Style: Textured soy protein concentrate, partially hydrogenated corn, and/or soybean and cottonseed oils, soy protein isolate, wheat gluten, methylcellulose, natural flavor, onion powder, salt, dehydrated worcestershire sauce (no anchovies), malt extract, beet powder, black pepper, zinc oxide, niacinamide, ferrous sulfate, copper gluconate, vitamin A palmitate, calcium pantothenate, thiamine mononitrate (vitamin B1), pyridoxine hydrochloride (vitamin B6), riboflavin (vitamin B2), cyanocobalamin (vitamin B12).

**Wt/Vol., Packaging, Price:** 170 gm plastic or foil bag.

**How Stored:** Shelf stable.

**Nutrition:** Per 34 gm.: Calories 140, protein 16 gm, carbohydrates 7 gm, total dietary fiber 4 gm, fat 4.5 gm (Saturates 1.3, Monounsaturates 2.7, Polyunsaturates 0.5), cholesterol 0 mg, sodium 350 mg, potassium 425 mg.

**New Product–Documentation:** Talk with Clyde Boismenu of Basic Foods Co. 1990. Nov. 13. ADM's Veggie Burger comes in 4 flavors in dry form: Meat Style, Curry Style, Gyros Style, and Herbs & Spices Style. They were introduced about 4 years ago. ADM also makes pre-cooked, frozen patties.

Labels sent by Clyde Boismenu. 1990. Nov. 18. 5 by 3 inches. Self adhesive. Black on white. Meat Style: "A delicious vegetarian entree that is based upon a savory blend of textured soy protein concentrate with natural flavorings. The veggie burger can be used in a multitude of recipes. In addition to a grilled patty, the veggie burger can be baked, steamed, poached, or cooked in a variety of ways. Cooking instructions: Empty the contents of the package [it is gray

chunks and flour] into a bowl and add 1¼ cups (290 ml) cold water. Mix well and allow to stand 15 minutes. Form into desired shape and fry in vegetable oil until golden brown or bake in an oven at 375°F for 20-25 minutes. For best results, serve immediately after cooking... One packet make five 3.2 ounce burgers or about 1 pound of finished product."

Soyfoods Center product evaluation of Meat Style. 1990 Dec. 4. CW: Beef flavor. Texture very much like ground meat, both to feel and to eye. Fries up nicely; holds together, browns. Little taste except for slightly unpleasant aftertaste, so needs addition of spices. Excellent in flavorful sauces. Convenient for travel and backpacking. WS: Gyros flavor. When served as pan-fried patties the flavor is not very good (tastes slightly like dog-food), the texture is dry, not juicy, with some hard pieces reminiscent of gristle. It tastes much better when the patties served as chunks in a tomato or spaghetti sauce. AA: Easy and quick to make. CW: Curry. "I think people who are switching from a meat to a vegetarian diet would go for this. It has the right look and feel, and is easy to fix. The curry flavor was very mild (I added more curry powder); the flavor was a C+."

**1153. Product Name:** Protoveg Sizzles [Smokey Bacon Flavour].

**Manufacturer's Name:** Direct Foods Ltd.

**Manufacturer's Address:** Petersfield, Hampshire, England.

**Date of Introduction:** 1986.

**Wt/Vol., Packaging, Price:** 175 gm bag.

**New Product–Documentation:** Color photo of package in *Linda McCartney's Home Cooking*. 1990. p. 18. Upright paper bag. Illustration shows two round patties sizzling in a skillet. "Contains no meat or animal fat."

**1154. Product Name:** Protoveg 5 Grain Burgamix.

**Manufacturer's Name:** Direct Foods Ltd.

**Manufacturer's Address:** Petersfield, Hampshire, England.

**Date of Introduction:** 1986.

**Wt/Vol., Packaging, Price:** Bag.

**How Stored:** Shelf stable.

**New Product–Documentation:** Color photo of package in *Linda McCartney's Home Cooking*. 1990. p. 18. Upright paper bag. Illustration shows two burger patties in buns. A vegetable mix with blended whole grains. Package is brown and gold on white.

**1155. Product Name:** Sojal Light Dairy Free Frozen Dessert [Strawberry, Carob, Hazelnut, or Vanilla].

**Manufacturer's Name:** Haldane Foods Ltd.

**Manufacturer's Address:** Hayhill Industries Estate, Unit 25, Sileby Rd., Barrow Upon Soar, Leicestershire LE12 8LD, England.

**Date of Introduction:** 1986.

**How Stored:** Frozen.

**New Product–Documentation:** Soya Bluebook. 1986. p.

104. Product originally launched by The Regular Tofu Co.

Letter from Peter Fitch. 1990. March 26. The Regular Tofu Co. was acquired by Haldane Foods in Aug. 1987.

1156. **Product Name:** Yoga (Soy Yogurt).

**Manufacturer's Name:** Regular Tofu Company Ltd. (Marketer). Made in Leicester, England, by Rossa Ltd. Made since 1989 in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer's Address:** Hayhill Industrial Estate, Unit 25, Barrow Upon Soar, Leicester, Leicestershire, England.

**Date of Introduction:** 1986.

**How Stored:** Refrigerated.

**New Product–Documentation:** Soya Bluebook. 1986. p. 111.

Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 4, 8, and 16. Ray is quite sure that the Regular Tofu Company has this soy yogurt made for them by Rossa Ltd., a very small ice cream company in Leicester (pronounced LES-tur). Not long after April 1989, when Genice joined the Haldane Foods Group, they started to make Haldane Yoga, a chilled soy yogurt owned by the Haldane Group, but originally launched by the Regular Tofu Company in 1986. This and all subsequent soy yogurts made by Genice were cultured products. Haldane Yoga product sold at the rate of about 500 to 1,000 cases per week, continuing until early 1990 when Genice developed a unique process for making pasteurized yogurts that have a 4-month shelf life at ambient temperatures.

1157. **Product Name:** Tofeata Tofu Burgers, and Patties.

**Manufacturer's Name:** Regular Tofu Company Ltd.

**Manufacturer's Address:** Hayhill Industrial Estate, Unit 25, Barrow-Upon-Soar, Leicester, Leicestershire, England.

**Date of Introduction:** 1986.

**New Product–Documentation:** Soya Bluebook. 1986. p. 92. Letter from Simon Bailey. 1988. Sept. 28. This company is now owned by Haldane Foods.

1158. **Product Name:** Tofeata Tofu, and Tofeata Smoked Tofu.

**Manufacturer's Name:** Regular Tofu Company Ltd.

**Manufacturer's Address:** Hayhill Industrial Estate, Unit 25, Barrow Upon Soar, Leicester, Leicestershire, England.

**Date of Introduction:** 1986.

**Ingredients:** Water, dehulled organic soybeans, calcium



sulphate (natural coagulant).

**Wt/Vol., Packaging, Price:** 9 oz paperboard box. Vacuum packed.

**How Stored:** Refrigerated.

**Nutrition:** Per 100 gm: Energy 78.5 kCal, Protein 7.8 gm, Fat 4.3 gm, Carbohydrate 2.3 gm.

**New Product–Documentation:** Soya Bluebook. 1986. p. 107. Label. Best before 27 Jan. 1988. Paperboard box. 5.25 by 3.25 by 1.38 inches. Red, yellow, black, and green on white. "Fresh, light. A non-dairy meat alternative. Tofeta Tofu–Soya bean curd. Made from organic soya beans." By Hera. Recommended by Kenneth Lo. Front panel contains color photos of deep fried tofu cubes in a salad and a stir-fry, and a whipped tofu dessert. Manufacturer is now Haldane Foods Ltd., Unit 25, Hayhill Industrial Estate, Sileby Rd., Barrow-Upon Soar, Leicestershire, England. Recipes on back for Kenneth Lo's Summer Cold-Tossed Tofeta, Tofu Burgers, Tofu Nut Loaf.

1159. **Product Name:** [Boulangage {Soya Bread Mix}].

**Manufacturer's Name:** Societe Industrielle des Oleagineux (SIO).

**Manufacturer's Address:** Main Office: 30 Rue des Peupliers, 92000 Nanterre, France.

**Date of Introduction:** 1986.

**New Product–Documentation:** Soya Bluebook. 1986. p. 111. Contact: Guy Deneck, Proteins Dir.

1160. Goddard, Susan. 1986. Focus on soya. Hove, E. Sussex, England: Wayland (Publishers) Ltd. 48 p. Illust. Index. 21 x 22 cm. Series: Focus on Resources. [3 ref]  
 • **Summary:** This is a brief introduction to the subject with many color photos. Contents: 1. The importance of soya. 2. The beginnings of soya. 3. Where soya beans are grown. 4. The beginnings of soya processing. 5. The soya plant. 6. Planting. 7. Harvesting. 8. Threshing and storage. 9. At the processing plant. 10. Extracting and refining the oil. 11. Making margarine. 12. Animal feed. 13. Soya protein products. 14. Textured vegetable protein. 15. Other soya products. 16. The nutritional importance of soya. 18. Soya as a world commodity. 19. The future. Facts and figures. Glossary. Books to read. Sources of further information.

Numerous large color photos show commercial soya products. Page 23: Granny Ann High Fibre Cooked Soya-Bran, Bilsons Fibrefit, Nature's Way Soya Flour. Page 24: Waitrose Soya Soft Margarine, Prewetts Pure Soya Bean Oil. Page 27: Life All Natural Salad Cream Style Dressing (egg free) [with soya oil].

Page 30: Mapletons Body Bulk (Malt flavoured milk & soya protein drink mix. Make with milk), Healthcrafts Soya Protein Powder (84% protein). Page 31: Cauldron Foods Vegetable Pâté (mushroom flavour), Cauldron Foods Tofu Burgers (nut style, chilli, or vegetable), Direct Foods Protoveg Menu 5 Grain Burgamix, Direct Foods Protoveg Menu Minced Soya & \_\_\_ Mix, Direct Foods Bean \_\_\_ st (Oriental Style), Direct Foods Protoveg Menu Sizzles, Direct Foods Protoveg Menu Sausmix, Direct Foods Protoveg Menu Burgamix, Sunrise 4 Vegetarian Quarterpound Burgers.

Page 33: Direct Foods Mr. Fritzi Fry's Soy Sausage Mix, Granose Vegetarian Goulash, Direct Foods Protoveg (textured soya protein food) Beef Flavour Chunks. Page 34: Duchesse All-Natural Tofu Dressing & Dip, Amoy Light Soya Sauce, Witte Wonder Organic Tofu Spread (with paprika), Morinaga Ever-Fresh Silken Tofu. Page 35: Plamil Soya Milk Rice Pudding, Provamel Soya Dessert (vanilla [made by Alpro in Belgium]), Sunrise Soya Milk (500 ml, sugar-free, or sweetened with raw cane sugar).

1161. Hunt, Janet. 1986. The compassionate gourmet: The best of international vegan cuisine. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 160 p. Illust. Index. 22 cm.

• **Summary:** An excellent vegan cookbook, written for animal lovers. Soy-related recipes include: Avocado tofu pâté (p. 31). Celery miso pâté (p. 36). French bean salad with tofu dressing (p. 66). Tofu curry (Thailand; p. 74). Tofu and vegetable pakora (p. 86). Tofu layered casserole (p. 96). Tomato flan with tofu (p. 104). Tofu Lemon flan (p. 137). Yogurt dessert (made with cultured soya milk, p. 140). Rhubarb fool (dessert in soya milk, p. 141). Maple pancakes (with soya flour, p. 149). Walnut tofu balls (p. 156).

At least one recipe uses Holbrook's Worcester Sauce—a Worcestershire-type sauce without animal products.

Many recipes call for soy sauce or soya milk, and some for canned soy or nut "sausage." Page 9 lists a number of special ingredients including Direct Foods Protoveg (soya "meat"), Infinity Foods (distributors [in Brighton, at Sussex University]) Soya mayonnaise, Lotus Foods TVP (soya "meats" in a varieties of forms and flavors), Plamil concentrated soya milk (use diluted as a milk, undiluted as a cream), and Tomor Margarine (the author's favorite of the many vegan margarines now available in the UK). In all recipes, each ingredient is listed twice in side-by-side columns: once in its Imperial (metric) form and once in its American form, e.g. 385 ml soya milk, 1 1/3 cup soya milk. A number of recipes call for the use of alcohol (whiskey, brandy, etc.). The author has written at least 14 other books on vegetarian or wholefood cookery. Address: England.

1162. McDougall, Mary A. 1986. The McDougall health-supporting cookbook. Vol. 2. Piscataway, New Jersey: New Century Publishers. iii + 157 p. Index. 23 cm.

• **Summary:** This is a vegan cookbook whose 250 original recipes are designed to support The McDougall Plan, which is a diet low in fat and sodium, high in complex carbohydrates. Since soyfoods are relatively high in fat, they are used sparingly and the recipes are marked by a symbol of a crown. Low sodium soy sauce is used in many recipes. Soy-related recipes include: Scrambled tofu (p. 2-3). Tofu salad dressing (p. 7-8). Dijon tofu dip (p. 9). Onion soup dip (with tofu, p. 9). Dilly tofu dip (p. 9-10). Miso soup (p. 39). Creamed tofu soup (p. 41). Tempeh Creole (p. 62-63). Rice-tofu stuffing mix (p. 88). Tempeh and grain casserole (p. 91). Tofu loaf (p. 96-97). Baked tofu cubes (p. 97-98). Spinach-tofu burgers (p. 99-100). Where's the meat loaf? (with tofu, p. 101-02). Oat burgers (with tofu, p. 102-03). TVP stuffing mix (p. 109). Okara cookies (p. 126). Tofu banana pudding (p. 132). The section titled "Update on ingredients" (p. 133-35) includes a description of: Worcestershire sauce (Sharwood's—natural and without anchovies), umeboshi plum sauce, tamari or soy sauce, okara, tempeh, kombu, and tahini. A portrait photo on the back cover shows Mary McDougall.

Note: Not long after this book was published, New Century Publishers changed its name to New Win Publishing, Inc. and moved to Clinton, New Jersey. As of 2000 this book is published by Putnam/Penguin. Address: P.O. 14039, Santa Rosa, California 95402.

1163. **Product Name:** Living Foods Organic Soy Drink. **Manufacturer's Name:** Unisoy Milk 'n' By-Products Ltd. **Manufacturer's Address:** Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430-6329.

**Date of Introduction:** 1987 January.

**Ingredients:** Incl. barley malt.

**New Product–Documentation:** Talk with Neil Rabheru of Unisoy. 1990. July 2. This product was launched by Living Foods in early 1986. It is exported to the Netherlands. It contains barley malt. It was made as a private label brand for a company named Living Foods, but after that company went into liquidation (bankruptcy), Unisoy decided to continue making the product and marketing it themselves. It is not selling very well because the product concept is wrong. But it has potential.

Talk with Neil Rabheru of Unisoy. 1991. Sept. 16. This product was introduced after White Wave Soya Milk. It contained a little organic barley malt and pearl barley. The product originally belonged to a company named Living Foods (in Brighton, England), founded by David White. Living Foods was an importer-marketer, not a manufacturer. They imported products (such as tofu from the Netherlands) and sold it under the Living Foods brand. They were an agent for Lima Foods, and imported Lima rice cakes. This soyamilk was originally made by Soya Health Foods (Sunrise), but Living Foods was not happy with the price and quality, so they asked Unisoy to make the product, starting in late 1986 or Jan. 1987. In the process, Living Foods went bankrupt, so Unisoy bought the Living Foods brand to use for soyamilk.

1164. Kahn, E.J., Jr. 1987. Profiles: The absolute beginning [Dwayne Orville Andreas and ADM]. *New Yorker* 62:41-68. Feb. 16.

• **Summary:** The best biography seen of Dwayne Andreas, with emphasis on his work with soy. On the first page is a long discussion of Nutri-Bev, a soy-based milk substitute.

Contains a nice portrait (illustration, line drawing) of Andreas on the first page. Address: New York.

1165. **Product Name:** Pasties (With Tofu Filling) [Regular, or Curry].

**Manufacturer's Name:** Bean Machine.

**Manufacturer's Address:** Grymlich, Wales, UK.

**Date of Introduction:** 1987 April.

**Ingredients:** Dough: Incl. wholemeal flour. Filling: Incl. tofu, vegetables, soy sauce, spices.

**How Stored:** Frozen or refrigerated.

**New Product–Documentation:** Carolyn Rees. 1987. April. Soyfoods (ESFA). "The Bean Machine story." Pasties can be sold in different forms such as cooked and then frozen, raw and frozen, or fresh baked. They are ready to eat, and are mainly bought by cafes.

1166. Hannigan, Kevin J. 1987. Vegetable protein use shifts gears: The market for vegetable proteins has changed radically in the past few years with the emphasis shifting from nutrition to function. *Food Engineering* 59(5):155-58, 160, 162-63. May.

• **Summary:** Suppliers who proudly announced a "Protein

Division" a few years ago have quietly folded their tent or changed its name. A consolidation and reorganization is taking place, product by product. About 2 years ago, Central Soya bought Griffith's protein line, although Griffith is still a distributor and continues to serve former customers. Last year Central Soya acquired Staley's concentrate line. Central Soya says its concentrates are "beating isolates to a pulp."

Three vegetable proteins (soy isolates, whey solids, and yeast) are now typical building blocks in over half the food in the American diet, found in more than 2,500 products. These proteins were worth \$579 million in 1985, according to Frost & Sullivan, Inc. Soy and whey each have about 45% of the market, yeast about 10%. By 1989 says the F&S study, about 879 million lb of soy products will be sold annually. ADM sells mostly isolates, Cargill mostly soy flour and grits and textured products. Soy isolate is widely used as a binder at the 2% level to reduce ground meat patty breakage. Address: Features editor.

1167. LaBell, Fran. 1987. Tofu & Tofu Products. *Food Processing (Chicago)* 48(5):Ingredient Handbook insert. May.

• **Summary:** Discusses tofu standards, Brightsong Foods, Nasoya Foods, Clofine Dairy & Food Products, Soyco Foods (Div. of Galaxy Cheese, P.O. Box 5181, New Castle, Pennsylvania 16105), St. Peter Creamery Inc. (Div. of Oberg Foods, 119 W. Broadway, St. Peter, Minnesota). Makes spray dried tofu powder from soymilk coagulated by adding calcium sulfate. Its protein level is 38% and moisture is 5% maximum. pH is 6.7–7.0% in a 10% solution. Fat is about 18%. ADM, Ralston Purina, Rose International, Soyatech.

Soyco Foods makes Soymage, "a new cheese alternative," which is casein free and non-dairy. It is sold in four flavors: Cheddar, Mozzarella, Monterey Jack, and Jalapeno. "It has a light texture and shreds and slices readily." The ingredients and packaging information are given. The company has been making a cheese substitute named Fromage™, based on casein and soy oil, which comes in about 20 flavors. Soymage was developed for people who want a completely non-dairy cheese substitute.

Photos show: Tomsun Jofu (in the carton and in a dish ready to eat). Nasoya creamy tofu dressing (3 flavors in bottles). Address: Chicago, Illinois.

1168. **Product Name:** White Wave Soya Yogart [Raspberry, Strawberry, Black Cherry, Honey & Muesli]. Renamed Unisoy Soya Yogart in Aug. 1989.

**Manufacturer's Name:** Unisoy Milk 'n' By-Products Ltd.

**Manufacturer's Address:** Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire, England. Phone: 061-430 6329.

**Date of Introduction:** 1987 May.

**Wt/Vol., Packaging, Price:** 120 gm cup.

**How Stored:** Refrigerated.

**New Product–Documentation:** Simon Bailey. 1988. *Natural Choice*. Aug. 15. “Soya-Based Products.” A photo shows the label. “Dairy Free. Yogurt-style Cultured Soya Milk.” On the top of each cup is a square logo, with one corner at the top—so that it looks like two triangles, one facing up and one down. In the top triangle is an illustration of a breaking wave, and in the bottom half are the words “White Wave.” CSP form filled out by Simon Bailey. 1988. Sept. 28. Gives date of introduction as Autumn 1986. Neil Rabheru is in charge of production and Martyn Webster of sales.

SoyaFoods (ASA, Europe). 1990. 1(1):3. New products from UnisoY include Soya Yogart in 4 flavors. It is made with fresh organic soya milk and sweetened with pure apple juice.

Talk with Neil Rabheru of UnisoY. 1990. July 2. Followed by letter (fax) of July 9. This product was launched in May 1987 and was renamed UnisoY Soya Yogart in Aug. 1989. The original yogurt was made with ordinary inorganic soyamilk and sweetened with raw cane sugar. “This was the first ever extended shelf life [soy] yogart in Europe. It was also the first to be made from fresh soya milk.” All the previous soy yogurts in the UK had contained soy protein isolates, since the manufacturers did not know how to make soymilk with a high protein level.

In Aug. 1989 the company launched a new soy yogurt, UnisoY Soya Yogart, which had the fruit (such as raspberry) preserved in apple juice (instead of sugar), used organic soyamilk, and was sweetened with pure apple juice, which see.

Talk with Neil Rabheru of UnisoY. 1991. Sept. 16. They started with four flavors shown above. When they switched over to the UnisoY brand, they dropped the Honey & Muesli flavors and replaced it with Peach Melba.

1169. *Milling and Baking News*. 1987. ADM acquires Gold Kist soybean processing facility. 66(19):1. July 7.

• **Summary:** On July 2, Archer Daniels Midland Co. acquired the Valdosta, Georgia, soybean processing plant of Gold Kist, Inc. a farmer’s cooperative. The plant produces soybean meal and crude oil. Gold Kist is one of several cooperatives holding an ownership interest in Toepfer International Group, a grain trading firm in Hamburg, West Germany. ADM owns 45% of that group and thus controls it.

1170. Gleason, Jane E. 1987. Re: Soybean research in Sri Lanka. Letter to William Shurtleff at Soyfoods Center, July 15. 1 p. Typed, with signature on letterhead.

• **Summary:** “Dear Bill: I have checked the library at the University of Peradeniya but have not been successful in finding the journal articles you need... I’ll keep looking.

“This study is turning out to be something like detective work—What happened to the missing soybean? I have begun a survey of soyfood consumption among those who were

trained in home-level processing at SFRC.” It appears “that soy would be very popular if it were commercially available in Sri Lanka. Those who live close to SFRC and thereby can purchase soy products from its small store, eat soy on a regular basis. Unfortunately, however, SFRC is the only place in the entire country that has some of the more interesting and affordable products, hence those who live far from the Centre are confined to eating TVP. Very few people process soy in their homes.

“I have been contacting local business people with the idea of introducing them to products which I believe would have significant demand. I would like to know if you have any suggestions regarding who might be interested in investing in soyfoods in Sri Lanka... Enclosed is the first monthly report.” Address: Agricultural Economist, INTSOY / Soyabean Foods Research Centre, Gannoruwa, Peradeniya, Sri Lanka.

1171. *Clwyd Connection (Clwyd, Wales)*. 1987. Newtech helps ice cream company [Genice]. July. p. 4.

• **Summary:** A large color photo shows Managing Director Ray Pierce and Technical Director Irene Barclay with many 1-liter tubs of Genice Ice Delight, a non-dairy soy ice cream. Genice started developing their product range in April 1986 and began production in March 1987. “Turnover is expected to total £250,000 this year and will treble fairly quickly. Smaller health food shops buy Genice products under the Ice Delight name but the company has also made a major breakthrough in securing own-label business with suppliers to supermarket chains [Soya Health Foods Ltd., marketers of Sunrise Ice Dream]. Up to 7 million people in the UK alone cannot eat dairy related products.

A company named Newtech, located nearby in the Deeside Industrial Park, helped Genice to get started. In May 1987 Newtech was designated as an official Business and Innovation Centre of the European Community. Address: UK.

1172. Gleason, Jane. 1987. Survey of consumers and extension personnel who have been trained in home-level soy processing. *Soybean Marketing in Sri Lanka, Monthly Report*. July. p. 1.

• **Summary:** Soyfoods are desired by many vegetarians and because they are less expensive than fish, eggs, and meat, for which they are seen as an alternative. They are not seen as a substitute for other legumes. Every person interviewed purchases TVP (or Soya Meat) on a regular basis. Those with low incomes purchase it for its economy and taste, and even those with more money who can afford fish and meat buy it for its taste. “This product has become very well integrated into Sri Lankan diets.” The soyfoods taught at the SFRC training program are not as often consumed on a regular basis. The soyfoods most often prepared at home by extension workers are pittu, roti, and the soy mixture; tofu,

tempeh, and soymilk are less likely to be prepared. Regular consumers are less likely to prepare soyfoods at home. For rural people the major constraint on soyfood preparation is inaccessibility of ingredients. Soy flour and soy splits are not available anywhere outside of Gannoruwa. Products in which there is the most interest if they were available are soy-fortified kola kanda (an indigenous drink made of rice flour, green leaves, and coconut), soy dhal, and snack foods. Soy flour is liked in roti and string hoppers.

1173. Holt, John. 1987. Character sketch of Michael Cole (Interview). *SoyaScan Notes*. Aug. 22. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** John Holt was the first to sell soy ice cream in England, starting in 1984. Michael Cole was his salesman, then he left and started his own ice cream company. Cole is a very nice guy, charismatic but he sometimes uses people badly and is not too honest. He was a miniguru on the West Coast of the USA, into self help. Dynamic, pushy, accomplishes a lot. Famous and good with money. Wrote a book. Address: England.

1174. Holt, John. 1987. Soy ice cream in England and Michael Cole (Interview). *SoyaScan Notes*. Aug. 22. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** John Holt was the first to sell soy ice cream in England, starting in 1984. The product was probably named Sojal? Frozen Non-Dairy Dessert. Michael Cole was his salesman, then he left and started his own ice cream company.

Talk with Neil Rabheru of Unisoy. 1991. Sept. 16. The last he heard of John Holt, John was a consultant for some firm in Coventry, but Neil thinks he is no longer there. Neil is absolutely certain that Michael Cole has never been involved with John Holt. Neil thinks that Michael Cole's first involvement with soyfoods in the UK was with Soya Health Foods (Sunrise). Sojal was the first ice cream to be sweetened with honey; it is now Haldane Foods brand because John's tofu company was purchased by Brian Welsby of Haldane Foods, before it was purchased by British Arkady. Address: England.

1175. Golbitz, Peter. 1987. Isolated soy proteins play increasing role in new foods development. Demand for healthful foods and highly functional ingredients spurs market forward. *Soya Newsletter (Bar Harbor, Maine)*. July/Aug. p. 1, 10-11.

• **Summary:** The four major isolate producers today are Ralston Purina's new subsidiary Protein Technologies International (St. Louis, Missouri), ADM (Decatur, Illinois), Grain Processing Corp. (Muscatine, Iowa), and Gunther Products (Galesburg, Illinois; Div. of A.E. Staley Mfg. Co.). ADM entered the isolate market when it purchased Central Soya's plant in 1980. GPC has been making isolates since

the early 1970s. Golbitz describes in detail the process for manufacturing soy protein isolates but completely/carefully omits reference to the hexane solvent extraction step.

Note: This is the earliest document seen that mentions "Protein Technologies International." Address: Bar Harbor, Maine.

1176. *Soybean Digest*. 1987. Tropical fats face the nation. Aug. p. 39.

• **Summary:** "ASA [American Soybean Association] and Archer Daniels Midland Co. (ADM) are developing a 60-second commercial for television to educate consumers about risks in using tropical fats. The commercial promotes domestic vegetable oils. You'll see the commercial this fall on the ADM-sponsored TV program Face the Nation. ADM will also make the commercial available to agribusinesses willing to purchase air time as a service to farmers."

1177. American Soybean Assoc. 1987. Overseas soy products donation program from the Dominican Republic. P.O. Box 27300, St. Louis, Missouri. 12 p. Special edition by Dr. Hyadee Rondon de Zadrunga and Ruth S. Orellana. [10 ref. Eng; Spa]

• **Summary:** In Jan. 1985 ASA contacted the Soy Protein Council to suggest a joint soy protein feeding program in the Dominican Republic. The trial was conducted between Jan. and June of 1986. Dr. Haydee Rondon de Zadrunga was program director. "The objective of the sponsors of this important research, was to demonstrate that soy protein has a prominent place in the daily diet, and that food products manufactured with soy protein do not cause any acceptance problem in pre-school age infants, that they are easy to acquire, and that they can be bought at popular prices."

"In 1984 the area planted of soybeans in the Dominican Republic was of 10,000 acres and in 1985 the acreage planted was of 25,000 acres. The program consisted of the donation of 2 tonnes of soy products to be used in a fortification feeding program."

The following products were donated: 250 kg Procon fortified soy protein concentrate by A.E. Staley Mfg Co.; 250 kg Response 4342 fortified soy protein concentrate chunks by Central Soya Co. 500 kg Textured 16328 textured fortified soy flour (50% protein), and 500 kg Bakers Nutrisoy 63100, fortified defatted soy flour (50% protein) by ADM, and 500 kg defatted soy flour (50% protein) by Cargill. Address: St. Louis, Missouri.

1178. *Journal (Clinton, Illinois)*. 1987. Bean Bits: Booster training schedule. Oct. 20.

• **Summary:** Dr. Alexander Zholobov, head of the row crops division of Gosagraprom (The Soviet Union's Ministry of Agriculture), said one goal of Gosagraprom is to increase protein content of foods and production of lean meat. "The Soviets believe that greater meat production can be acquired

through high protein feed rations. Technical help from the U.S. on expanding soybean protein consumption is a good basis for continued cooperation. As Soviet soy protein demand increases, the Soviet Union will need to import [more] soybeans. Soviet climatic conditions limit soybean acreage to about 2.2 million acres and sunflower acreage to 11 million acres, Zholobov said.” Dick Burket, vice president and assistant to the chairman of ADM, announced that ADM is currently negotiating the possibility of a joint venture with the Soviets on oilseed processing.

1179. Lindner, Anders. 1987. The world soymilk market and Soya Technology Systems (STS) (Interview). Conducted by William Shurtleff of Soyfoods Center, Oct. 21. 7 p. transcript.

• **Summary:** “On 21 Oct. 1987 Anders Lindner, on a trip of the USA, visited the Soyfoods Center (SC). The following interview was conducted by William Shurtleff.

“SC: STS started five years ago, and in that time you have traveled the world, visiting every potential customer, and sold four soymilk plants. What major changes or trends have you seen in the world soymilk market during that time?”

“STS: You must look at one region at a time. In the United States there is definitely an increased interest in and awareness of soymilk. Soyfoods are relatively well known. In Europe there has been a big increase in the number of enquiries about soymilk from all countries. The number of larger companies that have contacted us has also increased.

“Africa is still a dark continent as far as soymilk goes, with the possible exception of Nigeria, where we have a number of quotations pending, awaiting approval for foreign currency. This could take time.

“Looking at Asia, in India there was almost a frenzy of interest several years ago and we still get enquiries every week. The government gave permission to build many new soybean crushing plants. Soybean production is now over a million tons, and it is still not enough. So the price of soybeans is rising, which raises soymilk prices. But I’m not as optimistic about the future of soymilk in India today as I was 6 months ago. India’s first major soymilk plant, established by the Noble Soya House group in Bhopal, has not been as successful as everyone had hoped it would be. Two of India’s best known companies, the Great Eastern Shipping Company (also called the Bhiwandiwalla Group) and Godrej, backed the new company, which greatly bolstered public confidence in the project. Each owned 24% of the private limited company and the rest was publicly owned. Great Eastern provided financing and put a number of their very best people in the top management positions. Godrej, which is *the* marketing company in India par excellence, provided distribution and marketing. They specialize in soaps. Alfa-Laval supplied the plant and Kibun sold their technology know how. Production began in January 1987 and it had all the signs of being a very, very

good project. Their soymilk, named Noble House Great Shake, comes in four flavors (chocolate, strawberry, mango, and American ice cream flavor, basically a vanilla) in 200 ml Tetra Brik cartons. I have heard it said that the products were not well formulated, the timing was poor, the prices were too high, and the products were marketed as a clearly Western-style or foreign product. The project got lots of big media publicity, but much of it was not favorable, we are sorry to say. Today the plant runs only about 2 hours a day.

“We have sold a plant to Amrit Soya and Protein Foods Ltd., owned by the Amrit Company, an old company. They are in Ghaziabad, Uttar Pradesh, on the outskirts of New Delhi and are expected to start production in mid-1988. This will be India’s largest soymilk plant with a capacity of 6,000 liters/hour.

“Back to Asia, when we established STS we located ourselves in Southeast Asia, thinking that with the large consumption of soybean drinks there it would be quite simple to sell plants to make soybean milk as well. But that has not been the case. I find the food processing companies there extremely conservative. Our strategy now is to show the companies in East Asia that our concept works in the USA and Europe.

“China has been a disappointment. They seemed to be more interested in soymilk plants a few years ago.

“So generally speaking, the climate has gotten better, especially in Europe and the United States.

“SC: Has your strategy or basic approach for selling STS soymilk plants changed during this period?”

“STS: Yes, it is changing now. We are expanding our product range by offering processes for other soymilk-based foods. Formerly we thought of ourselves as selling primarily liquid soymilk. Now we are offering process lines for tofu, ice cream, dressings, dips, spreads and other dairy analogs, plus what we call ‘semi-products.’ These are non-consumer, industrial food type products such as concentrated soymilk or curds for use as ingredients by food processors. We are investing in R&D on these. I think we will find new uses for our soymilk base, including new ways of making traditional products, dairy analogs, powdered products, and truly new products.

“SC: Have you made any major technological developments?”

“STS: Yes. we are now offering an ultrafiltration system as part of our soymilk system. This is an important technological innovation. It allows you to concentrate soymilk by removing water without adding heat (thus preserving the good flavor of the product) or to remove certain components from the soymilk, such as oligosaccharides or perhaps trypsin inhibitors or lipoxxygenase enzymes, using membranes. More important, it can help in automating tofu production. The soymilk base goes into the ultrafiltration plant, where it is concentrated. Coagulant is injected into the line and mixed. Rectangular

cakes of tofu are chopped off as they come out the exit end. Luke Lukoskie at Island Spring has been a pioneer in developing these processes using a pilot plant, with an ultrafiltration unit, that we loaned him. This technology seems to have a very promising future for processing soymilk in the West, and for making soya panir (fresh curds) in India. There is not enough cow's milk in India to go around, and most of it is sold in the cities. I think soya panir will undersell dairy panir in India.

“SC: Which company do you feel is your strongest competitor?”

“STS: Our main competitor everywhere is Alfa-Laval. After that, but much less, some of the Japanese companies such as Marusan-Seikensha and Mitsubishi. Given that we had just installed the largest soymilk plant in the Western world for De-Vau-Ge in Germany, I was surprised to note that Eden Foods in America chose Marusan-Seikensha without ever contacting us at all. Marusan seems to have only one English speaking person in the entire company, Mr. Tominaga. Mitsubishi competed with us selling systems in India and Nepal. Takai never seems to be in competition with us. Vandemoortele is no longer supplying systems, though the huge plant they built in Ambatolampy, Madagascar (35 million liters/year capacity) is still in operation. The company, Lalaso SA (Societe Anonym) is run by a woman named Regina.

“SC: Could you tell us a little about the four plants that you have sold?”

“STS: Our biggest and most successful plant was sold to De-Vau-Ge, a Seventh-day Adventist food company in Lueneburg (near Hamburg), Germany. They started production in August 1985 and make Granose and Granovita brands soymilk, sold mainly in the UK and West Germany, but also in Scandinavia and France. The plant is running at full capacity, which is 3,000 liters per hour of soymilk base (4.7% protein). This is 4,000 liters per hour of finished soymilk (3.5% protein), or 50,000 liters a day. They currently only make two products. Labels for the UK market read Granose Soya Milk (4 flavors) and Granose Soya Dessert (3 flavors of custard puddings gelled with natural carrageenan, a seaweed extract). Both products are packed in half liter or liter aseptic Tetra Brik cartons. The plant is doing very well, selling all it can make. This is the only one of the four that has started operation. We have also sold a plant to Island Spring (Vashon, Washington), which may be the next to start production. The capacity is also 3,000 liters/hour of soymilk base. Amrit in India should be in production by mid-1988. Their plant has the same basic capacity as the plant in Germany, but since their soymilk will contain only 2.25% protein, the actual output will be 6,000 liters per hour which is larger than Germany. They will make both beverages and foods, mainly a panir type cheese. The beverages will contain Indian flavorings.” (Continued). Address: STS, Singapore.

1180. Demos, Steve. 1987. History of White Wave, Inc. (Interview) (Continued—Document part III). Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** (Continued): White Wave's tofu production was growing nicely. It rose from 120,000 lb. in 1978 (2,308 lb/week), to 179,000 lb. in 1979 (3,442 lb/week, up 49%), to 279,000 lb. in 1980 (5,365 lb/week, up 56% over 1979).

In February 1979 a major new product line was started: tempeh. Chip McIntosh was the first tempeh maker, followed by Chris O'Riley. An old kitchen refrigerator, warmed by light bulbs, was used as the incubator. The first two products were Soy Tempeh and Soya Rice Tempeh, the latter being America's first multi-ingredient, soy-and-grain tempeh.

At about the same time, a third new product was launched: Polar Bean. It was a soymilk based non-dairy frozen dessert, made in a soft serve machine but sold in hard-pack pints. The first flavor was Banana-carob. Later strawberry, chocolate, carob mint, and orange flavors were added. In about 1984 a soft serve version called Polar Softie was introduced but did not prove successful.

Also in 1979 Richard Leviton visited White wave and the Cow of China, and did an in-depth study of their operations and products, published in the 1979 issue of *Soycraft* magazine. Soyfoods sold both at “The Cow” and for wholesale distribution to other retailers included: Organic Nigari Tofu, Soymilk (Honey-Vanilla or Carob-Maple), Soysage, Tempeh, Missing Egg Salad, Tofu Mayo, Baked Savory Tofu Cutlets, Sweet Bean Tofu Pie, Miso Salad Dressings (Mellow or Hearty), and Tofu Treats or Creamies (Banana-Coconut, Peanut Carob, or Carob-Mint; squares of creamy baked tofu blend on a healthful oats-coconut-flour crust).

Other ready-to-eat items sold only at “The Cow” included Soysage Pate, “Macro” Pizza (with tofu), Tofu Spinach Dill Turnovers, Tofu Cinnamon Rolls, Hot Tofu Meatballs and Meatball Sandwiches, Sloppy Joe Sandwich (made with TVP), Tofu Cream Cheese & Black Olive Sandwich, Tofuna Sandwich (like tunafish), Strawberry Tofu Pie, Soy Sesame Bars, and Tofu Butternut Squash Pie. In mid-1979 bulk recipes for about ten of these products were published, with permission, in *Tofu & Soymilk Production* by Shurtleff and Aoyagi.

Leviton noted: “The Cow of China is surely one of the nation's most ambitious and energetic soyfoods companies.” It was just about breaking even with weekly gross retail sales of \$1,000, three-fourths of which came from soyfoods. Concerning the growth of the still totally unmechanized little company Demos, now the self-styled “beneficent dictator,” always frank and candid, added:

“It was a hell of a struggle, especially for an undercapitalized small business. But I certainly wouldn't discourage anybody because we started with nothing, and we've been going since then, and we've been able to make it

all meet. We've just rigged, we've improvised, we've done everything imaginable, as I'm sure many other people in this industry have. We cut our salaries back, we did without a lot, but its own momentum kicked in. I suppose we consider ourselves alchemists in turning sweat into money. So, let me express my gratitude to everybody and everything, seen and unseen, who have helped us pull this together."

In August 1979 Gary and Chandri Barat arrived in Boulder and spent several days studying the Cow of China. They had met Demos at the Second Annual Soyfoods Conference in Amherst, Massachusetts (July 26-29, 1979). They were driving around the country, studying tofu and developing a business plan in preparation for starting a soyfoods company, which later became Nature's Inn, then Legume. As they studied The Cow of China and Demos invited them for dinner several times. He and his wife, Ginny, served a tofu spinach feta pie and mushroom caps stuffed with tofu. Later Barat told Demos more than once how much this visit has influenced him in starting a company based on tofu entrees. The lineage of Legume's early products (Tofu Cream Pies, Tofu Spinach Pies) can be traced back to The Cow of China.

Barat encouraged White Wave to do a feasibility study on converting The Cow of China into a fast food restaurant named The Family Diner and moving into a vacated A & W root beer stand three blocks from The Cow in a very attractive location. The study was done, a potential menu was developed, but financial backing did not come through.

A White Wave catalog published in December 1979 included several new products: Doufu (extra firm Chinese style tofu), Savory Baked Tofu, and Tamarind Nuts and Seeds (Almonds, Cashews, Spanish Peanuts, Sunflower Seeds, Nut Mix).

The Cow of China deli was doing well. By February 1980 sales were \$1,700 to \$2,000 a week and there were often lines out the door. By the summer of 1980, according to *Soyfoods* magazine, the Cow of China had been renamed the Good Belly Deli, with the slogan "Real Food, Real Fast" and White Wave was producing 7,500 pounds of tofu and tofu products a week. The new deli, an expanded and Americanized version of "The Cow," continued to serve as an excellent showcase for the White Wave's innovative ready-to-eat soyfood products. Working with a friend who was an advertising agent, Demos had dropped the line of assorted health foods (miso, sea vegetables, etc.), expanded the deli items, and installed a stand-up counter bar to eat at and a few tables and chairs. Formerly it had been all takeout. Hot and cold fast food was served. The deli attracted lots of business (there was still usually a line out the door), the products were very innovative and they were praised by the natural foods community in Boulder. Address: Lafayette, California.

1181. *INTSOY Newsletter (Urbana, Illinois)*. 1987.

Zimbabwe and Zambia move ahead on expanded use of soybeans. No. 37. Oct. p. 2-3.

• **Summary:** Describes the many exciting new developments in these two countries, and the organizations responsible for them. In Zimbabwe soybean production topped 100,000 tonnes in 1986-87 and is expected to be 125,000 tonnes next year. The driving force behind the expansion has been the Cooperative Oilseed Producers Association (COPA). Production increases have been stimulated by higher government prices. Nutresco Foods in Harare has recently begun using a new INSTA PRO 600 extruder to make TVP and other soyfoods.

In Zambia the soybean industry is one of the bright spots in the economy. Production has increased from 5,000 ha in 1982 to 25,000 ha in 1987. It could reach 100,000 tonnes by 1990. A previous visit in 1985 by Prof. A.I. Nelson of INTSOY helped spark introduction of extrusion cooking by several private companies: Lee Yeast Co. in Lusaka and the Soy Nutrients Co. The National Milling Co. is eager to use soy flour in maize meal and bread. A soy recipe book was recently published. Soybean experts in Zambia include Fred Javaheri, Joe Temba, Joseph Malwe, Kathryn Siandweza, and Chabala Malwe.

1182. *SoyaScan Notes*. 1987. New Trend: Europe's hottest new soyfood product, smoked tofu, is almost unknown in America (Overview). Oct. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Recent European visitors and letters to the Soyfoods Center have praised the new varieties of smoked tofu made by many European tofu companies. They are surprised that this product is not better known in America. The earliest known commercial smoked tofu was produced in France in 1911 by Chinese soyfoods pioneer Li Yu-ying. In 1974 Komatsugawa Tofu in Japan made a smoked tofu inside a deep-fried tofu pouch, sold in oil in a sardine can. The earliest known smoked tofu in the Western world was introduced in June 1984 by L'Herberie in Montreal, Quebec, Canada. All of the recent European brands have been introduced since 1986. They are made in England (Caldron Foods, Regular Tofu Co., Full of Beans Soyfoods), Germany (Soyastern, Morgenland Pflanzenkost, Christian Nagel Tofumanufaktur), Netherlands (Manna Natuurvoeding, Heuschen-Schrouff B.V.).

1183. Drosihn, Bernd. 1987. The German and European tofu markets. Soyastern and its products (Interview). Conducted by William Shurtleff of Soyfoods Center, Nov. 30. 2 p. transcript.

• **Summary:** A rare insight into the European tofu market. The largest tofu manufacturers in Germany, with estimated production statistics, are Soyastern (4,000 kg/week), Yamato Tofuhaus GmbH (3,500), TKW GmbH (3,500), KMK (2,500; a dairy company in Kassel that makes the

Hensel brand for Schoenenberger Pflanzensaeft GmbH\*), Svadesha (1,500), Tofu Manufaktur Hamburg (1,000), Tiefental Tofuhaus (1,000), Byodo Naturkost GmbH (400), Morgenland Tofu (200), and Atlantis Tofu (200). All of these companies are run by native Germans, none by Asian Germans. The largest tofu company in Europe by far is Heuschen-Schrouff in the Netherlands (40,000). They make tofu, tofu with herbs, and smoked tofu. They are also a major food importer and European-wide distributor, and perhaps the world's largest manufacturer of mung bean sprouts.

Another larger manufacturer in the Netherlands is Linn (Lin) Oriental Products (10,000 kg/week). The big tofu makers in Switzerland are Galactina (3,000; Dr. Peter Speck) and Soyana (3,000; Walter Daenzer). In England: Dragon & Phoenix, Cauldron Foods, Regular Tofu Co., and Paul's Tofu. In France: Société Soy, Sojadoc, and Sojalpe.

Note 1. This is the earliest document seen (Feb. 2013) that mentions Sojalpe, which later became part of Innoval.

Note 2. Schoenenberger is the mother company of Hensel; they do not make soyfoods. Address: Soyastern Naturkost GmbH, Osteratherstr. 26, 5000 Cologne/Koeln 60, West Germany.

1184. ADM—Archer Daniels Midland Co. 1987. Look where soybeans go. Box 1470, Decatur, IL 62525. 18 p. Catalog.

• **Summary:** A color photo on the cover shows one huge, green soybean pod hanging downward, against a dark green and black background. It is lit from behind, making the hairs on the pod look bright yellow. There is a one inch orange border around the photo, with the title written across the bottom.

This is basically an ADM products catalog. Contents: Miracle of the soybean. Soy ingredients processing. Soybeans—A rich source of protein. TVP brand Textured Vegetable Protein, Soy protein isolate (Ardex). Soy protein concentrate (Arcon). Soy fiber & bran (Nutrisoy Fiber E and Arsoy Fiber). Two page color spread photo of about 100 supermarket products containing soy ingredients. Nutrisoy soy flour & soy grits. Soybean oil. Lecithin (Yelkin). The world's needs. ADM products. Address: Decatur, Illinois.

1185. Gleason, Jane; Weliwita, S.M.A. 1987. Home and village level soyabean utilization training in Sri Lanka: Accomplishments, constraints and potential. INTSOY/DARP/SFRC, Sri Lanka. 14 p. Unpublished manuscript.

• **Summary:** A detailed analysis with many summary statistics. This paper argues that because of the large amount of time and fuel required, and general difficulties of making foods at home from whole soybeans, they will not be widely made there. From 1978 to Nov. 1987 SFRC trainers have directly trained over 30,000 people in soya utilization. Of these, almost 27,000 were trained at outstation demonstrations, while over 4,000 were trained at SFRC.

However, because of processing difficulties and time

requirements, it questions the premise that widespread home level utilization of whole soyabean will occur.

The instructors were asked what types of soyafoods are most likely to be integrated into Sri Lankan diets. Soya-fortified kola kenda, a traditional drink made from coconut, rice flour, and leaves of a variety of herbs was most often mentioned as 21 of 48 respondents placed kola kenda in their top three choices. After kenda, the instructors ranked soya-fortified pittu (18), roti (13), snacks (13), waddhi (12), and curry (11) as foods most apt to be part of Sri Lankan diets. Ten respondents stated that soymilk could easily become popular.

The responses of the instructors show that soya will most likely be integrated into local diets through fortification of already popular foods. Many commented that soya flour should be made available for this purpose. Traditional soyafoods from other parts of Asia, for example, tofu in East Asia and tempeh in Indonesia, were not highly ranked as foods easily accepted by Sri Lankans. Only four respondents thought that tofu and none of the respondents thought that tempeh could become important in Sri Lanka.

Table 6 indicates “What characteristic makes soya appropriate for villagers”—Nutrition, 42 respondents; Low cost, 20 respondents; Taste, 5 respondents. Table 7 indicates “Price per unit protein of common foods in Sri Lanka”—Soyabean, 0.04; Chicken, 0.21; Dried fish (fat poor), 0.11; TVP, 0.16. Table 7 also indicates “What constrains soya consumption”—Unreliable supply of soya, 23 respondents; Odd flavour, 22 respondents; Lack of preparation knowledge, 18 respondents; Difficult to prepare, 14 respondents.

Interpretation of the evidence—Three important points can be gleaned from the information provided by the extension workers and the villagers: 1. Thousands of Sri Lankans are aware of the benefits of soya. For the average consumer, the most important consideration when purchasing food is taste, not nutrition. 2. Therefore, soya will most likely be consumed in a form that is already familiar to villagers. 3. It is significant that more instructors consumed TVP than all other types of soya products. Conclusion—The best method of making soya products available to consumers is to work towards greater commercial application of soya utilization technologies.

Training should, therefore, emphasize extension to entrepreneurs. Address: Sri Lanka.

1186. Realeat Company (The). 1987. The 1987 Realeat survey of meat eating and vegetarianism [in Great Britain]. London. 19 p.

• **Summary:** This fourth consecutive study, conducted by Social Surveys (Gallup Poll) Ltd. is based on 3,027 interviews with people aged 16 and older. For the first time it looked at the incidence of vegetarianism among children. Roughly 1/9 of all children in the UK are vegetarians. For adults, health is still the main reason for cutting down on

meat consumption. Students still represent the largest group of vegetarians. Women are twice as likely as men to be non-meat eating. Children are more likely than adults not to eat meat, mainly because they find it unpalatable. Parental influence plays little part in this.

Trends in vegetarianism: Adults: Vegetarians now represent 3% of the adult population (1.3 million people), a growth of 11% over 1986 and 43% since 1984. Those avoiding red meat represent 3.6% of the adult population (1.6 million people), a rise of 16% over 1986 and 89% since 1984. The combined adult group of vegetarians and those avoiding red meat represents 2.9 million, 1 in 15. The total population that avoids red meat or is vegetarian is 4.3 million. 33% of the population claim to be “eating less meat”. Non-meat eating—the trend towards vegetarianism: The combined group of those who eat red meat rarely or not at all represents 6.6% of the adult population or 2.9 million people. The number of ABs (managerial and professional) who have become vegetarian has increased, and they now account for 3%.

Of the 33% of the population who are eating less meat, the dominant reasons for the change are health (13% in 1987 vs. 8.8% in 1985) and expense. 40% of women and 26% of men claim to be eating less meat in 1987. Children and vegetarianism: 11% of those who had children between 6 months and 16 years said that their child was vegetarian or beginning to avoid meat products in their meals. It seems clear that the children are deciding to avoid meat for themselves. The reasons for children avoiding meat/stopping eating it altogether include: ‘unpalatable’, 39.8% [50% of children in the 6-month to 4 year group dislike the taste or texture of meat]; dislike the thought of animals being killed, 17%; don’t like additives; difficult to chew; influenced by friends; Chernobyl radioactive pollution (in Kiev, Ukraine). Address: Gregory Sams, 2, Trevelyan Gardens, London NW10 3JY, England. Phone: 01-459-7354.

1187. Caton, Greg. 1987. Lumen and its future (Interview). *SoyaScan Notes*. Dec. 14. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Lumen was founded in Feb. 1986 and started production in October. Presently the company’s sales are about \$50,000 a month and production is about 15,000 lb. The best seller is Cajun Jerky (\$30,000/month). The company is growing rapidly since he just got three big new distributors: Tree of Life, Akin, and Balanced Foods. Lumen is doing a joint venture with MJ Exports in Bombay to build a Lumen plant in India. MJ will own 51%. Greg worked for years with ADM. He also owned Richland Foods in Fairland, Iowa, which sold flavored TVP that was flavored before being extruded. This greatly lowered the quality of the flavors. He found that it is much better to flavor after extrusion. This was a major innovation, giving improved flavor and texture.

He also reduces stachyose and raffinose by extracting them using a centrifuge from the flour or the already extruded piece. Galactosidase is the only enzyme that will hydrolyze both raffinose and stachyose. Coating and flavoring are his specialties. He makes the jerky for Al Jacobson’s Garden of Eatin’. It used to be made by a company in Los Angeles. Address: Louisiana.

1188. Archer Daniels Midland Co. 1987. Annual report. P.O. Box 1470, Decatur, IL 62525. 33 p.

• **Summary:** Net sales for 1987 were \$5,775 million, up 8% from 1986, and up 310% from 1978. Earnings for 1987 were \$265 million, up 10.8% from 1986. Assets totalled \$3,862 million, up 16.5% from 1986. “With the world population growing to over 5,000 million during 1987, and estimated to increase by 80 million a year for the near future, the global food business will continue to grow... In ADM’s Oilseed Processing Division, greater use of soy protein isolates in the production of commercial and retail seafood products was the leading contributor to continued growth for protein products. ADM continues to be the largest producer of specialty soy products. R&D facilities for soy protein products were relocated to Decatur [from Chicago] during the year.

“The British Arkady Co. Ltd. (in Manchester, England)... expanded its marketing of ingredients and prepared mixes to the baking industry. Direct Foods Ltd., a prime supplier of vegetarian foods throughout the UK, had a significant sales increase during the year, mainly due to new soy-related products having a high textured vegetable protein content using TVP. Vegetarian Feasts Ltd., a market leader in oven-ready frozen meals... added new burger forming machines. This company is participating in the growth and demand for vegetarian and health foods. In June, British Arkady purchased Societe Industrielle des Oléagineux, better known as S.I.O. This long established French company has a factory in Aras and offices in Paris. Its principal activities include the milling of full-fat and defatted soy flours, and the manufacture of specialty oils for the food industry.” Address: Decatur, Illinois.

1189. **Product Name:** [Soy Flour].

**Manufacturer’s Name:** A.D.M. Europort. Affiliate of Archer Daniels Midland Co. USA.

**Manufacturer’s Address:** Elbeweg 125, Europort Rd., 3198 LC Europort, Netherlands.

**Date of Introduction:** 1987.

**New Product–Documentation:** Soya Bluebook. 1987. p. 78.

1190. **Product Name:** [Lecithin].

**Manufacturer’s Name:** A.D.M. Europort. Affiliate of Archer Daniels Midland Co. USA.

**Manufacturer’s Address:** Elbeweg 125, Europort Rd.,

3198 LC Europoort, Netherlands.

**Date of Introduction:** 1987.

**New Product–Documentation:** *Soya Bluebook*. 1987. p. 69.

1191. **Product Name:** Soybean Oil, and Soybean Meal.

**Manufacturer's Name:** Archer Daniels Midland Co. (ADM).

**Manufacturer's Address:** Cameron, South Carolina.

**Date of Introduction:** 1987.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** *Soya Bluebook*. 1985 (p. 54). Continental Grain Co. is operating the soybean crushing plant at Cameron, South Carolina.

*Soya Bluebook*. 1986 (p. 57). Continental is still operating this plant at Cameron. Solvent crush capacity 1,000 metric tons/day. Soybean storage capacity 2,000,000 bu. 1988 (p. 77). Continental is still operating this plant at Cameron. Processing and storage capacity are both unchanged.

*Soya Bluebook*. 1989 (p. 54). Neither Continental, nor Central Soya nor ADM are shown as operating a soybean processing plant at Cameron, South Carolina. However ADM operated a plant at Kershaw, South Carolina. Ditto for the 1990 Bluebook.

Bullard. Everett. 2005. Nov. 29. Interview. Everett thinks Continental sold the plant (located at Highway 33 & Cemetery Rd.) to ADM in late 1987. ADM, which operated a plant in Kershaw, South Carolina, never operated their plant in Cameron; Everett thinks they bought it in order to shut it down and thus to get rid of excess processing capacity in South Carolina. Also, he thinks anti-trust law prevented ADM from operating it.

1192. **Product Name:** Soy Flour Mixes, Vegetarian Burger Mixes, and Arcadian Meal Makers.

**Manufacturer's Name:** British Arkady Co. Ltd. Affiliate of Archer Daniels Midland Co., USA.

**Manufacturer's Address:** Skerton Rd., Old Trafford, Manchester, M16 0NJ, England.

**Date of Introduction:** 1987.

**New Product–Documentation:** *Soya Bluebook*. 1987. p. 100.

1193. **Product Name:** Granose Vegetable Margarine (Dairy Free; Low in Salt).

**Manufacturer's Name:** Granose Foods Ltd. (Marketer-Distributor). Made in England by Eilers & Wheelers.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1987.

**Ingredients:** Soyabean oil (minimum 65%), vegetable oils partly hydrogenated, water, salt, emulsifiers, soya lecithin,

mono and di-glycerides extracted from palm oil, flavouring, citric acid, vitamin A, colour, beta-carotene, vitamin D (vegetable source).

**Wt/Vol., Packaging, Price:** 250 gm plastic tub.

**How Stored:** Refrigerated.

**Nutrition:** Per 100 gm.: Energy 750 kcal (calories), oils, partly hydrogenated, minimum 80 gm, polyunsaturates min. 36 gm–45%, saturates max. 16 gm–20%, salt max 1 gm.

**New Product–Documentation:** Form filled out and Label sent by Adrian Peck of Granose Foods Ltd. 1990. June 13. States that the product, made by Eilers & Wheelers, was introduced in 1987. “Soya” is not mentioned on front panel. Label. Green on ivory. “High in polyunsaturates. Low in saturates. Low in cholesterol. Contains no animal products. Lactose free. Low in sodium.”

1194. Navarro, Luis A. 1987. Trends in the production of soyabean (*Glycine max*) during the 1971-1985 period in Sri Lanka. Dept. of Agriculture, Division of Agricultural Economics and Policy, Diversified Agriculture Research Project, Royal Botanical Gardens, Peradeniya, Sri Lanka. \*

• **Summary:** In 1986 Sri Lanka imported 333.1 tonnes of soy oil, 15,499 tonnes of soybean meal, 267.2 tonnes of TVP, and 757.4 tonnes of soybeans. Address: Peradeniya, Sri Lanka.

1195. **Product Name:** [Lecithin].

**Manufacturer's Name:** Oelmuehlen (Thoerl) GmbH.

Affiliate of Archer Daniels Midland Co., Decatur, Illinois.

**Manufacturer's Address:** 1 Hafenstrasse 15, P.O. Box 901440, D-2100 Hamburg 90, West Germany.

**Date of Introduction:** 1987.

**New Product–Documentation:** *Soya Bluebook*. 1987. p. 68.

1196. **Product Name:** Honest to Goodness Soup. Make-in-the cup (Dry Mix) [Tomato, Onion, or Mulligatawny].

**Manufacturer's Name:** Realeat Company (The).

**Manufacturer's Address:** 2 Trevelyan Gardens, London NW10 3JY, England. Phone: 01-459-3401.

**Date of Introduction:** 1987.

**Ingredients:** Brown rice, miso and soy sauce powder, vegetable bouillon powder, and spices. Varietal ingredients include tomato, onion, curry, garlic, and celery salt.

**Wt/Vol., Packaging, Price:** 16 gm in nitrogen-flushed foil sachet.

**How Stored:** Shelf stable.

**Nutrition:** Per 15 gm dry: Protein 10%, carbohydrate 68%, vegetable fat 4%, calories 50.

**New Product–Documentation:** Letter from Gregory Sams. 1988. March 30. Leaflet, undated. “A Recipe for success.” Gives detailed product information. “A truly unique range of additive-free Instant Soups with Real Flavor. They are made only with natural ingredients and thickened with nourishing brown rice.”

1197. **Product Name:** VegeBurger, and VegeBanger (Frozen Meatless Burger and Sausage).

**Manufacturer's Name:** Realeat Company (The).

**Manufacturer's Address:** 2 Trevelyan Gardens, London NW10 3JY, England. Phone: 01-459-3401.

**Date of Introduction:** 1987.

**Wt/Vol., Packaging, Price:** Retail: 4 x 2 oz burger, or 10 x 1 oz banger (sausage). Catering: Various sizes and packs.

**How Stored:** Frozen.

**New Product–Documentation:** Letter from Gregory Sams. 1988. March 30. Leaflet, undated. "A Recipe for success." The frozen range (line) is marketed by Adams Marketing, 31 Bell St., Shaftesbury, Dorset, England. Phone: 0747-51561.

Talk with Kees Touw of ADM. 1991. Sept. 4. In the UK, British Arkady produces the Veggie Burger for a doctor, who is in his late '70s. The doctor developed the product based on TVP during the 1970s, he owns the name, and he licensed the rights to make the product to British Arkady, which pays him a royalty. The product is still made with TVP. Peter Fitch knows the whole story. It is not clear whether that product is different from the VegeBurger developed by Gregory Sams.

1198. **Product Name:** VegeMenu (for the Caterer).

**Manufacturer's Name:** Realeat Company (The).

**Manufacturer's Address:** 2 Trevelyan Gardens, London NW10 3JY, England. Phone: 01-459-3401.

**Date of Introduction:** 1987.

**New Product–Documentation:** Letter from Gregory Sams. 1988. March 30. Leaflet, undated. "A Recipe for success." VegeMenu, and the accompanying 36-page color recipe book, provide the basis for a wide range of meat-free and wholesome main course menu items. It is ideal for the caterer who is seeking to provide dishes more in keeping with today's changing consumer needs. VegeMenu comes in outers of either 3 or 6 x one kilo pack.

1199. **Product Name:** [Persoya, Soyasol, and F.C.B.S. {Full Fat Soy Flours}].

**Manufacturer's Name:** Societe Industrielle des Oleagineux (SIO).

**Manufacturer's Address:** Main Office: 30 Rue des Peupliers, 92000 Nanterre, France.

**Date of Introduction:** 1987.

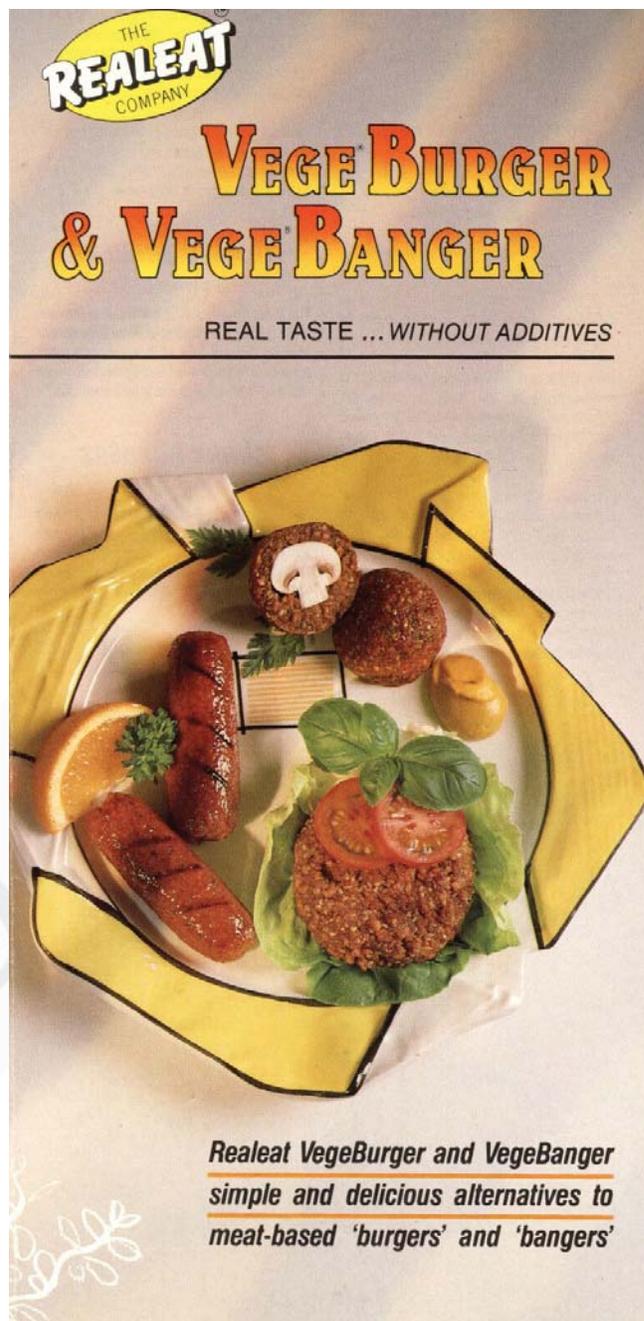
**New Product–Documentation:** Soya Bluebook. 1987. p. 76.

1200. **Product Name:** S&E Lankasoy Protein Rich Soya Meat.

**Manufacturer's Name:** Spices & Essences (Ceylon) Ltd. Forbes & Walker Group (Importer & Marketer).

**Manufacturer's Address:** S&E, 29 Braybrooke St., Colombo 2, Sri Lanka.

**Date of Introduction:** 1987.

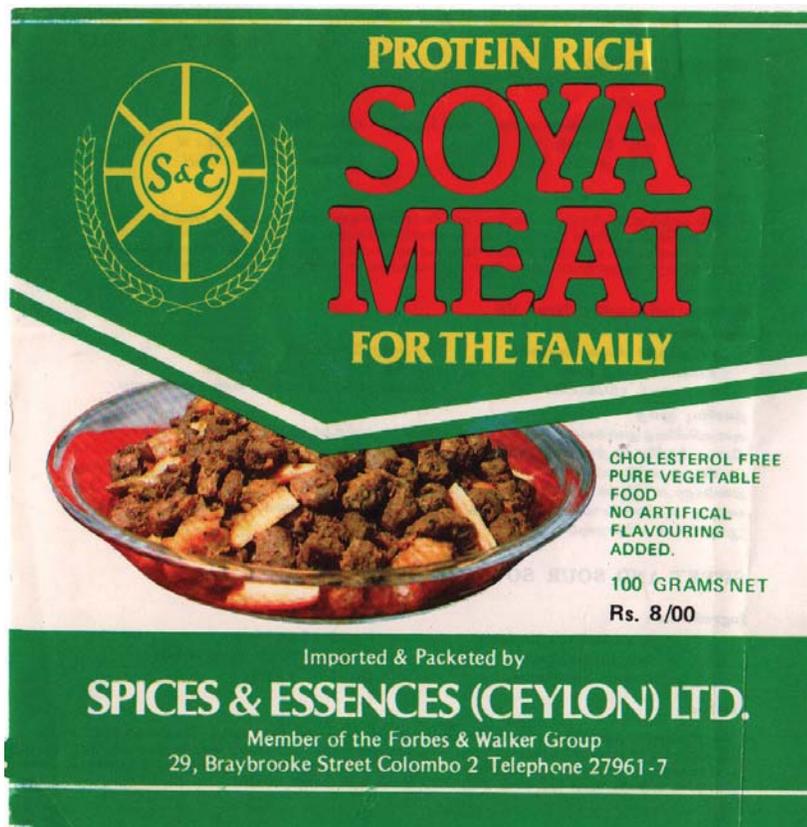


**Ingredients:** Soybeans, spices.

**Wt/Vol., Packaging, Price:** 100 gm retails for Rs. 8/00.

**How Stored:** Shelf stable.

**New Product–Documentation:** Label/Leaflet. 1987. 5.5 inches square. Green, red, yellow and black with photo of a dish of rehydrated TVP. "For the family. Cholesterol free. Pure vegetable food. No artificial flavouring added." Recipes for Soya Meat Curry, and Sweet and Sour Soyameat. Distributed by Darley Butler & Co. Ltd. "How to use Lankasoy Soya Meat. Soak in water for 15 minutes, adding a teaspoon of salt or vinegar. Drain well, add spices, chillie/curry powder and cook just as you would cook Beef or



Mutton. Cooking time 5 minutes.”

1201. Bates, Dorothy R. 1987. Kids can cook: Vegetarian recipes kitchen-tested by kids for kids. Summertown, Tennessee: The Book Publishing Co. 120 p. Illust. Index. 23 cm. Spiral bound.

• **Summary:** The index of this vegetarian cookbook contains listings for 4 tofu recipes and 1 miso recipe, plus definitions at the Ingredients sections of tofu, TVP (Texturized Vegetable Protein), tempeh, and miso. Dorothy Bates is the mother of Albert Bates, a lawyer at The Farm, and a patron of The Book Publishing Co. Address: Tennessee.

1202. Nichterlein, Karin. 1987. Huelsenfruechte [Legumes]. Bonn, Germany: AID (Auswertungs- und Informationsdienst fuer Ernaehrung, Landwirtschaft und Forsten). 20 p. Illust. 21 cm. [10 ref. Ger]

• **Summary:** The section on soybeans (p. 14-16) discusses soya oil, lecithin, soybean meal, soy protein concentrates, soya bread, low-fat soy flour, Sojamark (Soya meat), TVP, soya milk, tofu, soy sauce (shoyu, tamari), miso, tempeh, sufu (fermented tofu), natto, and soy sprouts. Address: Institut fuer Pflanzenbau und Pflanzenzuechtung I, Giessen, Germany.

1203. Ontario Soya-Bean Growers' Marketing Board. 1987. Soybeans: The original Canadian oilseed (Leaflet). Chatham,

Ontario, Canada. 4 panels each side. Each panel: 22 x 10 cm. Undated.

• **Summary:** Contents: Who we are. What we do: Research, market development, government relations, market information, advance payment program. Pricing. How soys are used (soybeans are crushed at plants in Toronto, Hamilton, and Windsor). Marketing channels.

“Established in 1949, the Ontario Soya-Bean Growers' Marketing Board is an elected group of farmers from across Ontario, that represents the specific interests of the province's soybean producers. The Board works with processors, grain elevators and the government to create a fair return to the grower for his soybean crop.

“The Board's office is located in Chatham, where it is surrounded by the five counties that produce 76% of Ontario's soybeans.” A map shows the soybean growing regions in Ontario. Address: Box 1199, Chatham, ONT N7M 5L8, Canada. Phone: 519-352-7730.

1204. Soy Protein Council. 1987. Soy protein products: Characteristics, nutritional aspects and utilization. Washington, DC. vii + 43 p. No index. 28 cm. [96 ref]

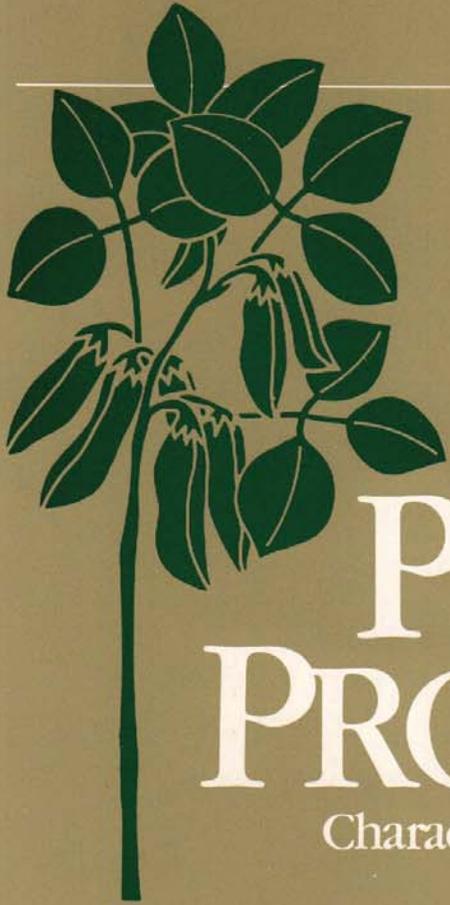
• **Summary:** See next page. Contents: Preface.

Introduction: Historical aspects. Importance of soy protein products. Definitions and methods of preparation. Protein quality and human nutrition. Health and soy protein. Functionality. Uses in food systems. Regulations regarding usage. Economics. Future considerations. Bibliography.

Provides an overview of the key benefits of soy protein products. The Soy Protein Council (named Food Protein Council from 1971-1981) is a trade association representing three processors of soy protein products: Archer Daniels Midland Co. (Decatur, Illinois), Cargill, Inc. (Minneapolis, Minnesota), and Central Soya Co. Inc. (Fort Wayne, Indiana). The Council acknowledges with gratitude comments received from the following specialists in this field: John Erdman, Lawrence A. Johnson, Irvin E. Liener, Edmund W. Lusas, Walter J. Wolf, Endre F. Sipos, and Keith J. Smith.

“The industry that produces soy protein products for human consumption has grown enormously since the late 1950s. Current production is about 1 billion [1,000,000,000] pounds of protein products for human consumption per year in the United States—or about 4-5 pounds per person.” This includes soy flours and grits. Address: 1255 Twenty-Third St., N.W., Washington, DC 20037. Phone: 202-467-6610.

1205. Rose, Richard. 1988. The U.S. soyfoods industry and market today and tomorrow (Interview). Conducted by William Shurtleff of Soyfoods Center, Jan. 6. 4 p.



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# SOY PROTEIN PRODUCTS

Characteristics, Nutritional Aspects  
and Utilization

**soy protein  
council**

FORMERLY FOOD PROTEIN COUNCIL 1971-1981

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• **Summary:** “President of Rose International in Petaluma, California (and formerly of Brightsong Light Foods), Richard Rose began making tofu and soymilk products in 1978. His forte is product development and marketing, which is the focus of his present company. He has been responsible for the development of over 75 commercial soyfood products.

“Shurtleff: What do you see as the most important events and trends in the soyfoods market during 1987?”

“Rose: First, the growth and marketing of Jofu, then the subsequent apparent leveling off or decline of sales or profits, although I am not sure of that. One source says that they have more demand for the product than they can handle. My understanding is that they were going to do a natural food Jofu and introduce it at the Natural Foods Expo at Philadelphia in October. Apparently it never happened; Tomsun didn’t even have a booth at the Expo.

“That ties into the inability that I see of soy yogurts to take hold in both the mass market and the natural foods market. I think there are good reasons for that. The difference between ice creams and non-dairy frozen desserts is substantial. There’s a large benefit for the consumer of non-dairy products. But that same range of difference does not exist between dairy and non-dairy yogurts. In fact, dairy yogurt is seen as a healthful food, low in cholesterol, fat, and often calories. So there is not as much benefit from eating the non-dairy product.

“Second, the continued domestication of production of aseptic soymilks by Westbrae, Great Eastern Sun, and Vitasoy.

“Third, the decline of sales and fortunes of Tofutti, linked to the decline in sales of non-dairy soy frozen desserts in general. I think Bob Tepper leaving Farm Foods was important. He’d been with them for a long time and has had a lot to do with the great progress they have made over the past eight years. That is quite a story. Farm Foods did things right and they had good luck as well. I’m really happy for them.

“Fourth, the increase and proliferation of soy cheeses. Last year Cemac and Galaxy got into the market in a big way. Soymage was the first truly non-dairy soy-based cheese containing no casein. I think what is more significant is large companies that have no other interest in soyfoods or natural foods are entering the industry. Galaxy went public in about August of 1987. I think their stock started at 5 and last I saw it was 10.25. They are very good at hype. They are to cheeses what Tofutti is to ice cream. I was watching some late night show on TV and their spokesperson Don King came out and began hyping Galaxy products (he had samples with him) against the insistence of the host! These larger companies see a new market and they go after it. But they really have no interest in or history with natural food or soyfoods. It’s a problem for the industry and a potentially dangerous trend. If people are going to make money in this

industry we need to make sure they do it fairly, without consumer deception, etc.

“Fifth, the increased legitimization of soyfoods in the mass market and in general. There is definitely growing interest. A few years ago tofu was snickered upon whereas now it’s more likely to stimulate enquiry and interest. That probably has a lot to do with Tofutti and tofu being recognized for special diets. Likewise, a similar growth of interest in soyfoods internationally, especially in Europe and Australia.

“Shurtleff: What do you think when you read that in a poll of the most hated foods in the USA, tofu was at the top of the list.

“Rose: I suspect they are right. I think that 95% of the Caucasian population does not buy tofu even occasionally.

“Shurtleff: Which products launched during 1987 did you feel were the best quality?”

“Rose: The Barat Bar is very good. In fact, I buy those, even though they are so darned expensive. You don’t get a sugar rush, there is no dairy, and they taste good.

“The ToChip, those corn chips, were good but I don’t think much has happened with it.

“There are more salad dressings out and they are getting better, and have better shelf life and packaging. Golden Soy and Nasoya come to mind first.

“Of the soy cheeses, I think they are all about the same in quality. I frankly consider them all a wash. I think the Soyco and the Cemac product are slightly better than the Soya Kaas. They all have casein. Our product FREE has no casein.

“Shurtleff: What major changes have taken place in our industry and market during the past ten years?”

“Rose: I think we have begun to develop our own individual identity, separate from the earlier Asian influence. That includes American equipment, American products, supplies, and suppliers. Instead of silken tofu, doufu-gan, and age, we have developed non-dairy frozen desserts, puddings, and salads. There is a great breadth of uniquely American products. In fact, an Americanization of all aspects of the industry.

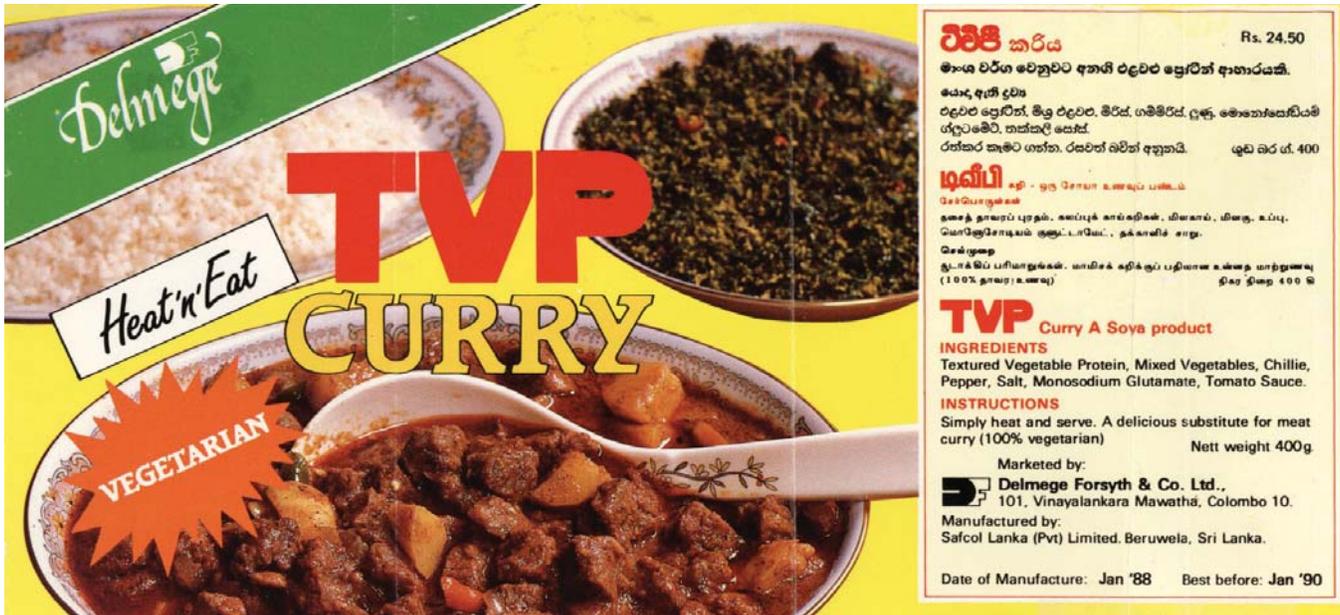
“Development of domestic processing equipment, such as Bean Machines has done, is an important trend.

“Shurtleff: What predictions would you make for the future.

“Rose: Growth in the use of aseptic tofu by consumers. Morinaga has a U.S. patent on the process of making tofu aseptically.

“More and better U.S. equipment, and the development of better processing methods.

“The use and recommendation of soyfoods in special diets by traditional groups like the AMA, dietitians, and perhaps even the government. I think eventually soyfoods (other than TVP) will be able to be used in government programs, such as school lunch programs. But that may take



a while.

“I still see a breadth and depth of new products. In breadth, I think we’ll see it in baked goods (brownies, cookies, muffins, breads) and confections (candies). Also refinement of current products. Many of the products that have been out for a while aren’t that great; they still need more improvement. But because they have been around for a while, people are less likely to improve them. But I think we will see, because of competition, improvement in current products. New products will tend to be more fully developed.

“Big Food will be getting into soyfoods more, probably to use tofu’s functionality. For example, replacing ricotta with tofu for nutrition and cost reasons. But up until now, I think its been too weird for them, and they are not sure how it relates to them and their mission. They are conservative and slow by nature. The market for tofu (not including second generation products) in 1987 is probably only \$70-90 million, which is still pretty small. They would probably want to see it 4-6 times that size before they make a big move. They are reluctant to do ‘missionary marketing.’ Then there is the perishability aspect of the product. I think Big Food will enter the industry with a product where perishability is less of a problem.

“At some point I think it will make a lot of sense to give tofu a national marketing identity, with regional manufacturers getting together and marketing the same brand and jointly funding national marketing efforts. The dairy companies do that with co-ops and with regional licensing, such as for making Popsicles or bottling soft drinks.

“I also think we’ll see an influx of new types of people into the industry, bringing with them sharp new ideas. Technical people and marketing people. Perhaps some great new processes or patents. Marketing ideas and product development.

“I think we’ll see a lot more use of soyfoods, such as tofu, in foodservice applications. That is really a great, untapped, fertile ground for soyfoods. The problem is, most of the people just don’t know what to do with it.

“Shurtleff: Imagine that you have just been hired by a major American food company and given a \$50 million budget and a research staff. They ask you to develop and market a line of at least three products. What would you do?

“Rose; I would probably do a line of salad dressings, a line of creamy soups, and a line of frozen entrees (such as lasagna), each using tofu and having no cholesterol. The tofu curds would replace ricotta or cheese. I might also do a line of baked goods (such as brownies and muffins), using tofu to replace eggs and milk. I’d also look seriously at a line of cholesterol-free foodservice items, something they could pop into a steam table or microwave and serve without any other preparations. Perhaps some nouvelle cuisine, or an Italian or Mexican dish, or a tofu-based imitation cheese or tofu sour cream or cream cheese. Anything that could replace a product that is currently high in fats and cholesterol so that the tofu product provided a clear alternative.” Address: President, Rose International, P.O. Box 2687, Petaluma, California 94953-2687. Phone: 707-778-7721.

1206. **Product Name:** TVP Curry.

**Manufacturer’s Name:** Delmege Forsyth & Co, Ltd. (Marketer). Made in Sri Lanka by Safcol Lanka (Pvt) Ltd. **Manufacturer’s Address:** Delemge: 101, Vinayalankara Mawatha, Colombo 10, Sri Lanka. Safcol: Beruwela, Sri Lanka.

**Date of Introduction:** 1988 January.

**Ingredients:** Textured vegetable protein, mixed vegetables, chillie [chili], pepper, salt, monosodium glutamate, tomato sauce.

**Wt/Vol., Packaging, Price:** 400 gm tin can with label. Retail for Rs. 24/50.

**How Stored:** Shelf stable, 12 month shelf life.

**New Product–Documentation:** See previous page. Label. 1988. Jan. 10.5 by 4 inches. Full color with brown, red, green, and orange on yellow. Photo shows a dish of curry flanked by dishes of white rice and topping. “Vegetarian. Heat ‘n Eat.” Form filled out by Jane Gleason. She called Delmenge on 14 March 1988. The TVP is imported in bulk by Delmenge from the USA and England, then packaged in Sri Lanka. Also importing TVP are Forbes & Walker, and McSoy Lanka.

1207. Albert, Lawrence. 1988. Global Foods tries to save Royal American Food Co. (Interview). *SoyaScan Notes*. Feb. 17. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Royal American filed for Chapter 11 reorganization / bankruptcy in May 1987. They had debts of \$1.4 million. Global Foods, the original manufacturer of many Royal American textured soy flour products, is now running the company out of its plant. Albert was appointed by the court to try to make the company work. They have stopped losing money and have paid back \$15,000 of the \$50,000 post debt. He wishes he had just let the company die and had pushed in Global products in place of the Royal American. He wanted the many people in their sales network. The future of his efforts to save Royal American does not look too promising. The bills are too high, unless the court will let him pay \$0.25 on the dollar. Their tofu failed because it was not a quality product. He is now shipping Globalite Tofu, which is a better product. It jells better, less soy flavor. He still has the mousses and was the original manufacturer. They were just a multi-level marketing company, not a manufacturer. He thinks they could have succeeded with better management. His company needs sales badly. His best sellers are his meals, which he sells in America. They are not exported. He founded Global Foods on 3 Jan. 1983. First product was Globalite meals that contain textured soy flour.

Note: Global Foods is located near ADM in Decatur, Illinois. Are they related? Address: Global Foods, 2881 Parkway Dr., Decatur, Illinois 62526.

1208. Newhouse, Sonia. 1988. Vegetarian Feasts, Direct Foods, soy ice cream, and the tofu industry in England (Interview). *SoyaScan Notes*. Feb. 25 and March 13. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In 1974 she was crippled with osteo-arthritis and was told by her doctor she would be in a wheel chair in a few years and spend the rest of her life there. She was a hearty meat eater. She visited Dr. Gordon Latto, a specialist in nutrition and president of the Vegetarian Society (now in his 70s and living at 4 Darby Rd., Caversham, Berkshire). He put her on a vegetarian diet, with no refined foods,

stimulants, or additives, plus cold showers each morning. “After about 3 days I began to feel better. And amazingly after about 10 days I was able to stand up straight without pain or stiffness in my joints.” She sold her guesthouse and started a firm in London named Vegetarian Feasts Ltd. specializing in vegetarian frozen meals without additives. The first products went on the market in March 1984. The media took up her story in a big way. In September 1984 she introduced two entrees with TVP as the major ingredient: Chile Sin Carne and Stroganoff. “We stole so much freezer space that all the big boys decided to jump into the vegetarian field, but they didn’t do it with whole foods.” Her pioneering products did so well in supermarkets that many health food shops in their “frozen food cabinets” first began to carry them. By June 1986 (see Financial Guardian, June 20; Family Circle, UK ed., Jan. 1986) she had an annual turnover in excess of £500,000 and a staff of 25, producing 6,000 microwaveable units a day and selling in major food chains (Safeways, Co-op supermarkets, Holland & Barrett health food stores, Europe, etc.).

It is well known that 30% of British university students are vegetarian, so the catering side of the vegetarian industry is enormous. But in 1986 about 75% of her products were sold through retail outlets. The majority were sold in supermarkets rather than health food shops. Realeat came out with a set of meals after hers, but they were discontinued in the supermarkets. It is not clear whether or not they contained soy protein.

In February 1986 she sold the company to British Arkady (owned by ADM), which wanted to get into the frozen foods business; about a year before they had purchased Direct Foods (in Petersfield, Hampshire), which made all dry foods, including some soy products. Direct Foods was started by a husband and wife who were farmers and who didn’t like selling their animals to slaughter. They bought TVP from a manufacturer and sold it direct to health food shops. One of their products was Sosmix; you add water and make a sort of spaghetti sauce.

About 20 years ago Sonia developed a tofu ice cream (no isolates) for her daughter who was allergic to cow’s milk protein. She still feels this product has commercial potential.

She thinks the four largest tofu manufacturers in England, in descending order of size, are Paul’s Tofu, Dragon & Phoenix, Regular Tofu Co., and Cauldron Foods. Cauldron might be biggest; they put out the most finished products. Dragon and Phoenix, serves mostly the Chinese quarter of London. Sonia has been in their plant. They breed fish in tanks in their tofu plant, which is walled with red tile.

Update: Letter from Sonia Newhouse. 1989. April 3. She is now at the Ultimate Life Center, Inc., 3760 Sports Arena Boulevard, Suite 10, San Diego, California 92110. Phone (619) 224-0608. She and her friend, Rosemary Feldd, are in the process of opening “a metaphysical / new age bookstore here.” “Long term we both have the same plans to open a

residential holistic center where alternative therapies will be available.” Address: 27 Carlton Rd., East Sheen, London SW14 7RJ. Phone: 01-392-1852.

1209. *Grocer (The) (England)*. 1988. 4.3m [million] consumers are avoiding red meat. Feb. 27. p. 64.

• **Summary:** The 1987 Realeat survey of meat and vegetarianism revealed that 4.3 million of the UK population are vegetarian or are consciously avoiding red meat. Almost one third of these are aged under 16. Perhaps more surprisingly, 18 million consumers claim to be eating less red meat, with health most commonly cited as the principal reason. Gregory Sams opened Britain’s first macrobiotic healthfood restaurant in London in swinging 1967. The Vegeburger dates from 1982. The frozen ready formed burgers have been better received in the grocery trade than the dry mix. Realeat’s frozen lines are marketed by Vincent Adams of Adams Marketing. He says: “Vegeburgers are now the fastest selling meat free burgers. I estimate the frozen meat free burger market to be around £3 million to £4 million in value and the frozen Vegeburger has nearly half of this figure.” There are also Cheese Vegeburgers and a soup which retails for around 20p per sachet.

1210. Archer Daniels Midland Co. 1988. Second quarter report to stockholders. Box 1470, Decatur, IL 62525. 8 p.

• **Summary:** On 19 Jan. 1988 ADM common stock began trading on the Tokyo Stock Exchange. ADM was the 62nd U.S. company and the 90th foreign company accorded listing privileges by the Tokyo Exchange. Tracing its history to the establishment of the Tokyo Stock Exchange Co., Ltd. in 1878, the Tokyo Stock Exchange in its present form was founded in 1949. It is now one of the most active and influential markets in the financial world.

ADM is now actively developing degradable plastic bags from corn starch. Address: Decatur, Illinois.

1211. *Soyanews (Sri Lanka)*. 1988. Consumers prefer processed soya foods. 10(1):1-2. Jan/March.

• **Summary:** Jane E. Gleason and S.M.A. Weliwita of International Soybean Program, University of Illinois (USA) and the Soybean Food Research Centre, Peradeniya (Sri Lanka) are convinced that the promotion of pre-processed soyafoods should replace the home utilization of whole soyabeans if the soyafoods industry is to make progress in Sri Lanka. They came to this conclusion after a survey of the home and village level Soybean Utilization Training Program, which has been in operation since 1978. Even though the program had conducted 3668 training sessions attended by 76,363 trainees, mostly housewives, it was found that the utilization of soyabeans in local cuisine was negligible. Several reasons have been adduced for this, but it would appear that the main barrier to greater soya consumption is that it is not available in processed forms

acceptable to consumers.

To assess the market potential for pre-processed soya foods, a soya foods marketing experiment has been initiated in a village near Peradeniya. A single family in this village has been marketing a variety of soya-foods. The six best selling products were coffee, Kola Kenda, chilli snacks, sweet snacks, fried nuts, and dried tempeh, in that order. The price per unit of common foods in Sri Lanka is as follows (in rupiahs): Soyabean, 0.04; ground nut, 0.05; cowpea, 0.07; green gram, 0.07; dried fish (fat poor), 0.11; TVP, 0.16; lean beef, 0.16; chicken, 0.21. In a survey on what constrains soya consumption the top 5 answers were, in order: Unreliable supply of soya, 23 respondents; odd flavor, 22; lack of preparation knowledge, 18; difficult to prepare, 14; unaware of benefits, 10.

1212. Miller, John; Ledur Brito, Luiz A. 1988. SANBRA, SAMRIG, and Soybean Crushing in Brazil (Interview). *SoyaScan Notes*. May 13. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** SANBRA and SAMRIG are two closely related companies in Brazil, often collectively known as SANBRA. Their main activities are oilseed crushing (at 5 plants, the biggest of which at Ponto Grosso has 3,000 tonnes/day capacity), oil refining, production of finished oil products (such as margarine, shortening, mayonnaise), and exporting. Their total sales in Brazil are about \$1,000 million dollars a year. Both companies have the same management; the various entities are largely for tax and legal purposes. Both are part of the multinational commodities group Bunge and Born, which is a family owned group with many independent companies worldwide. Actually the Bunge family left the group many years ago. The companies are not tied in to one central organization but are all owned by the same people. The company keeps a low profile, and even more since the famous Born kidnapping and ransom case in Argentina.

Brazil’s soybean crushing industry has Ceval as the largest crusher (they have only been crushing for several years, but plan to crush 2 million tonnes in 1988), followed by SANBRA and Cargill, which are about equal in size. SANBRA has about 33% of the Brazilian margarine market.

SANBRA started in Brazil about 50-60 years ago in cottonseed trading and processing. In about 1957-58 SAMRIG started its first soybean crushing plant in Rio Grande do Sul, Brazil’s southernmost state. The company then began to play a pioneering role in getting Brazil involved with soybeans. They encouraged farmers to start growing beans because the capacity of their plant (220 tonnes/day) was more than the total soybean production in that state. As a true multinational company, SANBRA could see the success of the soybean worldwide, which gave them confidence in its future in Brazil. Historically, soybeans have expanded steadily from south to north in Brazil. In about 1973 SANBRA built the first big soybean crushing plant in

the state of Parana, city of Ponto Grosso. Cargill, Anderson-Clayton, and Continental Grain Co. soon followed suit in this same strategic location.

SANBRA has also been a leader in soy proteins in Brazil. In late 1969 in RGS they started a modern soy protein products plant that began by making isolates, then later expanded into concentrates, and textured soy flour. This is the only plant in Brazil to make isolates and concentrates. Many companies make textured soy flour (TVP). SANBRA also produces various soy lecithin products. The products are sold in Brazil and also exported. This business has grown a lot.

ITAL does basic research, with not as much emphasis on applying that research. There is not a strong link between them and industry. They also do some training. Address: SANBRA, Centro Empresario de Sao Paulo, Av. Maria Coelho Aguiar, 215 Bloco D, 5\* Andar, Sao Paulo—CEP 05804—Brazil. Phone: 545-5459.

1213. Andreas, Dwayne O. 1988. The dilemma of protectionism. *International Agriculture Newsletter (Univ. of Illinois)*. May. p. 1-2.

• **Summary:** If a history of the grain industry in the United States were written today, some people might characterize the period from 1979 to 1982 as the golden age of agricultural exports, never to be obtained again. Before 1979, a combination of events had been at work to enhance the competitiveness and availability of U.S. exports. The stimuli for the growth of world export markets were in part climatological and in part institutional. Shortfalls due to weather forced several countries with centrally controlled economies to import large quantities of grain and food. At the same time, a move away from the gold standard and the floating of the U.S. dollar against world currencies weakened the dollar and enhanced the competitive positions of U.S. exports. These factors coincided with dramatic increases in the price of petroleum, followed by rapid inflation and a pronounced increase in lending to many developing countries. This combination of events induced many countries to produce for the lucrative export market.

Production increased as world prices for commodities climbed higher and higher. Farm support prices in the United States also rose, a move that, in retrospect, many would deem flawed. The price supports not only provided an attractive safety net for U.S. farmers, but also insured sharp production increases in many areas of the world. With U.S. support levels as a backstop, world production and export subsidies proliferated into the 1980s—a proliferation that would send the United States into an extended period of export retrenchment.

For the past several years, U.S. agricultural policy has been a battleground over burdensome grain stocks, a strained—if not broken—budget, and subsidy levels in competing countries that threaten to escalate trade

competition into trade war. Address: Chairman, ADM, Decatur, Illinois.

1214. Haumann, Barbara F.; Baldwin, A.R. 1988. Feature. Update: Fats and oils industry changes. *J. of the American Oil Chemists' Society* 65(5):702-04, 706, 708, 710-13. May. • **Summary:** Dramatic changes have occurred in the world's fats and oils industry during the past 25 years. U.S. soybeans, the major factor in world fats and oils trade in 1961, have encountered increasing competition from soybeans produced in South America as well as from palm oil, sunflowerseed and rapeseed. U.S. soybean dominance of world oilseed trade during the 1950s and 1960s began to crack in the 1970s. U.S. embargoes on soybean exports in 1973 and 1980 led Europeans, the Soviets and the Japanese to look for alternate sources of supply. They found Brazil and Argentina willing to learn how to grow soybeans for the export market. Ohio State University researcher Norman Rask has estimated total costs of producing a bushel of soybeans at \$6.62 in the U.S., \$5.39 in Brazil and \$4.06 in Argentina.

In the world soybean market, Brazil's share of international trade has grown from 3% in 1981/82 to 14% in 1984/85; in the same time span, Argentina's market share rose from 6% to 13%. Meanwhile, the U.S. share declined from 82% to 65%. In world soybean oil markets, Argentina's share has grown from 3% in 1981/82 to 14% in 1984/85. Brazil's share has increased from 24% to 27%; the U.S. share has fallen from 27% to 20%. U.S. soybean growing area peaked in 1980 at 70 million acres. In recent years, it has declined, with only 56.4 million acres harvested in 1987. U.S. soybean accounted for 65.9% of all world oilseed trade volume in 1979/80. By 1986/87, its share had dropped to 55%. The 1982 Census of Manufactures counted 243 vegetable oil mills operating in the U.S. in 1982. Of these, soybean oil mills had increased to 137 establishments, versus 121 in 1977.

The U.S. Food and Drug Administration (FDA) in 1985 ruled that low erucic acid rapeseed oil could be used in food products in the U.S. The first company to act on this was Procter & Gamble, which in 1986 reformulated its Puritan cooking oil to contain 100% canola oil. The phenomenal increase in corn oil production has been due to enzymatic processes for high fructose corn syrup and a gas tax subsidy on fuel alcohol. Consolidation, mergers, buyouts, and restructurings have led to increasing concentration of capacity in the hands of a few international companies whose operations range from seed cultivation through shipping and export to complete processing. This has led to fewer locations that process larger quantities of oilseeds.

U.S. based soybean processors are expanding their foreign investments in an attempt to escape relatively high U.S. soybean prices as well as to circumvent trade barriers. These include Archer Daniels Midland Co. (ADM), Bunge, Cargill, and Continental Grain. Since 1982, ADM also has

held a 45% interest in Alfred C. Toepfer International, a large commodities trading firm with headquarters in Hamburg, West Germany. In 1984, a National Institutes of Health panel recommended that Americans limit their cholesterol intake to less than 300 mg/day, fat intake to 30% of total calories in their diet, saturated fat intake to less than 10% of calories, and polyunsaturated fat intake to a maximum of 10% of calories.

There are a number of possible developments to watch during the next 20 years, including: Soybeans with low or zero linolenic acid; soybeans with higher yields (possibly hybrids) with broader adaptability to increase overall production; increased consolidation of oilseed processing. As world markets for oilseeds and oilseed products increase, market shares for soybeans and soybean products will decline. Address: JAOCS.

1215. Grain Processing Corp. 1988. Sale of protein business to ADM (News release). 1600 Oregon St., Muscatine, IA 52761. 1 p. June 30.

• **Summary:** The business was sold to ADM on 23 June 1988. "Grain Processing (GPC), Muscatine, Iowa, a U.S. corn wet miller, has announced the sale of its soy protein business to Archer Daniels Midland Company (ADM), Decatur, Illinois, on June 23, 1988. The sale included GPC's soy isolate technology, patents, trademarks, and product inventory. Archer Daniels Midland Company will transfer production of these soy products to their manufacturing facilities in Decatur, Illinois, as soon as possible.

"Grain Processing Corporation continues to be a major manufacture and worldwide marketer of grain neutral spirits, unmodified and modified corn starches, MALTRIN maltodextrins, corn syrup solids and feed recovery products." Address: Muscatine, Iowa. Phone: 319-264-4265.

1216. Golbitz, Peter. 1988. Soybean prices rise sharply. *Soya Newsletter (Bar Harbor, Maine)*. May/June. p. 1, 12-13.

• **Summary:** Amid the possibly the worst drought to hit America since the Dust Bowl years, prices for soybeans have risen from \$5.30 per bushel last November to just under \$10.00 per bushel now, with prices have reached a high of nearly \$11.00 in June. The recent price increases are attributable directly to the drought; and, a greatly reduced soybean supply, which resulted from increased exports due to a cheaper dollar overseas. History has shown that soybean prices don't have much of an impact on food prices in general. "In 1983, when soybean prices increased 37% from the prior year, food price inflation increased about 1%. Beef prices were up a mere 0.8% and pork prices actually decreased by 1.3%. The fact is, most of the costs food manufacturers incur are related to marketing. Farm products represent only 20% of the total price of food."

Archer Daniels Midland, Cargill, and Central Soya have all raised prices for their soy flour and soy concentrate

products by 20% to 30% over the past few months. Of all the food categories affected, the rising price of soybeans may have a more pronounced effect on soyfood products than any other. The effect of rising prices will be felt the greatest in the Oriental markets, where tofu prices have traditionally run 40% to 50% lower than in the supermarkets due to greater competition. Address: Soyatech, Bar Harbor, Maine.

1217. *J. of the American Oil Chemists' Society*. 1988. Plant closing [ADM plant in West Germany]. 65(6):856. June.

• **Summary:** "ADM Oelmuehlen GmbH, a subsidiary of the Archer Daniels Midland Co. (ADM), has announced it will close its Hamburg, West Germany, oil mill by mid-1988. The plant has been unprofitable primarily because it is not located directly on the seaport." ADM's Hamburg facility has processed approximately 800,000 tonnes of soybeans and 400,000 tonnes of rapeseed annually. It was one of the mills ADM purchased from the Unilever group in 1986. ADM's Spycyk mill on the lower Rhine will continue to operate.

1218. Peluso, Michael R. 1988. The nutritional value of soy. *Health World (Burlingame, California)* 2(4):26-28. May/June.

• **Summary:** This introductory article discusses whole soybeans, soy flour, soy protein products (isolates, spun fibers, TVP), soy milk, soy cheese (tofu), tempeh, miso, and soy sauce. Table I shows the composition of most of these is given. The author is especially interested in soy oil as a good source of vitamin E and of the essential fatty acids, linoleic and alpha linolenic acids. He is critical of the hydrogenation process. Table II gives a nutritive comparison of soy oil and selected food fats. Table III gives a nutritive comparison of soy foods and selected animal foods. Address: P.O. Box 606, Occidental, California 95465.

1219. *Vegan (The) (England)*. 1988. Pass it on! Haldane Foods. Summer. p. 17.

• **Summary:** "Haldane Foods' Tofeata Tofu—one of the best around in my opinion—is currently being sold with an excellent free recipe leaflet. With the exception of honey in a few cases, all 20 recipes are vegan. If you're a regular user of this brand, keep any spare copies and pass them on to friends.

"The same company has a new range of ready-to-mix meals called 'Easy Cuisine' comprising: Vegetable Curry & Brown Rice Mix, Vegetable Goulash & Potato Mix, Spaghetti Vegetable Bolognese Mix, Vegetable Ragout & Dumpling Mix, Vegetable Cottage Pie Mix, and Vegetable Burger & Couscous Mix. All are quick and easy to prepare and very useful to have in the larder. They provide enough for one generous serving, but by using some of the recipe ideas on the back of the packets would easily stretch to two."

Note: A new Vegetable & Tofu Burger from Cauldron Foods is also mentioned.

1220. Bailey, Simon. 1988. Soya-based products. *Natural Choice*. Aug. 15.

• **Summary:** “The food of the future. The soya bean is a protein-packed food which is increasingly used as a dairy or food substitute in today’s search for a healthier diet.” Discusses soya milk, dairy free desserts, tofu, tofu-based foods, soya flour, soya sprouts, tempeh, soya sauce, miso, and high-tech soya foods including TVP and soya protein isolates. Address: 138 Randolph Ave., London W9 1PG, England. Phone: 01-289-7364.

1221. Steffens, Ken. 1988. Farmland, Far-Mar-Co., and PMS Foods, Inc. (Interview). *SoyaScan Notes*. Aug. 22. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Far-Mar-Co merged with Farmland in the late 1970s. Farmland then started losing money in a big way, so they wanted to divest some of their assets and get out of the business of making TVP. So three of the personnel bought Far-Mar-Co in 1983 in a leveraged buyout. The new company was called PMS Foods Inc., standing for Parke, Major and Shoup. They are still in Hutchinson, Kansas, making TVP. Farmland is a mere shadow of its former self, a manufacturer in Kansas City.

PMS paid ADM a licensing fee to make TVP. It goes for another 3 years. Four companies made TVP: ADM, PMS, Cargill, and Central Soya (in that order of size). The latter three all license the process from ADM. Ken, who worked for Ralston, says that Ralston is also named on the original patent and they get lots of licensing money. They litigated against all the producers of TVP. There were three different rights: process, chemical, and one other. ADM, Ralston, and Staley were co-holders of the patent—not just ADM. Ralston is no longer in the business.

Update. 1998. April. PMS Foods, Inc. is listed in the 1998 Soya Bluebook Plus on p. 192. Location: 2701 E. 11th, P.O. Box 1099, Hutchinson, Kansas 67504-1099. Phone: 316-663-5711. Fax: 316-663-7195. e-mail: sales@pmsfoods.com. Internet: www.pmsfoods.com. Contact: Derek Park, President. Plant manager: Floyd Shoup. Facility: Extrusion, served by rail & truck. Edible products: Meat analogs, textured soy flour. Address: PMS Foods, Inc., 2701 East 11th St., Hutchinson, Kansas 67501. Phone: 316-663-5711 (Oct. 1995).

1222. Archer Daniels Midland Co. 1988. Annual report. P.O. Box 1470, Decatur, IL 62525. 33 p.

• **Summary:** Net sales for 1988 were \$6,798 million, up 17.7% over 1987. Earnings for 1987 were \$353 million, up 33% over 1987. The British Arkady Co. Ltd.: During the year, Haldane Foods Ltd. was purchased. This company is similar to Direct Foods Ltd., supplying the health food market.

Note: On 31 Dec. 1987 ADM acquired the rest of

Arkady Holdings Ltd. so that it now owned 100%. Both dates (15 Jan. 1973 and 31 Dec. 1987) were confirmed by Dick Burket of ADM on 25 April 1991. Arkady Holdings Ltd. is the important company because it is the parent company for all of the different Arkady companies such as the Haldane Group, etc. Address: Decatur, Illinois.

1223. **Product Name:** Unisoy Carob & Banana Organic Drink.

**Manufacturer’s Name:** Unisoy Milk ‘n’ By-Products Ltd.  
**Manufacturer’s Address:** Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430-6329.

**Date of Introduction:** 1988 August.

**New Product–Documentation:** Talk with Neil Rabheru of Unisoy. 1990. July 2. Followed by letter (fax) of July 9. This product was launched in Aug. 1988. “It was and probably still is the only organic soya drink to contain pure carob syrup; the other products on the market still use carob powder.”

1224. **Product Name:** Granose Soya Yogert (Soy milk Yoghurt) [Peach Melba, Blackcurrant & Apple, Apricot, and Strawberry].

**Manufacturer’s Name:** Granose Foods Ltd. (Marketer). Made in southern England by Bridge Farm Dairies. Made since late 1990 in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1988 September.

**Ingredients:** Peach melba: Soya milk (Water, dehulled soya beans, sea salt), Mauritian raw cane sugar, peaches, raspberries, stabilisers, maize starch, guar gum, pectin, Bulgarian cultures, natural flavouring.

**Wt/Vol., Packaging, Price:** 125 gm plastic cup with foil lid.

**How Stored:** Refrigerated.

**Nutrition:** Per 100 gm.: Energy 73 Kcal (calories) or 288 k.J., protein 3.0 gm, carbohydrate 11.45 gm, fat 1.8 gm, cholesterol 0.0 gm.

**New Product–Documentation:** The Vegan. 1988. Summer. p. 16. The product launch has been delayed until early July by a change of name—from Soya Yogart—following a challenge from a competitor. A black-and-white photo shows the label of Granose Soya Yogart.

Form filled out and four Labels (cups & tops) sent by Granose Foods Ltd. 1990. June 13. States that the product (spelled Yogert), made by Bridge Farm Dairies, was introduced in Sept. 1988. It has never been made by DE-VAU-GE. It is Ultra Heat Treated The shelf life is 15 weeks. The product is sold mainly to the health food trade. It now comes in the four flavors shown above. A color illustration on the foil lid shows the main fruit used in a white square with a blue border against a pastel background. The name of the fruit is written along the bottom of the square. A “Best



before” date is stamped atop each lid. The front of the cup contains a similar but more elaborate drawing. “Best served chilled.”

Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 4 and 8. Granose Soya Yogert was made by Genice starting in late 1990 in 4 flavors—peach melba, strawberry, apricot, and blackcurrant & apple. Granose became part of the Haldane Foods Group in Jan. 1991.

1225. *Cedar Rapids Gazette (Iowa)*. 1988. Deaths: Joseph M. Sinaiko. Oct. 4.

• **Summary:** Joseph M. Sinaiko, age 97, of 3322 Terry Dr., SE, died on Oct. 3, early Monday morning, at Mercy

Medical Center, following a long illness. He was born on 4 March 1891 in Minsk, Russia. He married Freda Fine on 8 Feb. 1922. They later divorced. Then he married Janet Epstein in 1958 at New York City. She died in 1985.

In 1921 he moved from Madison, Wisconsin, to Cedar Rapids, Iowa, where he founded the Iowa Milling Company, “a general feed mill which later became one of the first soybean processing plants in the country.” The company, of which he was president, was located at 411 Sixth St. NE; in 1967 it was sold to Cargill.

In the early 1960s Mr. Sinaiko also founded Corn Starch and Syrup Co., a wet corn milling plant; in 1967 it was sold to Archer-Daniels-Midland Co.

His memberships in many organizations are listed. He is survived by: Three daughters—Arlene Oberndorf of Los Altos, California; Nadine Cole of Palo Alto, California, and Sally Dogon of Wellesley Hills, Massachusetts; a son, William Sinaiko, of Marina Del Rey, California; a sister, Leila Shapiro, of Hollywood, Florida; nine grandchildren and two great-grandchildren.

Memorial services will be at 11 a.m. Thursday, at Temple Judah, by Rabbi Edward Chesman of Temple Judah and Rabbi David Shapiro of Hollywood, Florida. There will be no visitation at the funeral home. A family prayer and graveside service will be held at 11:30 a.m. Friday in Forest Hill Cemetery, Madison, Wisconsin, by Rabbi David Shapiro. Memorial donations may be made to a charity of the donor’s choice.

A small portrait photo shows Joe Sinaiko at an advanced age.

1226. Bailey, Simon. 1988. Re: New developments with soyfoods in the UK: British Arkady, Haldane, Realeat, and The Regular Tofu Co. Letter to William Shurtleff at Soyfoods Center, Oct. 10. 2 p. Handwritten with signature on letterhead.

• **Summary:** In Feb. 1988 Haldane was acquired by British Arkady’s Health Food Division. Brian Welsby and Peter Fitch are joint managing directors. Haldane brings in the Hera, Realeat, and Direct Foods lines. Brian Welsby is the key man at Haldane.

The Realeat Company, maker of the VegeBurger and Vegebanger, formerly owned by Gregory Sams, no longer exists. In the summer of 1988 Haldane acquired the Realeat brand. Gregory Sams retains interest in the company, but purely as a consultant, without controlling interest. The Regular Tofu Co. is now also part of Haldane Foods. John Holt, the founder of RTC, is no longer involved. Address: 138 Randolph Ave., London W9 1PG, England. Phone: 01-289-7364.

1227. Mrkvicka, Mike. 1988. Ag industry pioneer was quiet giant: C.R.’s [Cedar Rapids] soybean, corn processing industry begun by Joe Sinaiko. *Cedar Rapids Gazette (Iowa)*.

Oct. 16. Sunday.

• **Summary:** This is a long obituary of Joe Sinaiko, who died on Oct. 3 at age 97. He was a pioneer in the soybean and corn processing industries. Yet praise and public attention made him uncomfortable, so he avoided the limelight. Yet when he died his remarkable achievements and contributions were largely unknown, even in Cedar Rapids where he lived most of his life.

A pioneer in the soybean industry, he began processing soybeans in 1928 at his plant at 411 Sixth St. NE.

His family and friends remember how he built up his business traveling door-to-door in rural Iowa, encouraging farmers to grow soybeans and explaining to them how best to do so. Then he'd buy the beans, process them into oil and meal, go back to the farmers, and persuade them to buy his soybean meal as a livestock feed ingredient. The farmers thought he was crazy at first, but they later became his best customers.

He was also a major player in corn processing in Cedar Rapids, where he started the Corn Starch and Syrup Co. ADM and Cargill would not be so important in Cedar Rapids today were it not for Joe Sinaiko.

Discusses his birth in Russia and immigration to the USA where his family settled in Madison, Wisconsin. Speaking no English, he entered school for the first time in his life, entering the fifth grade. His first teacher gave him English lessons after class. He later spoke fondly of her and the profound impact she had on his life.

Six years later he entered the nearby University of Wisconsin—but he had to negotiate. Using skills that served him well in later life, he persuaded the bursar to delay payment of the \$30 tuition until the next summer, when he could earn the money working at his father's feed business. After two years of college, Joe quit to help support the family by delivering hay and oats for his father's store. In 1917 he joined the army and spent World War I in Texas. He caught influenza during the deadly epidemic of 1918, spent months in the hospital, received an honorable discharge, and considered himself lucky to survive.

Returning to Madison, he soon longed to get into business for himself. Cedar Rapids seemed like an excellent location. In the early 1960s [sic, 2 Dec. 1957] Joe granted a rare interview, published in the Cedar Rapids Gazette, in which he recalled: "I wanted a location where railroad facilities were more adapted to milling. In 1921 I found Cedar Rapids was well suited for both buying grain and shipping. So I moved."

In Cedar Rapids, his first job was delivering hay and oats to stables. Within four years, however, he had negotiated the purchase of the old Jackson Milling Co., a run-down six-story building on Sixth Street NE. He paid no money down—another tribute to his negotiating skills.

He renamed it Iowa Milling Co. and, willing to work hard, began to run it as a one-man, hand-to-mouth operation.

He soon developed a reputation for honesty and was able to convince farmers that they should wait a week to be paid for their grain—long enough for him to mill it, sell it, and pay them back.

In 1928 Sinaiko began processing soybeans—after learning from a Quaker Oats salesman that a few farmers in Illinois had planted the crop. He began by purchasing a few hundred bushels. The A.E. Staley Manufacturing Co. was already processing soybeans on a small scale in Decatur, Illinois.

Then came the stock market crash of 1929 and the Great Depression of the 1930s. Sinaiko's mill barely survived. His creditors pressed him to declare bankruptcy, but again he negotiated his way out. They were terribly hard times. He even tried peddling a soap named Royal Gold, made from soybean oil. Then, in the early 1930s, the soybean producing and processing industries started to grow. Sinaiko was well positioned to take advantage of this growth, and before long his Iowa Milling Co. was thriving, selling soybean meal for both livestock feeds and human foods.

Then in 1941 [sic, June 1944] he decided to sell the company. He was unhappy with the excessive government regulation of his business. So Cargill bought him out that year. But as soon as he sold his company, Sinaiko realized he had made a mistake. He deeply regretted his decision.

Joe returned to the milling business by building two smaller mills in Fairfield, Iowa, and Washington, Iowa. But he still longed to get Iowa Milling Co. back. After World War II, he saw his chance. Cargill agreed to trade Iowa Milling Co. for the two plants in Fairfield and Washington. Sinaiko quickly agreed to the deal.

He was also developing plants outside of Iowa—in Springfield and Decatur, Illinois; Norwalk, California; and Minneapolis, Minnesota. He and his close relatives managed these businesses.

Sinaiko was keenly interested in new technologies that could make his mills more efficient. In 1951 he installed new solvent processing equipment for his soybeans at the Iowa Milling Co.

By the 1960s, his interest in new technologies led him into the field of wet corn milling. In 1964 he founded the Corn Starch and Syrup Co. and began construction of a large and very modern plant in Cedar Rapids. Competing corn processors scoffed at his audacity. When his plant began production in 1965, the competitors cut their prices for corn starch and syrup by 50%. Sinaiko was forced to follow suit. But his plant was so efficient that he could make a profit even at that low price—a remarkable achievement. His competitors could not. Cargill, the agribusiness giant, looking for a way to enter the wet corn milling industry, offered Sinaiko a deal he couldn't refuse. In 1967 Cargill purchased the Corn Starch and Syrup Co. and (for the second time) the Iowa Milling Co.

Again Sinaiko has second thoughts about the sale—this

time of the corn processing plant. So at age 79 he decided to invest in another corn processing company—Corn Sweeteners. In May 1970 he announced the groundbreaking in Cedar Rapids.

But problems arose. Many of the engineers and management team for the new company came from the corn processing plant that Cargill had bought from Sinaiko in 1967. These defections upset Cargill and raised questions of business ethics. Sinaiko, who placed a high value on his ethical integrity in both business and personal matters, acknowledged the problem. Moreover, the new plant was too big for the personal, informal management style that he preferred. So in 1971 he sold his interest in Corn Sweeteners to Archer Daniels Midland Co., which used the plant to enter the corn processing industry.

After 1971 Joe never really retired. He kept an office in Executive Plaza, dabbled in real estate, kept an eye on his investment portfolio, and maintained a keen interest in world affairs and soybean prices.

He was a quiet philanthropist who donated to hospitals and to Coe College in Cedar Rapids, to the University of Wisconsin, and to a wide range of Jewish causes and many others.

Although Joe Sinaiko's accomplishments were largely unsung, he left a rich legacy to the vitality (economic and otherwise) of Cedar Rapids.

An excellent illustration by the Gazette's Chris Wolf shows a portrait of Joe Sinaiko. A 1964 photo shows his Corn Starch and Syrup Co. under construction. Address: Gazette staff writer.

1228. Byrne, Maureen. 1988. Whatever happened to new protein? *Food Manufacture (London)* 63(10):51-52, 54, 57. Oct.

• **Summary:** According to Interfood, 3,000 tonnes of soy protein isolate and 6,000 tonnes of concentrate are used in the UK every year. In the UK, British Arkady was the first company to manufacture TVP after its takeover by ADM. Lucas Ingredients is another large manufacturer in the UK. A smaller maker is GMB Proteins, which is part of Bush Boake Allen. Also discusses Bontrae, Kesp, Beanfeast, and Quorn.

“The most exciting new protein food to have emerged in recent years is undoubtedly mycoprotein, developed by RHM [Rank, Hovis, McDougall] in the UK, which is the result of nearly 20 years of research... Called Quorn, this protein-rich food, with a texture very similar to that of meat, is now produced and marketed by Marlow Foods (formerly New Era Foods), a company jointly owned by RHM and ICI.” The ideal source material for Quorn is “a microscopic plant called *Fusarium graminearum*, which is similar to the mushroom and which was eventually discovered not far from RHM's development centre near Marlow, Bucks (hence the name Marlow Foods). Marlow has now been producing Quorn at its factory in Stokesley in the North

East of England for two years.” They are grown in a sterile fermenter on liquid glucose produced by hydrolysing cereal starch. Nitrogen in the form of ammonia is added for protein development, with essential minerals and oxygen. Quorn is discussed in detail, and a large photo (p. 57) shows a chicken analogue made from Quorn.

Note 1. This is the earliest document seen (Oct. 2014) that mentions Quorn, a meat alternative made from mycoprotein (*Fusarium graminearum*) by Marlow Foods in Stokesley (a small market town), North Yorkshire, in northern England.

Note 2. This is the earliest document seen (Jan. 2010) that mentions RHM in connection with Quorn or as the company that developed Quorn. Address: England.

1229. Oilseeds Division, Grain Marketing Bureau, Grains and Oilseeds Branch, Agriculture Canada. 1988. Oilseed sector profile. Ottawa, Ontario, Canada. 65 p. Oct. 28 cm. [3 ref]

• **Summary:** Contents: Foreword. Introduction. The production subsector. The processing subsector: Background, industry structure, industry performance. The marketing subsector: Oilseeds marketing, processed oilseed products marketing, hedging. The marketing environment: Domestic, international markets. A look into the future. Appendix A: The role of the federal government in the Canadian oilseed industry. Appendix B: Oilseed industry directory, industry associations, oilseed processing companies, oilseed trading companies & coops, research / educational institutions, government, others. Appendix C: Tables. Address: 930 Carling Ave., Ottawa, ONT K1A 0C5, Canada. Phone: (613) 995-8374.

1230. Caton, Greg. 1988. Early work with textured soy products: ADM, Ralston, Purina, and Swift & Co. (Interview). *SoyaScan Notes*. Nov. 1. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** ADM and Ralston Purina filed for independent patents related to texturization of soy flour at about the same time. There was a suit and counter-suit, then Swift & Co. and Staley jumped in on the counter-suit. After a lengthy and very expensive trial, there was an out of court settlement. Then Ralston Purina was granted the process patent and ADM got the product patent.

Jim Beyers has the whole, fascinating story and a wealth of related information. He testified at many depositions. He is with Westward Industries Inc., 1819 S. Meridian Ave., Wichita, Kansas 67213 (Phone: 316-942-8387). Another knowledgeable person is Chuck Harwood, a consultant in the Chicago area.

Also contact Dr. Tom Futch of Manna International in New Orleans, Louisiana, for info on TVP. He is a born again Christian of the best type. Phone: 504-254-3333. A PhD in food science, he worked with Staley in extrusion of soy

protein concentrates. Address: President, Lumen Food Corp., 409 Scott St., Lake Charles, Louisiana 70602-0350. Phone: 318-436-6748.

1231. Archer Daniels Midland Co. 1988. First quarter report to shareholders. Box 1470, Decatur, IL 62525. 16 p.

• **Summary:** President Randall's Report—stated that the greatest concern of Americans in the 1990s will be the environment. 1. ADM now has in operation eleven large fluid bed boilers for cogeneration of power and process steam. 2. Worldwide technology has been licensed for using a special grade of starch to render disposable plastics degradable. 3. Ethanol is a third contribution to clean environment. Ethanol fuels have a high oxygen content, a major factor in reducing carbon monoxide poisoning of the atmosphere.

“There is a tremendous demand all over the world for soy protein products to replace subsidized milk powder. Our soy protein concentrate plant is completed and is now operational. We will double its size in early 1989 and are making plans to double it again before 1990, in response to the new demand.

“We are also doubling the size of our edible soy protein isolate plant, with plans for further increases in 1989 and beyond. We are constructing a plant for industrial isolates for the paper industry, to be sold in conjunction with our corn starches.

ADM now produces soybean flour, grits, TVP, concentrate and isolate, the most complete line of edible soy products of any producer.

Chairman Andreas' Report—The U.S. Government has more control over what the farmers plan and the prices they receive today than they have ever had in history.

Government imposed embargoes cause massive restructuring of world trade and processing. Examples: Immediately after the 1980 embargo, the following fundamental permanent adjustments in world trade occurred:

1. The EEC, in emergency meetings, alarmed that the U.S. would cut off exports for political reasons, resolved to become self-sufficient, particularly in oilseeds, with the result that they increased production of wheat and have become a large surplus producer of wheat. 2. Japan, equally alarmed, immediately made \$1,000 million available to Brazil to expand soybean production 300%. 3. The Soviet Union took its order book to Brazil, Canada, Argentina, Australia, and the EEC, cutting the U.S. from a 75% supplier to a 25% supplier. 4. Canada and Australia responded with 20% increases in production. Address: Decatur, Illinois.

1232. Cunningham, N.L.; Bonkowski, A.T.; Tuley, W.B. 1988. Soy protein use in meat, seafood. *J. of the American Oil Chemists' Society* 65(12):1871-73. Dec. [4 ref]

• **Summary:** Textured soy proteins. “The first form of soy protein to be textured for commercial application was soy flour. Archer Daniels Midland Co. (ADM) patented this

technology in 1970.

“Soy protein concentrates have provided the base for a second generation of textured proteins.”

Functional soy concentrates are produced by 2 major companies—ADM and Central Soya Co. Inc.

Discusses isolated soy proteins, diet meat analogs, and isolated soy proteins in fish. Address: ADM, Decatur, Illinois.

1233. Realeat Company (The). 1988. The 1988 Realeat survey into meat eating and vegetarianism [in Great Britain]. London. 10 p.

• **Summary:** This fifth consecutive study, conducted by Social Surveys (Gallup Poll) Ltd. is based on 2,481 interviews with people aged 16 and older. Nearly a million more people in Britain now avoid red meat in their diet than in 1987. “Vegetarians now represent 3.0% of the adult population, or 1.3 million people. This figure is the same as in 1987.

“Those avoiding Red Meat represent 5.5% of the adult population, or 2.4 million people. This is treble the 1984 figure.

“The Combined Group, (vegetarian and those avoiding red meat) therefore represents 3.7 million people, one in twelve of the adult population (8.5%). This is an increase of 29% over 1987 and 113% over 1984.

“Children—9.3% (1.2 million) children are said by their parents to be vegetarian or beginning to avoid red meat.

“Total Population—The total number of people, adults and children, who avoid red meat or are vegetarian is 4.9 million.

“A full 35% of the adult population is now claiming to be ‘eating less meat’ and the main reason for this was health, cited by half of the category.” Address: Gregory Sams, 2, Trevelyan Gardens, London NW10 3JY, England. Phone: 01-459-3401.

1234. **Product Name:** Granose Vegetarian Wholefood Kitchen: Soya and Mushroom Burgers.

**Manufacturer's Name:** Granose Foods Ltd. (Distributor). Made in Denmark by Nutana Helsekost.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1988.

**Ingredients:** Soya protein, maize oil, mushrooms, water, wholemeal breadcrumbs, egg protein, onions, wheat flour, sea salt, vegetable flavouring.

**Wt/Vol., Packaging, Price:** 225 gm paperboard box.

**How Stored:** Frozen.

**Nutrition:** Per 100 gm.: Energy 250 Kcal (calories), protein 11.5 gm, carbohydrate 23.6 gm, fat 12.8 gm, cholesterol 0.0 gm.

**New Product—Documentation:** Form filled out and Label sent by Granose Foods Ltd. 1990. June 13. States that the

frozen product, made by Nutana, was introduced in 1988 and uses soya flour as the main protein ingredient. Label. 8.5 by 4.25 by 1 inch. Paperboard box. Blue and white on gray. Photo on front panel shows a sliced, ready-to-eat burger on a plate with ketchup, green beans, and fried potatoes. "No artificial colours or preservatives... Do not re-freeze once thawed." Back panel: "Cooking instructions: Direct from freezer, shallow fry in oil for 4 minutes each side or grill for 10 minutes each side. Serving suggestion: Serve with sauteed potatoes and vegetables or garnish in a wholemeal bun."

**1235. Product Name:** Granose Soya Margarine (Dairy Free).

**Manufacturer's Name:** Granose Foods Ltd. (Distributor). Made in Denmark by Nutana Helsekost.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1988.

**New Product-Documentation:** Form filled out by Granose Foods Ltd. 1990. June 13. States that the product, made by Nutana, was introduced in 1988.

**1236. Product Name:** Granose Soyagen: Soya Milk Powder (For Adults).

**Manufacturer's Name:** Granose Foods Ltd. (Importer-Marketer). Made in West Germany by DE-VAU-GE.

**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England. Phone: 0923-672281/2.

**Date of Introduction:** 1988.

**Ingredients:** (1990): Soya proteins (instant), corn oil, malt, starch, calcium carbonate, vegetable emulsifier: lecithin, sea salt, natural flavourings, vitamins E, B-1, B-2, B-12.

**Wt/Vol., Packaging, Price:** 350 gm box.

**How Stored:** Shelf stable.

**Nutrition:** Per 100 gm.: Protein 21 gm, fat 26 gm, carbohydrate 45 gm, calcium 420 mg, phosphorous 200 mg, iron 3.5 mg.

**New Product-Documentation:** Form filled out and Label sent by Granose Foods Ltd. 1990. June 13. States that product was introduced in 1967. Made by DE-VAU-GE. Address on label is Stanborough Park. Label. 1990. 5.5 by 8 by 1.75 inches. Paperboard box. Black, red, yellow, and dark green on white and light green background."Contains no animal produce. Lactose free. Gluten Free. The vegetable Lactose-free composition of Granose 'Soyagen' Soya Milk Powder makes it easy to digest and suitable for people with an allergy to cows' milk." Illustration on front panel shows a glass of milk in front of green soybean leaves and pods. Side panel: "Preparation: Granose Soya Milk Powder dissolves instantly in hot or cold water. Standard Mix 1 part powder to 6 parts water (40 gm powder to ¼ litre water). Suitable for use in: Puddings, Custard, Yogurts, Soups, Sauces, etc." Note: This was the earliest known soymilk made in Europe for adults that was fortified with calcium.

**1237. Product Name:** Vege-Grill.

**Manufacturer's Name:** Realeat Company (The).

**Manufacturer's Address:** 2 Trevelyan Gardens, London NW10 3JY, England. Phone: 01-459-3401.

**Date of Introduction:** 1988.

**Ingredients:** Textured "soys" with some wheat gluten.

**New Product-Documentation:** Letter from Gregory Sams. 1988. March 30. The product will be launched this year.

**1238. Bodis, Laszlo; Kralovansky, U. Pal. 1988. A szoja: Elelmiszter es takarmany [The soybean: Food and feed]. Budapest, Hungary: Mezogazdasagi Kiado (Agricultural Publisher). 186 p. [37 ref. Hun]**

• **Summary:** Contents: Introduction. The soybean, our five thousand year old crop. Up to date technology of soybean production. Soybean processing methods: Basic operations. Soy products: Soy flour, soy protein concentrate, soy protein isolate, TVP (textured soy flour), soy oil, soy lecithin. The soybean as food. Soy protein in feeding. The economics of soybean production, processing, and use.

The conclusion states: "We hope that on account of the growing interest in health and nutrition, a growing number of consumers will be interested in soy-based foods."

The back cover states: What kind of crop is the soybean? Where and how can it be grown with success? What are the most important processing methods? How can it be utilized as food and as feed? These are the questions answered in this book.

Dr. Bodis notes in a letter of 4 June 1990 that the co-author, Kralovansky, until the time of his retirement, was the most knowledgeable figure on all aspects of soybeans and protein in Hungary. Address: Director, Feherjetechnologiai Tudomanyos Termelesi Egyesules, Budapest XII., Goldmark K. u. 3. Budapest Pf: 340 1536, Hungary. Phone: 155-5202.

**1239. Ewoldt, Harold F. 1988. Cedar Rapids [Iowa]: The magnificent century. Northridge, California: Windsor Publications. 136 p. See p. 26, 33, 128. Illust. Index. 29 cm. [18 ref]**

• **Summary:** "Cargill Inc., headquartered in Minneapolis [Minnesota], entered the milling community of Cedar Rapids very quietly. It had opened a grain marketing office in the city in the 1930s. In 1945 its feed division, Nutrena, started manufacturing animal nutrition products. Also during the 1940s it operated the Iowa Milling Company, a soybean processing operation.

"In May 1967 a lease arrangement with Joseph Sinaiko provided Cargill with its first corn-milling operation in the Cedar Rapids area. Cargill acquired the corn-processing facilities of Corn Starch and Syrup Company plus other Sinaiko interests in Cedar Rapids. The corn plant, located at 1710 Sixteenth Street S.E., had the capacity to process 14,000 bushels of corn per day into starch syrup and gluten

feed products. This arrangement gave Cargill processing facilities for soybeans and animal feeds” (p. 26).

“In 1936 Honeymead [owned by the Andreas family] transferred its manufacturing base to Cedar Rapids, taking over the facilities of the Mesquakie Mills at 1120 Twelfth Avenue S.W. There it pioneered pellet feeds, an innovation that revolutionized the feed industry. This facility was eventually leased to the Nutrena Division of Cargill.” The Honeymead facility became Cargill’s west-side soybean plant.

“The Iowa Milling Co. entered the livestock-feed business in Cedar Rapids in 1923. It manufactured a feed known as Vitamo, which included a complete line of poultry feed, plus high protein feed supplements for cattle and hogs. Iowa Milling’s soybean processing operation brought it to the attention of Cargill, which eventually purchased the company” (p. 33).

A page titled “Cargill, Inc.” notes that Cargill began in 1865 as a small grain warehouse in northeastern Iowa. In 1943 Cargill arrived in Cedar Rapids when it purchased a soybean processing plant. Today in Cedar Rapids, Cargill employs a total of 337 people at two soybean processing plants, a corn wet-milling plant, and an analytical testing laboratory. The three processing plants provide markets for 50 million bushels/year of Iowa corn and soybeans.

Cargill’s East Plant, at 411 Sixth Street Northeast, is the larger of the two soybean processing plants. An aerial photo shows this plant. The West Plant, at 1010-10th Avenue Southwest, makes special soy ingredients such as soy flour and textured vegetable protein products such as imitation bacon-, beef-, and chicken-flavored chips. These are used as salad toppings or as ingredients by food manufacturers.

In 1967 Cargill entered the corn wet-milling industry in Cedar Rapids with the purchase of a mill near the Cedar River at 1710-16th Street Southwest. An aerial photo shows this plant. Address: Cedar Rapids, Iowa.

1240. Wood, Rebecca T. 1988. *The whole foods encyclopedia: A shopper’s guide*. New York, NY: Prentice Hall Press (Simon & Schuster). xv + 218 p. Foreword by Michio Kushi. Illust. 28 cm. [200\* ref]

• **Summary:** This book is mistitled. It should be titled “Rebecca Wood’s Macrobiotic Views on Natural Foods.” The parts on quinoa, teff, amaranth, and many “macrobiotic foods” provide good information. There is extensive information on soyfoods, all from a macrobiotic viewpoint, but with many errors or undocumented controversial assertions never seen before in the literature, such as the following: “Cold Tofu. Foods that are cooling, like tofu, tend to reduce the fire in the lower organs. This explains why tofu was eaten by Buddhist monks to abate their sexual desires. This is not a prescription against tofu. Well-cooked tofu is less cooling. For optimum health, we need a balance of warming as well as cooling foods. However, if you are

feeling cold, or if it is a cold day, or if you have strenuous activities planned, then you may opt for salmon over tofu.”

Foods discussed are: Cheese (imitation soy), ice cream and frozen desserts (soy or tofu ice cream), miso, natto, nigari, soybeans (black, yellow, and “just harvested green soy”), soy flour, soy protein isolate, soy milk, soy nut (“Those oversalted, beggarly little crunches found in everything from trail mix to salads are soynuts,...”), soy oil, soy sauce (“Also known as *Shoyu* and *Tamari*), and soy yogurt, tempeh, tofu, and TVP (texturized vegetable protein {textured soy flour}).

Note: This is the earliest English-language document seen (Feb. 2005) that contains the term “cooling food.” Address: P.O. Box 30, Crestone, Colorado 81131. Phone: 303 (or 719) -256-4939.

1241. Archer Daniels Midland Co. 1989. New trademarks: Arcon. *Official Gazette Trademarks (Washington, DC)*. Jan. 24.

• **Summary:** Filed 1-20-1988. For soy protein concentrate for use in manufacture of food products and dietary supplements (U.S. CL 6). First use 10-0-1981. In commerce 10-0-1981. Address: Decatur, Illinois.

1242. **Product Name:** Arcon T (Textured Soy Protein Concentrate).

**Manufacturer’s Name:** Archer Daniels Midland Co.

**Manufacturer’s Address:** Decatur, Illinois.

**Date of Introduction:** 1989 January.

**New Product–Documentation:** Talk with Ed Meyer of Central Soya. 1993. April 7. ADM makes a textured soy protein concentrate named Arcon T. It is used in their veggie burgers.

Talk with Karen Bachman at ADM. 1993. April 7. This product was introduced in Jan. 1989. It first appeared in her catalog of 31 Jan. 1989. It is made at Decatur, Illinois.

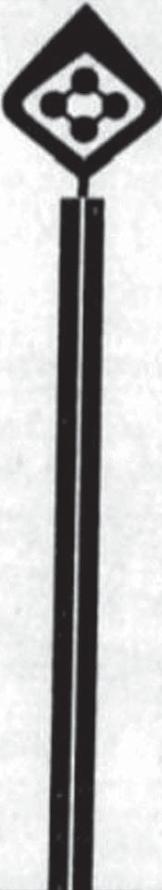
1243. ADM. 1989. Display ad: ADM: Taking Iowa crops to market. *Des Moines Register (Iowa)*. Feb. 5. p. 10W, Sunday. • **Summary:** “Archer Daniels Midland is fostering the Iowa economy by unfolding new technologies that utilize Iowa-grown products.”

“Soybean processing for oil and feeds also contributes significantly to the Iowa economy. As Iowa grows, so grows ADM: supermarket to the world.”

Note: This is the earliest document seen (July 2020) that contains the new slogan “ADM: supermarket to the world.”

1244. Shellenbarger, Sue. 1989. Grain Maverick. Dwayne Andreas runs ADM his own way, often playing hardball. Did anger at Board of Trade bring about the scandal at Chicago’s exchanges. His moles in the trading pits. *Wall Street Journal*. Feb. 9. p. 1, A12.

• **Summary:** A nice portrait illustration (dot-style) shows



**ADM**

## Taking Iowa Crops to Market

Archer Daniels Midland is fostering the Iowa economy by unfolding new technologies that utilize Iowa-grown products.

Corn is being refined for use in degradable plastics. These plastics will degrade if they are buried in a landfill, immersed in water, or discarded in the open.

The development of ethanol-blended fuels produced from corn has reduced air pollution in many areas of the country and given Iowa's corn growers a significant boost. Ethanol's part in improving air quality is becoming more accepted as its use continues to grow.

Soybean processing for oil and feeds also contributes significantly to the Iowa economy. As Iowa grows, so grows ADM: supermarket to the world.

Dwayne Andreas. In 1985 the Chicago Board of Trade accused ADM, America's largest soybean processor, of manipulating soy oil prices. Andreas refused to appear before a disciplinary committee and ADM was fined \$25,000. Within months, ADM agreed with federal prosecutors to train and employ 2 undercover agents, wired for sound, to infiltrate the trading pits of the nation's largest futures exchange. A major scandal has erupted when the investigators alleged fraud.

"The senior Mr. Andreas not only plays hardball in the marketplace, he consistently charts an idiosyncratic course for his company, shunning the popular wisdom of the food industry and Wall Street alike. Through ruthless cost cutting, among other things, he has built the Decatur, Illinois, company from a bedraggled also-ran to the nation's biggest commodity processor, one with \$6.8 billion in annual sales and a balance sheet one analyst describes as 'awesome.' ...

"The 69-year-old head of ADM has carved out an image as a kind of senior statesman of agriculture, traveling in his personal plane to Moscow for meetings with Mikhail Gorbachev and courting favor in Washington, DC, for his innovative company's latest idea. A master of the grand gesture, Mr. Andreas even offered recently to have a trade group he heads purchase the bugged U.S. Embassy in Moscow...

"Mr. Andreas has never shown much regard for the conventions of the financial markets. He releases, for instance, only bare-bones financial data... One of Mr. Andreas's first acts when he took over as ADM's chief executive 19 years ago was to gut the company's 27-member public-relations staff; today a vice president, Richard Burket, says he handles 'public relations, advertising, government relations—you name it.' ... Bucking another Wall Street trend—the heavy leveraging of assets—he keeps ADM's balance sheet sloshing with surplus cash; ADM has about \$1 billion on hand in cash and marketable securities, and only \$800 million in debt.

"Despite this pot of cash, Mr. Andreas has shunned the big-name takeover game. Instead, reflecting his zeal for controlling costs, he has been on a prolonged shopping quest for mills, plants, barges and other mundane assets that can be had at bargain-basement prices...

"In 1985, after decades of nose-to-nose competition, ADM's giant crosstown rival in Decatur, A.E. Staley Mfg. Co., threw in the towel and sold its soybean-processing business... Ultimately Staley was acquired by Tate & Lyle PLC, the big British company." Address: Staff reporter.

1245. Archer Daniels Midland Co. 1989. Second quarter report to shareholders. 8 p.

• **Summary:** The section titled "ADM expands soy protein operations" (p. 3, 6) notes: "ADM's new soy protein concentrate plant at Decatur East became operational in the December, 1988 Quarter. This facility is producing powdered and granular concentrate products for the food industry and for specialty foods.

"Already the market leader in the production and sale of textured soy protein products, ADM now has a full line of textured soy protein concentrates being marketed under the Company's TVP brand. The addition of these concentrate products makes ADM the only full line soy protein supplier... An expansion of the concentrate plant is already underway and the edible isolated soy protein is also being expanded. A new isolated soy protein plant for industrial products is under construction at Decatur East and is scheduled for completion by the end of 1989.

“The growing demand for soy protein products has been aided by the reduction in dried milk supplies resulting from reduced government support programs for milk in the U.S. and in the European Community.” Address: Decatur, Illinois.

1246. Archer Daniels Midland Co. 1989. New trademarks: Ardex. *Official Gazette Trademarks (Washington, DC)*. March 28.

• **Summary:** Filed 1-20-1988. For soy protein concentrate for use in manufacture of food products and dietary supplements. (U.S. CL 6). First use 1-0-1981. In commerce 1-0-1981. Address: Decatur, Illinois.

1247. Kohn, Florrie. 1989. Is canola coming? *Soybean Digest*. March. p. 8-10.

• **Summary:** An estimated 65,000 acres of canola are now planted in the U.S. Rapeseed now ranks as the world’s third most widely grown oilseed. “Most rapeseed oils contain more than 40% erucic acid, which health experts link to heart disease. Canadian plant breeders created canola just over 20 years ago when they developed a rapeseed containing less than 5% erucic acid. Since then, they’ve trimmed the erucic acid in most canola to less than 2%...”

“Four years ago FDA granted canola GRAS status. And in 1988, it stopped requiring food companies to identify canola oil as ‘low erucic acid rapeseed oil’ (LEAR) on food labels... Calgene, a California company that’s invested heavily in developing canola varieties tailored to the U.S...”

“ASA [American Soybean Assoc.] needs to think about bringing U.S. canola growers under its umbrella... Farmers see canola as an alternative to planting winter wheat...”

“In addition to handling canola at its facility in Windsor, Canada [ADM Agri-Industries Ltd.], Archer Daniels Midland Co. (ADM) is switching its newly purchased processing plant in Velva, North Dakota, to canola...”

“Several years ago, Procter & Gamble (P&G) switched its Puritan brand cooking oil from a soy/sunflower blend to 100% canola.” A sidebar notes, “Canola oil in Canada accounts for more than 60% of the vegetable oil products, including over 80% of all salad oils. Canada grows more canola than any other country in the world...”

“The European Community (EC) encourages its farmers to grow double zero (00) rapeseed, equivalent to canola.”

1248. **Product Name:** Unisoy Gold Soya Milk (Enriched with Calcium and Vitamins. Made with Organic Soya Beans).

**Manufacturer’s Name:** Unisoy Milk ‘n’ By-Products Ltd.

**Manufacturer’s Address:** Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430-6329.

**Date of Introduction:** 1989 March.

**Ingredients:** Water, whole organic soya beans, pure apple juice (Alar free), calcium, magnesium, emulsifier, lecithin,

vitamins B-12, A, and D-2.

**Wt/Vol., Packaging, Price:** 500 ml Tetra Brik Aseptic carton. Retails for 0.42p (5/91, London).

**How Stored:** Shelf stable; refrigerate after opening.

**Nutrition:** Per 100 ml: Energy 45 kcal (calories), protein 3.3 gm, carbohydrate 4.1 gm, total fat 1.9 gm, saturated fat 0.25 gm, cholesterol 0.0 gm, calcium 95 mg, magnesium 20 mg, vitamin 53 mcg, vitamin D-2 0.03 mcg, vitamin B-12 0.6 mcg.

**New Product–Documentation:** Talk with Neil Rabheru of Unisoy. 1990. July 2. Followed by letter (fax) of July 9. This product was launched in March 1989. It is a liquid (ready to use, not concentrated) soyamilk enriched with minerals (calcium, magnesium), and vitamins (A, D, B-12), made with organic soya beans. It was developed to bridge the nutritional gap between cow’s milk and soyamilk, and try to bring the taste closer to cow’s milk. “This product is the closest match to cow’s milk in terms of nutrition in the ready-to-use form on the European market.” The level of vitamin B-12 was deliberately made higher than that of cow’s milk since it can be difficult for people on non-dairy diets to obtain a sufficient amount of this vitamin.

This new product, which led to the gradual phasing out of the White Wave sweetened soya milk, has been a phenomenal success for Unisoy. It was developed in response to the hundreds of letters they used to get every month asking about the calcium and vitamin content of White Waves Soya Milk. Unisoy was the first company in Europe to launch a ready-to-use, calcium-fortified soyamilk for adults (not including infant formulas). [Note: Earlier calcium fortified soymilks made in Europe for adults included: Granose Soyagen (Powdered, 1967), Plamil Soya Plantmilk (Concentrated, 1981), Semper Soja Dryck (Ready to drink in plain and chocolate flavors, Jan. 1988)]. Alpro’s calcium-fortified soymilk, which appeared on the UK market in Jan. 1990, was developed in response to the success of Unisoy Gold.

Label sent by Heather Paine of SoyaFoods in London. 1991. May. 3.75 by 3.5 by 1.25 inches. Tetra Brik carton. Gold, black, red, and blue on light yellow. “Gold must be shaken well before use. Non-dairy. Tea and coffee: Enjoy the excellent taste of Gold in tea & coffee, by putting milk in the cup first and allowing the beverage to cool slightly before pouring. Refrigerate after opening. Use within 3 days of opening.”

Talk with Neil Rabheru of Unisoy. 1991. Sept. 16. The type(s) of calcium used to fortify this product is very critical; Neil figured it out by himself. He uses a combination of calcium types, and this is a trade secret, but neither is calcium sulfate (which would cause coagulation) nor calcium lactate (which would make the product non-vegan).

1249. Continental Grain Company. 1989. U.S. soybean processor consolidation: Capacity by major processor. New

York, NY. 1 p. Unpublished manuscript. Internal report. April 11.

• **Summary:** The table gives figures for 1975, 1983, and 1989. The following April 1989 figures list ranking, percentage of total capacity, number of plants, and capacity in short tons/day (TPD).

1. ADM, 31%, 17 plants, 37,300 TPD.
2. Cargill, 26%, 16 plants, 31,300 TPD.
3. Bunge, 10%, 7 plants, 12,000 TPD.
4. Central Soya, 9%, 7 plants, 11,000 TPD.
5. Ag Processing, 9%, 6 plants, 11,000 TPD.
6. Quincy, 5.8%, 2 plants, 7,000 TPD.
7. Owensboro, 2.5%, 1 plant, 3,000 TPD.
8. Continental, 0.6%, 1 plant, 1,800 TPD.
9. All others, 5%, 6 plants, 6,000 TPD.

Total: 63 plants, 120,400 TPD.

Note that the top 5 companies controlled 85% of capacity in 1989, but only 64% in 1983 and 45% in 1975. The total number of plants in 1989 was 63, compared with 88 in 1983 and 103 in 1975. The total capacity was 120,400 TPD, down from 123,025 in 1983 but up from 92,600 in 1975. Address: Continental Grain Co., World Processing Div., 277 Park Ave., New York, NY 10172.

1250. Harrison, Gilford R. 1989. Ruth Orellana and work with soyfoods in Mexico (Interview). *SoyaScan Notes*. April 17. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ruth S. Orellana, who did pioneering work with soyfoods in Mexico, is an American, born in Long Island, New York. Now living in Houston, Texas, she is age 73 this year. She married a Mexican, and worked for 12-15 years as a nutritionist for the ABC Hospital in Mexico City. Gil hired her in 1975 as a part time consultant to set up the American Soybean Association's Human Nutrition Center and to develop a booklet of soy recipes. She learned how to use soybeans from ASA. She was most successful in developing soy-based recipes and menus (such as banana-soy cake, 100% TVP sevicehe [usually made with raw fish marinated in lime or lemon juice with olive oil and spices], bacalao [very expensive dried codfish], and chorizo type sausages, hamburger, etc.). She did a marvelous job, training people in restaurants and institutions. She started the original work on the soy-enriched tortilla. ASA's best cooperator on this project was Joaquin Galicia ("La Quina"), director of the PEMEX labor union. He wanted to get better nutrition at lower cost for workers in the union. But recently he crossed the president of the country and was put in jail; all of his soy programs have been discontinued. The greatest use of soy in foods was the use of full-fat soy flour in baked goods (such as the bollilo or Mexican bun) as a milk and egg substitute; it saved money in the formula and extended the shelf life of products. Some companies make soy flour & milk/why blends to sell to bakers. Pan Bimbo, the biggest commercial baker, is still using 3% full-fat soy flour in all of their sweet/

dessert breads. No baker is interested in nutrition, only in improving quality and profits. With each 1% soy flour in a bread, you add 1% more water, which increases profits. As long as you use less than 10% soy flour (3-6% is best) you don't need to add SSL dough conditioner. No one will know the soy is there.

Ruth's soy recipes were published as a 42-page booklet by ASA, first in 1975 in a book titled *Cocinando y Comiendo Con Soya*. The book was reprinted 10-12 times, and in Nov. 1978 the title was changed to *Viva Recetas Con Soya*. ASA in Mexico City also has dozens of loose-leaf institutional soy recipes, with 100-serving portions, distributed free of charge. Address: American Soybean Assoc., Division manager, Latin America, St. Louis, Missouri.

1251. Faga, Betsy. 1989. History and activities of Protein Grain Products International (Interview). *SoyaScan Notes*. April 21. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** This is a trade association representing manufacturers of 7 processed and blended foods, 5 of which are fortified with soy. One other product, Instant Corn Soy Milk, was dropped about 2 years ago when government surpluses of nonfat dry milk ran out. She considers Corn Soy Milk (CSM) and Corn Soy Blend (CSB) to be one and the same, because the government tends to order either one or the other, based on the availability of nonfat dry milk. Likewise with Wheat Soy Blend (WSB) and Wheat Soy Milk (WSM).

Betsy has been with the organization for 16 years. Six companies (all millers) make P.L. 480 products, and 5 of these are members. Only Lincoln Grain Co., recently purchased by ConAgra, is not. Members include the 5 millers plus 15-20 associate members. PGPI publishes a directory (which is available only to members) that lists members and the products they make, plus related non-proprietary statistics. During the period 1984-86 shipments of P.L. 480 foods increased because of the emergency in Ethiopia. After 1986, shipments were returned to normal and it looks like they will remain steady during the next few years. An up-trend looks unlikely. The program now permits monetization, which allows voluntary agencies, in a certain percentage of the program, to order Title II commodities, then sell it within a country (as to a business, such as a bakery), and use the funds to further food aid in that country (such as enhancing a school lunch program). The cereal-soy blends are not widely monetized, so this decreases demand for them. Demand rises for the basics, such as wheat flour and cornmeal.

Food for Peace started in 1954. The forerunner of PGPI, named Bulgur Associates, was founded in 1963. Their main thrust was to do market development work for bulgur wheat overseas. Betsy began in 1969. Soy fortification of cereal commodities began in the late 1960s by the NRRC in Peoria, Illinois, and the milling companies that are now

members PGPI. Initially only wheat products were fortified (Soy Fortified Bulgur, Wheat Soy Blend), so in 1970 the name was changed to Protein Cereal Products International (PCPI). Then in 1974 the name was changed to Protein Grain Products International as corn and sorghum products were included and the Corn Millers' Export Institute merged with PCPI. They still do market development and focus on P.L. 480 Title II.

The five members who are millers are ADM, Cargill, Cereal Food Processors (Kansas City; wheat flour), Illinois Cereal Mills (large corn millers), and Lauhoff Grain Co. (now a subsidiary of Bunge). In the title II program, Lauhoff is the largest, closely followed by ADM. Associate members make the bags in which the products are shipped, or make the vitamin-mineral premixes or tricalcium phosphate. Address: President, Protein Grain Products Council, 6707 Old Dominion Dr. #240, McLean, Virginia 22101. Phone: 703-821-3717.

1252. DeSilver, Drew. 1989. More Britons just saying no to meat: Survey says. *Vegetarian Times*. April. p. 8. [3 ref]  
 • **Summary:** The percentage of British population age 16 and over who are avoiding meat has risen from 4% in 1984, to 5.8% in 1986, to 8.5% in 1988, according to a poll commissioned by Realeat. The survey shows that women are far more likely to not eat meat or be cutting back than men.

1253. **Product Name:** Granose Sweet Sensation (Soy Ice Cream) [Vanilla, Raspberry Ripple, Tutti Fruitti, Black Cherry].

**Manufacturer's Name:** Granose Foods Ltd. (Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire, MK16 9PY, England. Phone: (0908) 211311.

**Date of Introduction:** 1989 April.

**Ingredients:** Organic soya milk (water, dehulled organic soya beans); raw can sugar; corn syrup; vegetable oil; vanilla bean extract; emulsifier; vegetable mono-diglycerides; Stabilisers: locust bean gum, guar gum, xanthan gum; Natural colour: Annatto.

**Wt/Vol., Packaging, Price:** 750 gm paperboard box.

**How Stored:** Frozen.

**New Product–Documentation:** Form filled out and 4



Labels sent by Granose Foods Ltd. 1990. June 13. In Jan. 1989 Granose's entire factory and offices were moved from Stanborough Park in Watford, to Howard Way in Newport Pagnell. The frozen product, made by Genice Ltd., was introduced in 1989. Label. 7.5 by 5 by 2.5 inches. Paperboard box. Photo of product in a wavy-edged glass next to fruit or flowers on front panel. The box background is white printed with diagonal colored lines. "A delicious non dairy frozen dessert, made with organic soya milk and other natural ingredients." Side panel: "Contains no artificial colours or preservatives." Talk with Neil Rabheru of Uniso. 1990. July 2. Much of Genice's success comes from products sold under brands other than its own.

Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 4 and 8. In April 1989 Sweet Sensation, another non-dairy frozen dessert, was launched for Granose Foods in a 3/4 liter pack composed of a rectangular plastic tub in a cardboard sleeve, in 4 flavors—tutti fruitti, black cherry, raspberry ripple, and vanilla. Genice made this product for Granose before and after Granose was acquired by the Haldane Group.

1254. Langley, Gill. 1989. Aluminium and soya milks. *Vegan (The) (England)*. Spring. p. 12. [3 ref]

• **Summary:** Dr. Langley cites articles in *The Sunday Times* (Nov. 20), *The Manchester Guardian* (Jan. 4) and *New Scientist* (Jan. 21) that reported on the presence of aluminum in food and its effect on health. "Scientists presently believe that there may be a link between the gradual build-up of aluminum in the bones, brain and blood, and conditions ranging from a softening of the bones, senile dementia (or Alzheimer's disease), and anaemia. Higher levels of

aluminum in soya-based infant formula feeds were reported in some of these articles...

“There is no legal requirement for manufacturers of baby milk powders or soya milks to state the level of aluminium in their products, nor is there an established maximum for these products. Normally, we would not absorb very much of the aluminium that finds its way into our digestive systems—between 75 and 95% of the average 4-8 milligrams of aluminium a day most people eat goes straight through their bodies undigested.

“However, patients with kidney disease are less able to excrete aluminium. In newborn infants during the first week of life (and longer for premature babies) the gut is more permeable, and the likelihood of aluminium being absorbed into the bloodstream is higher; such infants, and particularly underweight babies, have less effective kidneys and may also be deficient in zinc, which puts them at higher risk. These two groups, and possibly old people whose kidneys are not too efficient, are most at risk from aluminium poisoning.”

“Plamil Foods Ltd. estimate that Plamil soya milk in the ready-to-use form contains not more than 780 micrograms of aluminum per litre... Vandemoortele reported that Provamel milk contains ‘less than 5,000 micrograms’ of aluminum per litre... “Unisoy’s soya milk has 50 micrograms per litre... Farley is currently reformulating its OsterSoy powdered infant feed so that it is acceptable to vegans (by replacing animal derived vitamin D-3 with vitamin D-2). This will be available some time later this year. [Ed. See News, ‘Ostersoy Update’.] The amount of aluminum in OsterSoy powder is 2,000 micrograms per kg, but when made up with water the level is about 400 micrograms per litre...

“Those who are concerned to minimize their consumption of aluminum could avoid the use of aluminum pans and antacid medicines.” Address: England.

**1255. Product Name:** Sunrise Iced Yoghert (Non-Dairy Frozen Dessert) [Black Cherry, or Strawberry].

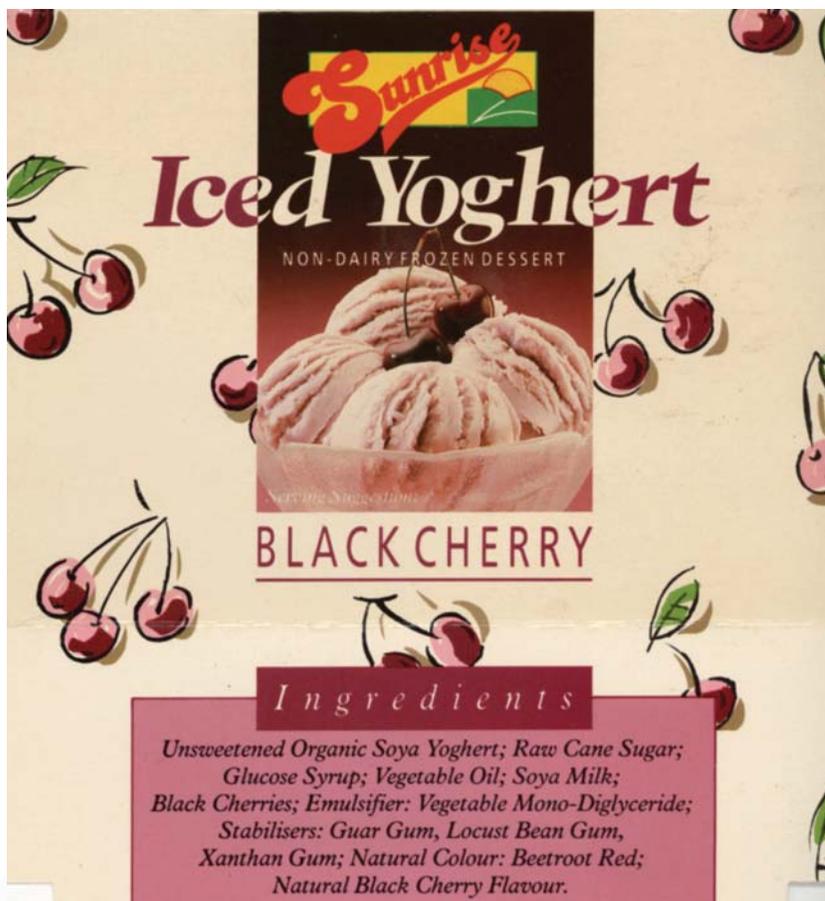
**Manufacturer’s Name:** Soya Health Foods, Ltd.

(Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer’s Address:** Unit 4, Guinness Road, Trafford Park, Manchester M17 1AU, England.

**Date of Introduction:** 1989 May.

**Ingredients:** Unsweetened organic soya yoghurt, raw cane sugar, glucose syrup, vegetable oil, soya milk, black cherries, emulsifier (vegetable mono-diglyceride), stabilisers (guar gum, locust bean gum, xanthan gum), natural colour



(beetroot red), natural black cherry flavour.

**Wt/Vol., Packaging, Price:** 500 ml.

**How Stored:** Frozen.

**New Product—Documentation:** Label (paperboard sleeve that fits over package) sent by Leah Leneman of Edinburgh, Scotland. 1993. Sept. 4. 6 by 12.5 inches. Cherry red, pink, green, bright red, and yellow on white. A photo shows a frosted dish filled with 4 scoops of this soy-based frozen yogurt, topped with 2 cherries. Taste test by Leah Leneman. “Dreadful.” Note: This may be the world’s first soy-based frozen yogurt.

Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 10. This is a non-dairy soy-based frozen yogurt—resembling ice cream. It was first launched in May 1989, made by Genice, in black cherry and strawberry flavors.

**1256. Product Name:** Maranellis Ice Supreme (Non-Dairy Soy Ice Cream Sweetened with Apple Juice) [Vanilla, Chocolate, Raspberry Ripple].

**Manufacturer’s Name:** Unisoy Milk ‘n’ By-Products Ltd.

(Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer’s Address:** Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430-6329.

**Date of Introduction:** 1989 May.

**Ingredients:** Vanilla (1994): Organic soya milk, apple juice, vegetable oil, cocoa powder, guar gum, locust bean gum, vegetable mono-diglyceride.

**Wt/Vol., Packaging, Price:** 500 ml rectangular plastic tub.

**How Stored:** Frozen.

**Nutrition:** Per 100 ml.: Energy 86.0 calories, carbohydrate 10.8 gm, fat 4.6 gm, protein 1.6 gm.

**New Product–Documentation:**

SoyaFoods (ASA, Europe). 1990.

1(1):3. Made with fresh organic soya milk and sweetened with pure apple juice. Manufacturer's leaflet (8.5 by 11 inches, full-color). 1990. "Maranellis Ice Supreme." A photo shows a long-stemmed glass chock full of soy ice cream topped with 2 red raspberries and a wedge of wafer. Text lauds the product as innovative and delicious. "Made from the very best ingredients, Ice Supreme tastes every bit as good as top quality dairy ice cream. With the flavour, taste and smooth texture of Ice Supreme, you will be amazed to find that it is a Non-Dairy product... Supported by an extensive consumer advertising campaign... You can't stock them all, but there's got to be room for the best." Color photos show the front panel of the label for each flavor. The photo on the leaflet appears on the right side of each label.

Talk with Neil Rabheru of Unisoy. 1990. July 2. Followed by letter (fax) of July 9. This product was launched in May 1989. The Raspberry Ripple is a vanilla base rippled with raspberry puree. "This product broke ground on three fronts compared to products available on the market at the time it was introduced: 1. It was made with fresh soya milk as opposed to soya isolates; 2. It was made with organic soya milk; 3. It was sweetened with pure fruit juice (apple)." Previous manufacturers had used isolates because they did not know how to make soymilk with a high protein levels. Even today, all the soy ice creams in the UK are made from soya isolates. Unisoy makes a special rich soymilk used specially for making their ice cream. He developed the product as if it were a protein-rich sorbet.

Talk with Neil Rabheru of Unisoy. 1991. Sept. 16. The manufacture of this product has been transferred from Unisoy to Genice. The Haldane Foods Group has about 99% of the soy ice cream market in the UK.

Health Food Business (UK). 1992. May. p. 33. "Frozen Desserts. Maranelli's: Maranelli's Soya Supreme (organic) available in Chocolate, Raspberry Ripple and Vanilla Wobbler, all with a rrp [or RRP = recommended retail price] of £1.25 for 500ml, trade price £4.80 for 6 x 500ml. Made with organic soya milk and sweetened with apple juice, non-dairy and suitable for vegans."



Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 4 and 8. In 1987 Genice began to work with Unisoy to develop Maranellis Ice Supreme (before Unisoy was acquired by Haldane). The product was launched in May 1989 in a ½-liter format, sweetened with fruit juice, in 3 flavors—raspberry ripple, vanilla, and chocolate. The product was made from fresh soya milk, delivered to Genice by Unisoy.

Labels (Vanilla, Chocolate) sent by Genice Foods Ltd. 1994. Feb. 18. 5.25 by 3.5 inches. Fits in the lid of a rectangular plastic tub. Chocolate flavor: Orange, red, white, and black on chocolate brown and yellow. Photo of a cone-shaped stemmed glass filled with ice cream, topped with nuts and a wafer wedge. "Alar free. Made with organic soya milk." UPC indicia.

1257. *Vegan (The) (England)*. 1989. Vegepoll. Spring. p. 7. • **Summary:** The Realeat/Gallup Poll 1988—the 5th such poll to date—has estimated the UK vegetarian population at 13 million—the same as 1987. [Note: The total population of the UK in 1989 was 56.65 million. Thus vegetarians comprised 22.9% of the population]. Further details from: The Realeat Company, (now part of the British Arkady Group), 2 Trevelyan Gardens, London, NW10 3JY. Phone: 01-459-7354. Address: England.

1258. Golbitz, Peter. 1989. Mexican soyfoods producers form association. *Soya Newsletter (Bar Harbor, Maine)*. May/June. p. 7.

• **Summary:** "Representatives of Industrial de Alimentos, Nutricasa, Productos Alimentarios Delicias, Nutrimex, Alimentos Proteínicos S.A., Arancia Purina Proteínas, Archer Daniels Midland, Laboratorios Abbot, Mead Johnson and Nestlé have been meeting with Dr. Susana Dehesa de Manjarrez and Adela Perez of the American Soybean Association's Technical Assistance Center to plan joint

activities targeted at expanding the market of edible soy protein products. The first project is to launch a generic soy advertising campaign directed at 3 market segments: food industry, medical and nutrition community, and food service and consumers.”

“A net result of the program has been the establishment of a new mind set—the reality that with soy, you can feed the same amount of people with less money.” Address: Soyatech, Bar Harbor, Maine.

**1259. Product Name:** Sunrise Ice Dream (Non-Dairy Frozen Dessert) [Mint Carob Chip Flavour, Fruit Cocktail Flavour, Mango & Apricot, Raspberry, Vanilla, or Pistachio Almond].

**Manufacturer’s Name:** Soya Health Foods, Ltd.

(Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer’s Address:** Unit 4, Guinness Road, Trafford Park, Manchester M17 1AU, England.

**Date of Introduction:** 1989 June.

**Ingredients:** Mint Carob Chip: Soya milk, corn syrup, vegetable oil, fructose, carob flour, emulsifier (vegetable mono-diglyceride), stabilisers (guar gum, locust bean gum, xanthan gum), natural mint flavour.

**Wt/Vol., Packaging, Price:** 125 ml plastic cup.

**How Stored:** Frozen.

**New Product–Documentation:** Letter and Labels sent by Genice Foods Ltd. 1994. Feb. 10. These 125 ml small pots of Ice Dream, made by Genice, were launched in mid-1989. In mid-1990 this product was launched with a Dutch label; named Soja Ijs, it was sold in at least one flavor—raspberry (*frambozen smaak*). Label is 3 inches diameter. Paper, fits down into plastic lid. Red, yellow, and green on grey. Color photo shows vanilla colored scoops of ice cream next to fruits and green leaves.

1260. Gibson, Richard; Colby, L. 1989. Man behind soybean stir is a risk taker. *Wall Street Journal*. July 13. p. C1. Western ed.

• **Summary:** Industrialist Raul Gardini, head of Ferruzzi Finanzia S.p.A. in Ravenna, Italy, relishes the unconventional. Under his brash, risk-taking guidance, Ferruzzi has grown into one of Europe’s largest concerns. “Some Italian cartoonists draw him as an eye-patched pirate, an allusion not only to his drooping eyelid and bravado business style, but also his passion for yachting.

“Since assuming control of the once-secretive company on the death of his father-in-law in a 1979 plane crash, Mr. Gardini has turned the agricultural concern into an \$18,000 million business with interests in agriculture, foodstuffs, chemicals, cement, insurance and publishing. It now ranks as Italy’s second-largest private-sector company. While its stock is traded on the Milan exchange, Ferruzzi is still controlled by the Ferruzzi family.”

Mr. Gardini “has become a passionate advocate of the

soybean, and is credited for its introduction and growth in Europe. Because of that, the Italian has been called the Dwayne Andreas of Europe, a reference to the chairman of Archer-Daniels-Midland Co. who has long preached the virtues of the protein-rich crop.

“But some think his advocacy of the soybean as an ‘ecological’ crop that requires fewer pesticides puts him in a box. While he describes himself as an environmentalist, the Montedison S.p.A. chemicals company the family controls is considered one of Italy’s biggest polluters.”

“The 56-year-old industrialist likes to give the impression of being an executive who thinks of society’s greater good: He claims to vote for Italy’s environmentalist Greens Party.”

1261. *Time*. 1989. Ferruzzi’s big pot of beans. 134(4):41. July 24.

• **Summary:** “Clamor is the usual condition in the commodities pits. Last week, however, the soy-bean trading floor of the Chicago Board of Trade erupted in pandemonium as the C.B.O.T. issued an emergency order, its first in a decade, that July futures contracts in excess of 1 million bushels be liquidated. In one day soybean-futures prices plunged 5%, to \$6.86 per bushel. Traders speculated that a single buyer was trying to corner the market or drive up prices. The suspected culprit: Ferruzzi Finanzia, Italy’s second largest privately held company and the third largest U.S. soybean processor since it bought Indiana-based Central Soya in 1987.

“Ferruzzi says its purchases—a reported 30 million bushels of soybeans in the past 18 months—were a legal effort to ensure adequate supplies for its customers. Many traders believe Ferruzzi’s two largest U.S. rivals, Archer Daniels Midland of Decatur, Illinois, and Cargill of Minneapolis, Minnesota, felt the pinch from rising prices and complained to the C.B.O.T. Said one trader: ‘Older, established firms ganged up on the new, foreign kid on the block.’ With prices taking a near panic dive, Ferruzzi has already lost an estimated \$10 million. Harder hit may be U.S. soybean farmers, who last week saw the value of their total crop fall an estimated \$500 million.”

1262. Bonkowski, Alexander T. 1989. The utilization of soy proteins from hot dogs to haramaki. In: T.H. Applewhite, ed. 1989. *Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs*. Champaign, IL: American Oil Chemists’ Society. xii + 575 p. See p. 430-38. [10 ref]

• **Summary:** Contents: Abstract. Introduction. The meat systems: Meat preservation. The emulsion system: Protein, example. Restructured meats: Procedures (preparation of the brine, preparation of hams for pumping, injection of soy protein brines into whole muscle tissue, coarse-ground blends, beef, pork or poultry patties), performance, other

products (dry sausage), semi-dry sausage formulations (basic semi-dry processing schedule, important factors to be watched), smoking and cooking, the basic steps for finishing meat products (reddening, preheating and equalization, hot air processing, baking, roasting, drying, drying [gentle mode], cooking, steaming and scalding, steps for problem-free heat processing). Address: Archer Daniels Midland Co., P.O. Box 1470, Decatur, Illinois 62525.

1263. Natufood B.V. 1989. Prijs-bestelboek [Natufood price list and catalog, July-Sept. 1989]. Fahrenheitstraat 18, 3840 BN Harderwijk, Netherlands. 73+ p. [Dut]

• **Summary:** See next page. This catalog of a Dutch natural foods distributor lists the farming method (organic or not), wholesale and retail prices for each product: Page 8: Witte Wonder tofu spreads (mushroom, chili, green peppercorn, garlic, paprika, celery), Lima Limapast contains sunflower seeds, miso, and soy flour. Page 30. Joannusmolen roasted soy flour. - *Sojameel* (Toasted).

Note. This is the earliest Dutch-language document seen (Nov. 2012) that contains the term “roasted soy flour.”

Page 31. Natufood defatted soy flour (sifted). Ad for the Vetara line of ready-to-eat foods, many of which contain TVP. Page 33. Avita soybeans (Avita Natufood’s organic food line). Natufood soybeans. Ad from Nutricia for canned powdered infant foods. Nutri-Soja complete infant food based on soy. Nutri-Soja Plus based on soy for infants that have been weaned. Page 34. Nutricia infant formulas: Nutrisoja in 400 gm or 1000 gm and Nutrisoja-Plus in 900 gm. Page 35. Avita little soybeans (regular and large, organic).

Page 36. Witte Wonder soybeans in tomato sauce. Ad for Vetara organic tofu, which is produced by Heuschen-Schrouff B.V. in a completely new facility under extremely sanitary conditions. It is made with organic soybeans with a natural coagulant (Serempi) in the traditional way. “Best quality, lowest price.” The product label (250 gm) is shown. Page 37. Refrigerated miso products made in Europe. Lima barley miso and rice miso, both unpasteurized. Page 38. Meat replacers. Seitan is sold by Vetara, Witte Wonder, Yakso, and Manna. Vetara herb tofu, Napolitan tofu, rice tofu, bali tofu, rames tofu, rames tempeh, Tjap Tjoy. Witte Wonder tofu in curry/pineapple sauce, and in peanut sauce. Ad for Vetara vegetarian burgers, frankfurters, and schnitzels.

Page 39. Soya meat replacers and vegetarian mixes: Lists 11 Vetara products based on or containing TVP (textured soy flour) or HVP (hydrolyzed vegetable protein). Nutana meat replacers (9 products). Jonathan natural tofu. Cenovis and Huegli bouillon tablets (14 types, probably contain miso). [Sjon Welters adds that Huegli, a multi-million dollar Swiss food company, owns a major part of Natufood B.V.]. Western bouillons (Miso): Lima barley and rice misos. Heiwa Hatcho miso and instant miso soup.

Huegli ad.

Page 42. Vegetarian refrigerated products: Vetara smoked tofu, natural tofu (EKO mark), saté tofu, vetaburgers with pineapple, with cheese & onion, natuburgers. Soyadrinks and desserts: Provamel (8 drinks and 6 desserts [puddings]). Lima (3 drinks).

Page 43. Seasonings: Vetara sweet soy sauce (Ketjap zoet). Yakso sweet soy sauce (Ketjap manis). Soy sauce. Lima shoyu (orange label) and tamari (blue label). Heiwa shoyu and tamari. Vetara shoyu. Page 44. Witte Wonder organic tofu dressings (Italian, Mexican, Garden herbs, or Natural). Mayonnaise and Tofunaise: Witte Wonder organic tofunaise (regular or with lemon).

Page 52. A. Vogel products: Vogel Sojaforce. Page 67. Natufood non-organic soynuts (natural, paprika, curry, or onion). A photo of the soynuts is given at the bottom of the page. Page 69. Non-organic soynuts in bulk (same 4 flavors as page 67). Page 73. Bulk defatted soy flour, and soybeans (organic or non-organic). Ad for Vetara Vegetable Bouillon, which probably contains soy. Address: Harderwijk, Netherlands. Phone: 03410-23240.

1264. Noguchi, Akinori; Isobe, S. 1989. New food proteins, extrusion processes and products in Japan. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists’ Society. xii + 575 p. See p. 375-81. Contains 5 tables and 9 figures. [9 ref]

• **Summary:** Contents: Abstract. Introduction. Wet extrusion cooking of defatted soy flour: Influence of barrel temperature and pH on the extrudate strength, thermoelasticity of soy protein and application of injection molding, possible model of texturization process of DSF [defatted soy flour] in extruder. Some examples related to TVP [textured vegetable protein] research by the Association of Research and Development on Extrusion Cooking: Preparation of very porous TVP from soy protein concentrate, sterilization and granulation of wet okara for making “Tenpei” and culture media for mushroom. A photo shows one of the authors.

Figure 1 shows Japanese production of vegetable protein products (ingredients made from wheat or soy protein) in 1975, and yearly from 1983 to 1987. It increased from 37,000 tonnes in 1975 to 60,000 tonnes in 1987, but growth was static from 1983 to 1987. In 1987 59% of the total was soy protein and 41% was wheat protein.

Figure 2 shows Japanese 1987 production of four types of vegetable protein ingredients: Soy flour 18,000 tonnes, Soy fiber or granules (90% is frozen) 17,000 tonnes; Wheat fiber or granule (2% is frozen) 15,000 tonnes; wheat protein flour 8,000 tonnes. Address: Food Engineering Lab., National Food Research Inst., 2-1-2, Kannondai, Tsukuba, Ibaraki 305 Japan.

**PRIJS- BESTELBOEK**

**Natufood**

TELEFONISCHE VERKOOP  
(VOOR DE BESTELLING)

**03410-16078**



**ALGEMENE INFORMATIE**  
**03410-23240**

PERIODE:  
JULI  
AUGUSTUS  
SEPTEMBER

**89/3**

**Broodbeleg**

**Dranken etc.**

**Koek en Versnaperingen**

**Graanprodukten verpakt**

**Warme maaltijd**

**Hulpmiddelen**

**Aanvullende voeding**

**Kosmetika Nonfood**

**Noten & Zuidvruchten verpakt**

**Grootverpakking**

**Folders**

1265. Smouse, Thomas H. 1989. Preparation and uses of dietary fiber food ingredients. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 334-40. Contains 8 tables and 2 charts. [47 ref]

• **Summary:** "Although dietary fiber has been an important ingredient in human nutrition since life began, recently it has become the subject of many studies and much research. Only about ten published articles per year appeared in the early 1970's, growing to over 400/year in the early 1980's."

Peter Cleave of Great Britain has received international fame as the father of the dietary fiber hypothesis. Another pioneer in the field is Hugh Trowell, also of the UK. Nutritionally dietary fiber has been associated with weight control, diverticulitis, duodenal ulcers, colon cancer, cholesterol reduction, and diabetes mellitus. A photo shows Thomas Smouse. Address: Archer Daniels Midland Co., 1001 Brush College Rd., Decatur, Illinois 62525.

1266. National Oilseed Processors Association. 1989. Yearbook and trading rules 1989-1990. Washington, DC. [iv] + 123 + 11 p. 23 cm.

• **Summary:** On the cover (but not the title page) is written: Effective August 1, 1989. Contents: Constitution and by-laws. Officers and directors. Executive office. Members. Associate members. Standing committees. Trading rules on soybean meal. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}), sampling of soybean meal {at origin} (automatic mechanic sampler, pneumatic probe sampler, probe sampler), sampling of soybean meal (at barge loading transfer facilities), official weighmaster application, semi-annual scale report, certification of installation of automatic sampler & mechanical divider (at origin), semi-annual certification of automatic sampler & mechanical divider (at origin), certification of installation of automatic sampler & mechanical divider (at barge loading transfer facility), semi-annual certification of automatic sampler & mechanical divider (at barge loading transfer facility), official referee laboratories (meal), official NSPA soybean meal sample bag. Soybean meal export trading rules: Minimum blending procedures for export meal blended at ports, sampling of soybean meal (at vessel loading facilities), weighing of soybean meal (at vessel loading facilities), certification of installation of automatic sampler & mechanical divider (at vessel loading facility), semi-annual certification of automatic sampler & mechanical divider (at vessel loading facility), semi-annual certification of scales at vessel loading facilities. Trading rules on soybean oil. Sales contract. Definitions of grade and quality of export oils. Soybean lecithin specifications. Appendix to trading rules on soybean oil: Inspection, grading soybean oil for color (NSPA tentative method), methods of analysis (A.O.C.S. official

methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses; soap stock, acidulated soap stock and tank bottoms (only method numbers listed), official weighmaster application, semi-annual scale report, official referee chemists (oil). Soybean oil export trading rules. Uniform soybean oil export contract. Foreign trade definitions (for information purposes only) Appendix 1.

The section on officers, executive committee, and board of directors (p. 7-8) gives the name, company affiliation, and phone number of each person. Officers (executive committee)—Chairman: James W. Lindsay, Ag Processing Inc a cooperative [AGP], Vice Chairman: C. Lockwood Marine, Central Soya Co., Inc. Secretary: John March, Cargill, Inc. Treasurer: John Burritt, National Sun Industries, Inc. Immediate past chairman: John G. Reed, Jr., Archer Daniels Midland Co.

Executive staff: President: Sheldon J. Hauck. Executive vice president: Brose A. McVey.

Board of directors (alphabetically by company; each member company may have up to two representatives on the board; only the first of these may vote): James W. Lindsay & William C. Lester, Ag Processing Inc a cooperative. John G. Reed, Jr. & Michael D. Andreas, Archer Daniels Midland Co. John March & Thomas O. Palmby, Cargill, Inc. C. Lockwood Marine & David H. Swanson, Central Soya Co., Inc. David B. Mulhollem & Bernard Steinweg, Continental Grain Co. Ian White & Donald G. Foster, Elders Oilseeds Inc. Merritt E. Petersen & Stan Eichten, Honeymead Products Co. John Burritt & Jeff Berkow, National Sun Industries, Inc. John M. Wright & Henry E. O'Bryan, Owensboro Grain Co., Inc. Sewell L. Spedden & William Bohan, Perdue Incorporated. Paul D. Otto & J. Richard Galloway, Quincy Soybean Co. James K. Smith & Richard E. Bell, Riceland Foods, Inc. Thomas L. Harper, Southern Soya Corp. D. Daryl Houghton & P. Coleman Townsend, Townsends, Inc.

Executive office, Washington, DC: President, Sheldon J. Hauck. Executive vice president: Brose A. McVey. Administrative asst.: Steven C. Kemp. Legislative asst.: Elizabeth A. Loudy. General counsel: Elroy H. Wolff, Sidley & Austin. Special counsel: Richard O. Cunningham, Steptoe & Johnson.

Members (listed alphabetically by company; within each company, first the name of the official Association representative {who is on the Board and votes}, followed by the other personal members listed alphabetically by surname. For example, Archer Daniels Midland Co., the company with the most personal members, has 34. After the name of each personal member is given with his address and phone number. In the listing below, the number of personal members is shown in parentheses after the name of each company, followed by city and state of the various locations): Ag Processing Inc a cooperative (21); Van Buren,

Arkansas; Eagle Grove, Iowa; Manning, Iowa; Mason City, Iowa; Sergeant Bluff, Iowa; Sheldon, Iowa; Dawson, Minnesota; St. Joseph, Missouri. Omaha, Nebraska. Archer Daniels Midland Co. (23); Archer Daniels Midland Co. (24); Little Rock, Arkansas; Augusta, Georgia; Valdosta, Georgia; Decatur, Illinois; Galesburg, Illinois; Granite City, Illinois; Taylorville, Illinois; Frankfort, Indiana; Des Moines, Iowa; Fredonia, Kansas; Destrehan, Louisiana; Mankato, Minnesota; Red Wing, Minnesota; Kansas City, Missouri; Mexico, Missouri; Clarksdale, Mississippi; Fremont, Nebraska; Lincoln, Nebraska; Fostoria, Ohio; Kershaw, South Carolina; Memphis, Tennessee. Cargill, Inc. (20); Osceola, Arkansas; Gainesville, Georgia; Lafayette, Indiana; Cedar Rapids, Iowa; Des Moines, Iowa; Iowa Falls, Iowa; Sioux City, Iowa; Washington, Iowa; Bloomington, Illinois; Chicago, Illinois; Wichita, Kansas; Burnsville, Minnesota; Minneapolis, Minnesota; South Savage, Minnesota; Wayzata, Minnesota; Kansas City, Missouri; Fayetteville, North Carolina; Raleigh, North Carolina; Sidney, Ohio; Memphis, Tennessee; Chesapeake, Virginia. Central Soya Co., Inc. (13); Gibson City, Illinois; Decatur, Indiana; Fort Wayne, Indiana; Indianapolis, Indiana; Belmond, Iowa; Bellevue, Ohio; Marion, Ohio; Delphos, Ohio; Chattanooga, Tennessee. Continental Grain Co. (8); Guntersville, Alabama; Chicago, Illinois; New York City, New York. Elders Oilseeds Inc. (3); Culbertson, Montana; Blaine, Washington. Honeymead Products Co. (3); Mankato, Minnesota. National Sun Industries, Inc. (3); Minneapolis, Minnesota. Owensboro Grain Co., Inc. (4); Owensboro, Kentucky. Perdue Incorporated (4); Salisbury, Maryland; Cofield, North Carolina. Quincy Soybean Co. (6); Helena, Arkansas, Quincy, Illinois. Riceland Foods, Inc. (7); Stuttgart, Arkansas. Southern Soya Corp. (2); Estill, South Carolina. Townsend's Inc. (2); Millsboro, Delaware.

Associate Members: ADM Agri-Industries Ltd., Windsor, Ontario, Canada. Beatrice / Hunt-Wesson, Fullerton, California. Best Foods, a Unit of CPC International Inc., Englewood Cliffs, New Jersey. Bestel Inc., Minneapolis, Minnesota. C&T Refinery, Inc., Richmond, Virginia. Con Agra Poultry Co., El Dorado, Arkansas. Conti-Quincy Export Co., New York City, New York. Louis Dreyfus, Wilton, Connecticut. Empire Kosher Poultry, Inc., Mifflintown, Pennsylvania. Garnac Grain Co., Overland Park, Kansas. Goldman Sachs-J. Aron Div., New York City, New York. K&L Feeds, Inc., Selinsgrove, Pennsylvania. Kraft Food Ingredients Corp., Glenview, Illinois; Memphis, Tennessee. Krohn Trading Limited Partnership, New Orleans, Louisiana. Lever Bros Company, Inc., New York City, New York. Overseas Commodities Corp., Minneapolis, Minnesota. Pilgrim's Pride Corp., Pittsburg, Texas. Pillsbury Co. (The), Overland, Kansas; Minneapolis, Minnesota. Procter & Gamble Co., Cincinnati, Ohio. Purina Mills, Inc., St. Louis, Missouri. Ralston Purina Co., St. Louis, Missouri. Schouten International, Inc., Minneapolis, Minnesota. A.E.

Staley Manufacturing, Decatur, Illinois. Alfred C. Toepfer International, Inc., New York City, New York (Knud Winkelman). Tradecom, Inc., Boca Raton, Florida. Van Den Bergh Foods Co., Chicago, Illinois.

Standing committees: For each committee, the function of the committee, the names of all members (with the chairman designated), with the company and company address of each are given—Crusher committees: Canola, flaxseed, safflower seed, sunflower seed. International trade policy. Soybean meal trading rules. Soybean oil trading rules. Safety, health, and loss prevention. Technical. Address: 1255 Twenty-Third St., N.W., Washington, DC 20037. Phone: 202/452-8040. Telex: 248959. Fax: 202/833-3636.

1267. **Product Name:** Unisoy Soya Yogart [Raspberry, Strawberry, Black Cherry, Peach Melba].

**Manufacturer's Name:** Unisoy Milk 'n' By-Products Ltd. (Marketer). Made in southern England by Bridge Farm Dairies. Made since late 1990 in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer's Address:** Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire, England. Phone: 061-430 6329.

**Date of Introduction:** 1989 August.

**Ingredients:** Raspberry (1994): Soya milk, apple juice, raspberries, vegetable oil, emulsifier (vegetable monodiglycerides), stabiliser (pectin), natural raspberry flavour, Bulgarian cultures, colour (beetroot red).

**Wt/Vol., Packaging, Price:** 125 gm plastic cup.

**How Stored:** Shelf stable, 4-month shelf life at room temperature. Refrigerate after opening.

**Nutrition:** Per 100 gm.: Energy 266 Kjoules / 63 Kcal (calories), protein 2.7 gm, carbohydrate 10.5 gm, fat 1.4 gm, cholesterol 0.0 gm.

**New Product—Documentation:** Talk with Neil Rabheru of Unisoy. 1990. July 2. Followed by letter (fax) of July 9. "This product was launched in Aug. 1989 to replace White Wave Soya Yogart. It is now offered in 125 gm servings. Again it is the first product on the market which had the fruit (such as raspberry) preserved in apple juice (instead of sugar), used organic soyamilk, and was sweetened with pure apple juice. Note that the original Honey & Muesli flavor has been dropped and replaced by Peach Melba flavor.

Talk with Neil Rabheru of Unisoy. 1991. Sept. 16. The Haldane Foods Group has about 100% of the soy yogurt market in the UK. These products are still on the market and doing well. Archer Daniels Midland Co. 1991. Annual Report. Sept. Page 12 states: "Genice Limited added more yogurts and non-dairy ice creams to its product range."

Interview with Neil Rabheru of Unisoy. 1991. Sept. Unisoy was acquired by the Haldane Foods Group on 21 Dec. 1990. This has proved to be a very positive development for Unisoy. The company now makes only soyomilk. Other companies in the Haldane Foods Group now

make the other soy products that Unisoy used to make—which is more efficient. For example, Genice Foods Ltd. makes soy margarine, yogurts, and ice creams.

Archer Daniels Midland Co. 1992. Annual Report. Sept. Page 8 states: “Genice Ltd.—Wales: Manufactures non-dairy ice cream, soya yogurt, yogice soya cream and specialty margarines.”

Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 4 and 8. Unisoy Soya Yogurt was made by Genice starting in late 1990 in 3 flavors—raspberry, peach melba, and black cherry. Genice made these yogurt products for Unisoy before they joined the Haldane Group; before that, they were made by Bridge Farm Dairies in southern England—which attempted to make a shelf-stable product using dairy technology.

Label (cup for Raspberry) sent by Genice. 1994. Feb. 18. 120 gm plastic cup. Red, pink, green, and blue on white. Illustration of strawberries. “Naturally sweetened with apple juice. Non-dairy.” Haldane Foods Group, Cromwell Rd., Bredbury, Stockport, SK6 2RF England. The word “organic” does not appear on this container.

1268. United States District Court—Central District of Illinois. 1989. Ralston Purina Company, a corporation, Plaintiff, v. A.E. Staley Manufacturing Company, a corporation, Defendant. Supplemental findings of fact and conclusions of law pursuant to Rule 52. Case No. 84-1378. 5 p. Decided Sept. 6, 1989. Unpublished manuscript.

• **Summary:** Ralston has sued A.E. Staley for infringement of patent number 3,940,495, which was issued from the application of Ronald Flier (the “Flier application”). The Flier application was filed initially in 1964; a continuation-in-part application was filed in 1966 and a continuation was filed in 1973. The patent was issued in 1976. Staley asserted the defense of inequitable conduct.

The ADM Dutch Patent Application No. 6506477 was a printed publication, with a publication date of 22 Nov. 1965. “A reasonable examiner would have considered it highly material in determining whether to allow the 1966 Flier application or the 1973 Flier application issue as a patent.”

The record establishes by clear and convincing evidence that Robert Brukart, the manager of Ralston’s patent department, knew of the publication date of the ADM Dutch application and knew that the ADM Dutch application constituted a statutory bar to subject matter in the 1966 and 1973 Flier applications that was not supported in the 1964 Flier application. It is clear that Brukart knew the materiality of the ADM Dutch application and intended to conceal that information from the Examiner. “Further, the record demonstrates by clear and convincing evidence that Mr. Brukart intended to deceive, and did deceive the Examiner as to the ADM Dutch application in 1973.”

The court finds no evidence whatsoever that the Examiner considered the Dutch application. The Examiner

expressly informed Ralston on three occasions that he would not consider the prior art until only the most pertinent prior art was presented as was required by the PTO rules. Ralston’s submission of prior art never conformed to the required format. In addition, the ADM Dutch application is not listed among the cited art on the face of the patent. The court rules that patent no. 3,940,495 (the Flier patent) “is held to be unenforceable by virtue of inequitable conduct.”

1269. *SoyaScan Notes*. 1989. Pioneers in vacuum packaging tofu. Its pros and cons (Overview). Sept. 19. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** In late 1977 Redwood Natural Foods Inc. in Santa Rosa, California, became the world’s first company to vacuum package tofu. The pioneer there was Greg Hartman (whose photo appears in the Sept. 1983 issue of *Health Foods Business*, p. 80). Redwood used tofu made by Quong Hop & Co. and distributed and sold the organic tofu under their own brand. An illustration of the machine and description of the process is given in *Tofu & Soymilk Production* by Shurtleff & Aoyagi (1984, pp. 23 & 72; In about 1978 Shurtleff & Aoyagi visited Hartman at Redwood Natural Foods and observed his packaging process).

Since that time, many companies have switched to vacuum packaging their tofu. Pioneers in the USA included: Quong Hop & Co. Jan. 1979, Summercorn Foods Sept. 1979, Nasoya Foods 1981, Zakhi Soyfoods 1981, Pacific Trading Co. 1981, Lecanto Tofu 1981, Swan Gardens 1982, White Wave 1983, Farm Soy Dairy 1985, Island Spring 1985.

Pioneers in Europe included: Aros Sojaprodukter in Sweden 1982, Manna Natuurvoeding in the Netherlands 1982, Auenland Tofu in West Germany 1983, Tofuhaus Tiefenthal in West Germany 1983, and Haldane Foods in England 1985.

A few companies (such as Nasoya) have even dropped vacuum packing and switched back to water pack. Companies using relatively small chamber-bag batch-type machines seem happiest with the technology and have had few problems. Companies using larger, continuous process roll-stock machines have often had ongoing, serious problems.

Advantages of vacuum packaging, in approximate order of importance, are: (1) The package is familiar to consumers and it makes tofu look quite similar to cheese, a related and popular food product; first-time tofu users are not turned off by a cake tofu floating in a pale yellow liquid (which reminds some consumers of a fetus floating in formaldehyde in a biology lab). No other food in the western world besides tofu is sold floating in water. Yet the water that surrounds the tofu inside the vacuum pack detracts from its appearance. Some have even said that the resulting package reminds them of a used condom! (2) Because the tofu is packaged without water, it is much lighter and less bulky, which cuts shipping costs and can expand market areas; (3) Nigari-type tofu

retains most of its natural sweetness, which is leached off in water-pack tofu; (4) Vacuum packaging is generally thought to give the product a longer shelf life than water pack. Typical companies date their tofu for an 18-21 day shelf life; (5) The cost of the package itself is less for vacuum packing, BUT the additional labor required for packaging and labeling with a batch-type machine may make the total packaging cost more than for water pack.

Disadvantages of vacuum packaging, in approximate order of importance, are: (1) Most Asian-Americans, especially first generation Asian-Americans, strongly prefer water pack, to which they are accustomed; (2) Vacuum packed tofu is much more susceptible to damage than water-packed tofu in a rigid plastic tub, unless the vacuum pack is surrounded by a fairly rigid box; (3) It is difficult to vacuum pack soft tofu, which is the texture preferred by many Japanese; (4) Unless the tofu is immersed in chilled water for 6-12 hours before vacuum packing, the yellow whey in the tofu may leech out and collect inside the package, giving the tofu a unappealing yellow hue.

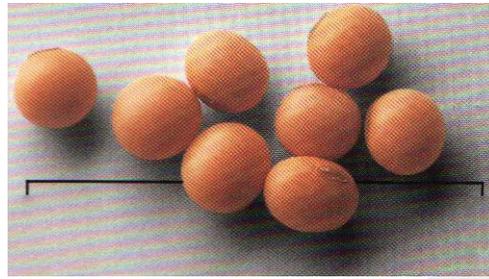
One example of a company that has had problems is White Wave Inc. in Boulder, Colorado, which in May 1983 bought a used Tiromat vacuum packager. Thereafter everything went wrong, so much so that that one machine “almost broke the company’s back.” President Steve Demos later called it “the curse of the Devil,” and his production manager would sometimes ask, only half in jest, “Do you think we are sitting in vacuum packaging hell?” Demos notes: “Tofu is a very difficult product to vacuum pack, though firm tofu is easier than soft. In our case, about 30% of the problems have been caused by the machine, 30% by the product, 30% by the operator, and the rest is absolute bad karma. The process was unforgiving, as was the Tiromat’s maker, which gave White Wave almost no help.” But by Oct. 1989 White Wave had worked the bugs out of their vacuum packing system and now prefers it to water pack.

1270. Archer Daniels Midland Co. 1989. Annual report. P.O. Box 1470, Decatur, IL 62525. 33 p.

• **Summary:** Net sales for 1989 were \$7,929 million, up 16.6% over 1988. Net earnings for 1989 were \$424 million, up 20.1% over 1988.

Page 5: Under “Oilseed Processing Operations” is a color photo of eight soybeans and a list of “Products made from soybeans.” The last paragraph (p. 5) reads: “A number of new lecithin products were introduced this year by ADM Ross & Rowe, a volume leader in lecithin since 1926. Ross & Rowe is a vertically integrated processor / refiner marketing quality lecithin products worldwide. Five locations in the United States and one in Canada combine to market large volumes of a wide selection of lecithins.”

A full-page color photo (p. 6) shows soy sausages and soyburgers. A caption notes: “The soy foods operations of British Arkady last year sold enough frozen soyburgers, soy



sausages and mixes to provide over 50 million servings.” Address: Decatur, Illinois.

1271. Leatherhead Food Research Assoc. 1989. Vegetarianism and the consumer: Implications for the UK food industry. Leatherhead Food Research Assoc., Randalls Rd., Leatherhead, Surrey, England. vi + 118 p. Oct. No index. 30 cm. Price: £2,700. [2 ref]

• **Summary:** Contents: Foreword. List of 27 tables. List of 16 figures. Management summary. 1. Introduction: Scope of the research, aims, objectives, research method. 2. Profile of consumers reducing / excluding meat / meat and fish from their diet: Definitions, levels of reduction/exclusion of meat/meat and fish consumption, demographic profile, length of time following current eating pattern. 3. Reasons for reduction/exclusion of meat consumption: Summary of reasons for change amongst adults, reasons for change by demographic profile of adult consumers, summary of reasons for change amongst children, reasons for change by eating pattern of consumers. 4. Future potential of vegetarianism and reduced meat consumption: Consumer intentions, reasons for change. 5. Implications for food consumption habits of the exclusion of/reduction in meat and fish consumption: Changes made to in-home consumption patterns by consumers avoiding meat completely, changes made to in-home consumption patterns by consumers reducing consumption of meat, changes made to out-of-home food consumption patterns by consumers avoiding meat, changes made to out-of-home food consumption patterns by consumers who had reduced meat consumption. 6. Trends in consumption of meat and fish: Introduction, meat, fish. 7. Trends in consumption of meat and fish alternatives: Introduction, vegetables, salad and fruit, alternative protein sources, animal-derivative-free products, overview of vegetarian product introductions to the UK, development of vegetarian products within the catering market, development of novel vegetarian products worldwide. 8. Consumer purchasing criteria for vegetarian food: Introduction, distinctiveness of product, retailer and manufacturer preferences, level of healthy eating concern, level of reaction to food ‘scares’, level of environmental concern. 9. Conclusions.

In the section on “Alternative protein sources” the subsection on “Meat imitations” states that Realeat Vegebangers, Cauldron Foods Tofu Burgers, Granose Soya

Franks and Spicy Links, Protoveg Sosmix, Direct Foods Smokey Snaps, Marks & Spencer Vegetable Cutlets are all on the market (p. 72). Realeat was the pioneer in introducing vegetable burgers (Vegeburgers) and frozen burgers to the health-food trade; they were introduced to supermarkets in about 1986/87. The Vegeburger brand, now owned by Haldane Foods, includes Cheese Vegeburger, Vegebangers, and ready meals. Companies that have introduced vegetable burgers in the last four years include Direct Foods, Vegetarian Feasts, Granose Foods, Tivall, Cauldron Foods, Booker Health Foods, Brewhurst, The Dietburger Company, Realeat, Birds Eye Walls, and supermarket brands. In 1987 Cauldron Foods launched a range of three varieties of tofu burger in vacuum packs; cheeseburgers were launched by both Realeat and The Dietburger Company. In April 1988 Birds Eye Walls launched its Steakhouse vegetable burger and Granose Foods launched four varieties of frozen burgers, incl. Soya & Mushroom, and Nut & Sesame varieties. Tesco introduced a vegetarian burger under its own brand; it was made by Tivall from soya and wheat. In 1989 Realeat (Haldane Foods) introduced a microwaveable Quarter Pounder Burger. In 1985 Granose Foods launched Soya Franks, a meatless sausage. Realeat launched Vegebanger, which includes soya. In 1986 Direct Foods launched a soya-based Sausage Slice and Tivall introduced vegetable protein sausages. In 1987 The Dietburger Company launched an all-vegetable frozen dietbanger and Granose Foods launched Vegetarian Spicy Links. In 1988 Goodlife Whole Foods launched Herb Bean Bangers and Spicy Bean Bangers; Buss Foods introduced a vegetarian sausage, Realeat introduced a frozen Vegebanger, and Granose Foods added a vegetarian sausage to its Wholefoods Kitchen range (p. 76). Address: Leatherhead, Surrey, England.

1272. Ferrari, Ronald. 1989. ADM's new Advanced Nutrition concept and consumer retail soy products (Interview). *SoyaScan Notes*. Nov. 1. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ron has been hired away from SRI (formerly Stanford Research Inst.) in Palo Alto to be the market development manager of a new department at ADM under the Protein Specialties Division. He hopes to develop a new line of consumer soyfood products for ADM, which has traditionally focused on commodities. These new products will probably not be based on TVP. This could be an development of major importance to the soyfoods industry. Address: Market Development Manager, Advanced Nutrition Dep., ADM, Decatur, Illinois.

1273. Golbitz, Peter. 1989. Soya Newsletter to change to a quarterly magazine in January, 1990 (Interview). *SoyaScan Notes*. Nov. 6. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The new publication, which will be called

Soya International, is projected to be 28-32 pages long. The last issue of this year will be a "double issue." There is too much to report on and too little space in a small format. The newsletter is not coming out quickly enough to be a "hot news" publication. And they want to make the focus more international in scope. He has connections in various parts of the world to gather more information. He wants to cover more of the modern soy processing end to broaden the publication's market, but still limit the scope to human edible products. He will guarantee a circulation of at least 1,000 per issue, even if there are not that many subscribers. He may have limited trial subscriptions to major soy companies. For example, ADM buys 53 copies of the *Soya Bluebook* but only 2-3 newsletters. The magazine, which is still in an early, maturing stage, will be near a break-even proposition for the next few years at least; the *Bluebook* is doing great.

One upcoming story will be on Innoval, a continuous tofu-making system that uses ultrafiltration, developed by Alfa-Laval, STS/DTD, etc. Address: Bar Harbor, Maine.

1274. Fitch, Peter. 1989. Re: Haldane Foods Group Ltd. Letter to William Shurtleff at Soyfoods Center, Nov. 27. 1 p. Typed, with signature on letterhead.

• **Summary:** The Haldane Foods Group consists of Direct Foods Ltd., Haldane Foods Ltd., Realeat Foods Ltd., Regular Tofu Co. Ltd., Vegetarian Cuisine Ltd., and Vegetarian Feasts Ltd. Haldane became part of the British Arkady Group in January 1988. Brian Welsby has left the company.

Fitch gives a phone number for Michael Cole in the UK. He also encloses a catalog (and price list) titled Haldane Foods Group, which lists and contains color photos of all products made by the six member companies. The catalog subtitle is "Europe's leading healthier food group." Address: Managing Director, Haldane Foods Group Ltd., 25 Hayhill, Sibley Rd., Barrow upon Soar, Leicestershire LE12 8LD, England. Phone: 050981-6611. Fax 050981-6381.

1275. Haldane Foods Group Ltd. 1989. Haldane Foods Group. 25 Hayhill, Sibley Rd., Barrow upon Soar, Leicestershire LE12 8LD, England. 6 p. Manufacturer's catalog. Full color.

• **Summary:** The Haldane Foods Group consists of Direct Foods Ltd., Haldane Foods Ltd., Realeat Foods Ltd., Regular Tofu Co. Ltd., Vegetarian Cuisine Ltd., and Vegetarian Feasts Ltd. The catalog, subtitled "Europe's leading healthier food group," lists and contains color photos of all products made by the six member companies. A UK trade price list (effective 2 Oct. 1989), attached separately, gives product size, case size, and trade and retail prices in British pounds. Address: Leicestershire, England. Phone: 050981-6611. Fax 050981-6381.

1276. McElfresh, Dinah. 1989. Recent developments at the Soy Protein Council (Interview). *SoyaScan Notes*. Dec. 27.

Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The Soy Protein Council now has only 3 members: ADM, Cargill, and Central Soya. The last to leave was Grain Processing Corp. in 1987. Ralston Purina left because they wanted to focus on isolates and dues dollars were being spent more on generic promotion. They had previously been very active. SPC is on good terms with Ralston and still works with them occasionally on regulatory issues. Before the recent spate of mergers and acquisitions, the board had directed SPC to do some promotional activities. Now with the limited membership the board has advised that they want to focus on monitoring and tracking regulatory issues, mainly in the USA and mainly on labeling of consumer products. They are working with USDA and FDA on review. The institutional market continues to be strong and acceptability is high.

SPC is now totally independent of NSPA/NOPA and has been for many years. It used to be a committee of NSPA and she thinks it became independent in 1971 at the time the committee became the Food Protein Council. The last news release by SPC was when FNS (USDA's Food & Nutrition Service) opened the School Lunch Program to all vegetable proteins.

There used to be Associate Members like Lipton and Quaker Oats and others that used the products. They were not voting members but they participated in meetings. This was discontinued in the 1970s. Address: 1255 Twenty-Third St., N.W., Washington, DC 20037. Phone: 202-467-6610.

1277. *Soya Newsletter (Bar Harbor, Maine)*. 1989. ADM plans to expand soy protein facility. Sept/Dec. p. 12.

• **Summary:** "Archer Daniels Midland Company announced that they will be building a \$70 million soy protein complex at its soybean processing plant in Europoort, Holland. Construction of the complex will begin when necessary permits are issued, and officials expect the complex to be in operation by the end of 1990, or very soon thereafter.

"The expansion will provide facilities to produce soy flour, soy protein concentrate, isolated soy protein, and textured soy products... 'Europe has lowered the support for dairy products and consequently the supply of milk and other dairy products has dropped, making prices higher, and creating a market for soy proteins...'

"The processing plant at Europoort has been used for oil extraction to date, but with the continued growth of the European market, and new possibilities developing in the Soviet Union, this expansion holds great promise for ADM."

1278. *SoyaScan Notes*. 1989. Major soy-related company acquisitions and mergers worldwide 1970-1989 (Overview). Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** 1970 March—Miles Laboratories of Elkhart, Indiana (most famous as the maker of Alka-Seltzer) acquires Worthington Foods of Worthington, Ohio (most famous for

its Morningstar Farms line of meat alternatives), making it a wholly owned subsidiary.

1973 Jan. 15—ADM acquires 50% of British Arkady Holdings Ltd. and its subsidiary British Arkady Co. Ltd. of Old Trafford, Manchester, England.

1977 (late)—Bayer A.G. of Germany (makers of Aspirin) acquires Miles Laboratories of Elkhart, Indiana; as part of the deal they Worthington Foods, a subsidiary of Miles.

1979—Bunge Corp. acquires Lauhoff Grain Co. of Danville, Illinois.

1982 Oct. 15—Worthington Foods is repurchased from Miles Laboratories by a group of three Seventh-day Adventist investors in a leveraged buyout. During the 12 years under Miles, sales increased five-fold. Sales volume in 1983 was an all-time high. The company employed 250 people.

1983 April 21—Hybritech Seed International, Inc., a wholly-owned subsidiary of Monsanto Company, purchases the Jacob Hartz Seed Co. of Stuttgart, Arkansas.

1983—House Food Industrial Co., Ltd. of Japan purchases 50% ownership in Yamauchi Enterprises (formerly Hinode Tofu Co., owned by Mr. Shoan Yamauchi) in Los Angeles. The company is renamed House Foods & Yamauchi, Inc.

1985 May 31—Barricini Foods Inc. acquires Farm Foods (makers of Ice Bean soy ice cream) of Summertown, Tennessee.

1985 March—British Arkady acquires Direct Foods Ltd.  
1986 Feb.—British Arkady acquires Vegetarian Feasts Ltd.

1986 Dec. 1—White Wave acquires Soyfoods Unlimited, Inc. of San Leandro, California. It is White Wave's first acquisition.

1987 Aug.—British Arkady acquires Haldane Foods Ltd. and Regular Tofu Co. Ltd. It also acquires Vegetarian Cuisine Ltd. in 1987.

1987 Oct.—The Ferruzzi Group in Ravenna, Italy, acquires Central Soya Co. in Ft. Wayne, Indiana.

1987 Dec. 31—ADM acquires the rest of British Arkady Holdings Ltd. so that it now owns 100%.

1988 Jan.—The British Arkady Group acquires Haldane Foods.

1988 Feb.—Westbrae Natural Foods (of Berkeley, California, maker of soymilk) is merged with and becomes a wholly-owned subsidiary of Vestro Foods, a publicly traded company in City of Commerce, Southern California. Most of Westbrae's top management decides not to stay with the company.

1988 Sept.—Haldane Foods Group acquires Realeat Foods Ltd.

1989 Feb.—Haldane Foods Group acquires Saucemasters Ltd. It also acquires Genice Foods Ltd. in March 1989.

1989 Feb. 16—Edward Lowe of Michigan, the inventor of Kitty Litter, purchases the majority of shares in INARI

Ltd. from Len and Irene Stuttman; but they kept a minority ownership in the company.

1989 April–Huegli Naehrmittel A.G. acquires Yamato Tofuhaus Sojaprodukte of Tuebingen, Hirschau, West Germany. Note: This is the earliest record seen (Feb. 2013) that mentions Huegli in connection with soy.

1989 April 22–Lima Foods of Belgium acquires Jonathan P.V.B.A. of Belgium.

1989 Sept.–Lima Foods of Belgium is purchased from Vibec by Euronature (pronounced as in French, YU-ro nA-TYUR), a large international food company headquartered in Paris, France.

1279. *Yearbook and Trading Rules*. 1989-2000. Serial/periodical. National Oilseed Processors Association. Annual. • **Summary:** Preceded by: Year Book and Trading Rules. Issued annually to all members of the association. The 1981-82 Year Book, for example, was spiral bound and 23 cm high. The last published yearbook was 2000-2001. Thereafter, most of the information appeared on the association's website nopa.org.

Letter (e-mail) from Kathy Pennington, office administrator of NOPA. 2005. Aug. 15. NOPA no longer publishes the Yearbook & Trading Rules. In 2003, when she joined NOPA, it was available online only with purchase. Beginning in 2004 NOPA made the trading rules available to all on its website. Names and contact information for the officers and board members, are listed under "About us–Board and staff. The member companies names, headquarter addresses, headquarter phone numbers, and weblinks are under Membership." The detailed membership roster (contact information, committee membership, etc.) is available to Members Only. HOPA has no extra printed copies at all; they have only one copy of each Yearbook for their records. Address: 1800 M. St., N.W., Washington, DC 20036.

1280. **Product Name:** [Soya Flakes, Soya Granules, Soynuts (Curry, Herbs, or Spices), Soy Coffee].

**Foreign Name:** Soja Flocken, Soja Granulat, Soja Knabbers, Soja Kaffee.

**Manufacturer's Name:** Die Sojabohne.

**Manufacturer's Address:** Goltsteinstr. 43a, D-5000 Cologne 51, West Germany.

**Date of Introduction:** 1989.

**New Product–Documentation:** Brochure. 1989. "Rezepte & Informationen zu unseren Soja Produkten" [Recipes and information on our soy products]. 8.5 by 11 inches. Black on green. 6 panels. A black-and-white photo on the front panel shows packages of the company's various soy products. The soy flakes are used to make Muesli, Sauerkraut Patties (Puffer), Soya & Mushroom Soufflé, Soya Corn Pudding, and Soya Cabbage. The granulat is probably TVP.

1281. Doborjan, Karolyne; Goenczi, Ildiko. comps. 1989. *Eteleink szojaval. Masodik kiadas* [Our soya foods. 2nd ed.]. Budapest, Hungary: Feherjetechnologiai Tudomanyos Termelesi Egyesules (Association for Protein Research Technology and Production). 48 p. [Hun]

• **Summary:** This is a soyfoods cookbook, compiled by two Hungarian women, with recipes using tofu, soymilk, and TVP.

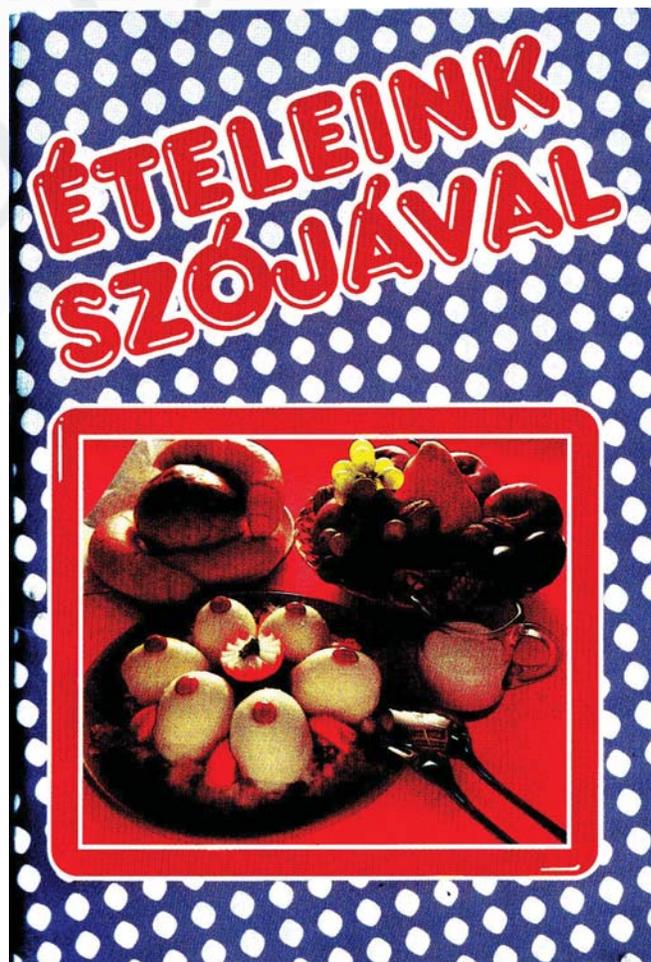
Contents: Introduction. I have prepared it and enjoyed it: List of products and first courses. Soups. Main courses. Desserts, candies and cakes. Beverages. The introduction gives a short account of the aim of the booklet: to serve as a guide for the reader to the use of different soy products. Address: Budapest XII., Goldmark K. u. 3. Budapest Pf: 340 1536, Hungary. Phone: 155-52-02.

1282. **Product Name:** So Good Soya Milk [Regular, or Sugar-Free Organic].

**Manufacturer's Name:** Haldane Foods Ltd. (Importer-Distributor). Made in Australia by Sanitarium Foods.

**Manufacturer's Address:** 25 Hayhill, Sileby Road, Barrow upon Soar, Leicestershire LE12 8LD, England. Phone: 050981-6611.

**Date of Introduction:** 1989.



**Wt/Vol., Packaging, Price:** 1 liter Tetra Brik Aseptic carton. Retail for £0.69.

**How Stored:** Shelf stable; refrigerate after opening.

**New Product–Documentation:** Haldane Foods Group catalog and price list. 1989. Oct. 2. This product is listed in both documents under the Haldane Foods Ltd. product line. A color photo in the catalog shows the label (1 liter carton). It has black lettering and vertical stripes on a white background. On the front panel is an impressionistic sketch of a snow-capped mountain in the distance with several soybean plants growing in the immediate foreground.

Talk with Philip Marshall of Cauldron Foods. 1990. July 9. Haldane's soymilk used to be called Sojal. They may have lost the fight over the name. It is very likely that the Haldane group has this product made by some company outside of the group. They do not have the equipment needed to make a quality soymilk. There is no connection with Sanitarium Foods in Australia.

1283. Leneman, Leah. 1989. *Slimming the vegetarian way*. Revised and reset ed. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 144 p. Index. 20 cm. 1st. ed. 1980.

• **Summary:** The menus in this natural-foods, vegan cookbook are designed for 1 person and the daily calories intake is kept at about 1,000 calories. The book takes a positive attitude toward dieting by focusing on those foods you can eat, rather than those you should avoid. Each "menu" consists of breakfast, lunch, and dinner for 1 day. For each meal there is one column for Imperial (Metric) measurements, one for American measurements, and one for calories, with a calories for each meal and for the day. There are menus for each of the four seasons plus chapters on crash diets, desserts, and a vegetarian wholefood calorie chart.

The preface to the new edition notes: "The greatest change which has occurred since the first edition of this book appeared has been the phenomenal proliferation of soya foods (soyfoods in American parlance). Tofu is arguably the best friend a slimmer ever had, for no other food so low in calories and high in protein is as versatile as tofu. Tempeh is another fine soya food for slimmers, though as it is not as readily available as tofu, I have confined its use to only one recipe. Since soya milk and yogurt are now so easy to obtain, I have given them as alternatives to the dairy versions, so that vegans, and others trying to cut down on dairy produce, will be able to use the book in the same way as lacto-vegetarians."

Soy-related recipes include: Pineapple tofu salad (p. 36). Tofu celery loaf (p. 39). Tofu-stuffed aubergine (eggplant, p. 66). Scrambled egg or tofu, sausalata and tomato (p. 89, 118). Tofu slices on toast with creamy gravy (p. 98). Miso soup with tofu (p. 102). Spaghetti with tempeh and mushroom sauce (p. 127). Vegetable charlotte with smoked tofu (p. 129). Soya milk and soya yogurt are always listed as

alternatives to skim milk or yogurt from cows. TVP is used as an ingredient in many recipes, and "Tamari (soy sauce)" is widely used as a seasoning. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

1284. Metcalfe de Plata, Edith. 1989. *Mexican vegetarian cooking*. Rochester, Vermont: Healing Arts Press, a division of Inner Traditions International, Ltd. 128 p. Illust. by Clive Birch. Index. 22 cm.

• **Summary:** Chapter 7, titled "Soybeans" begins: "Soybeans are full of vitamins A, E, K, B-1, B-2, potassium and lecithin." They are processed into many forms: "grits, meal, powder, flour, nuts, tofu, pastas, and are also made-up to resemble different types of meat (Tvp)."

Soy related recipes include: Boiled soybeans (with "½ pound {1 cup} dry soybeans, p. 101). Soybean patties (*Empanadas de frijoles soyas*, with "2 cups soybeans, cooked and mashed," p. 102). Dry-roasted soybeans (*Frijoles soyas asadas*, with "cooked soybeans," p. 103). Fried soybeans (*Frijoles soyas fritas*, with "2 cups soybeans, cooked," p. 104). Soybean casserole (*Cazuela de frijoles soyas*, with "2½ cups soybeans, cooked," p. 105).

Note: This 1989 edition is the same, page for page, as the 1984 edition. Address: Manager of a vegetarian restaurant, Guadalajara, Mexico.

1285. Alimentos Granix. 1989? *Granix por excelencia* [Granix for excellence]. Av. San Martin 4625 (C.P. 1602), Florida, Prov. de Buenos Aires, Argentina. 8 p. Undated. Manufacturer's catalog. 25 x 19 cm. [Spa]

• **Summary:** This full-color undated catalog describes the Granix line of health foods, and many color photos show the inside and outside of the plant plus individual products in their packages. Soyfoods include: Galletitas con Soja (crackers with soya), Nutrisoja (TVP granules), Nutrisoja para Milanese (TVP in Italian/Milano Sauce), and Porotos de Soja (soybeans). On the cover of the 1990 edition of this brochure is a special seal that states: "Granix, 50 years of excellence with foods." Address: Buenos Aires, Argentina. Phone: 760-0307/7292/5676.

1286. **Product Name:** TVP2 Textured Soya Concentrate. **Manufacturer's Name:** British Arkady Co. Ltd. **Manufacturer's Address:** Old Trafford, Manchester, M16 0NJ, England. Phone: 061-872 7161.

**Date of Introduction:** 1989?

**Wt/Vol., Packaging, Price:** 25 kg multi-ply paper sacks with a protective moisture-proofed layer.

**How Stored:** Shelf stable.

**New Product–Documentation:** Manufacturer's brochure. 1989? TVP2 Textured Soya Concentrate (70% protein). 4 p. Discusses: How the product is made into TVP2 chunks, strips, and mince. Applications: Manufactured meat products, ready meals/institutional catering, health and vegetarian

products. It offers quality, economy, and nutrition. Methods of use. Nutritional analysis. Packaging and storage.

1287. **Product Name:** Arkady Sparkle: Granular Soya Protein Concentrate.

**Manufacturer's Name:** British Arkady Co. Ltd.

**Manufacturer's Address:** Old Trafford, Manchester, M16 0NJ, England. Phone: 061-872 7161.

**Date of Introduction:** 1989?

**Wt/Vol., Packaging, Price:** 25 kg multi-ply paper sacks with a protective moisture-proofed layer.

**How Stored:** Shelf stable.

**New Product–Documentation:** Manufacturer's brochure. 1989? Sparkle. 2 p. Discusses: Basic product description. Application: Added to chopped meats. Typical nutritional analysis. Packaging and storage.

1288. British Arkady Co. Ltd. 1989? A guide to British Arkady bakery products. Old Trafford, Manchester, M16 0NJ, England. 8 p. Undated. Catalog. 30 cm.

• **Summary:** This booklet comes inside a portfolio titled "Arkady ingredients for the food industry." On the cover are color photos of mostly breads and other baked goods, plus some meats. On the mailing label is stamped "Bakery products. Soya proteins."

On page 4, "Other products in our range are: Dosoy: Enzyme active flour for use in all types of bread process to give improved crumb softness, color and yield. Hisoy: Full fat soya flour used as a quality improver in cake and pastry goods. Use Hisoy for richer color and eating quality... Soylec C15: Lecithinated soya flour (15% lecithin)... TVP: Textured vegetable protein. Use alongside meat in savory goods for dramatic improvements in quality and economy." Address: Manchester, England. Phone: 061-872 7161.

1289. **Product Name:** [Natura–Naturana Patty Mix, and Bolognese Spaghetti Sauce Mix].

**Foreign Name:** Natura–Naturana Soja Bratlingsmischung, und Naturana Soja Bolognese.

**Manufacturer's Name:** Gebr. Hiller GmbH & Co. KG. [Naturawerk].

**Manufacturer's Address:** Neanderstr. 5, D-3000 Hannover 1, West Germany. Phone: (0511) 66 20 20 / 29.

**Date of Introduction:** 1989?

**New Product–Documentation:** Booklet. 1989? Ach So-Ja. This booklet, with many color photos, shows the manufacturer's products and recipes using them. The emphasis is on these two TVP-based soy products. Small photos show both Labels. Each has a color photo on the cover against an orange and yellow background. Bratling: "Already seasoned. Made purely from plants (*rein pflanzlich*)." Bolognese: "With all ingredients needed for 200 gm of spaghetti–made purely from plants."

Label for Naturana Soja-Ragout sent by Anthony

Marrese. 1990. Dec. 12. The name of this company now seems to be Naturawerk, located at D-3000 Hannover. The brand is both Naturana (most prominent) and Natural. On the label is shown small color photos of the labels for Naturana Soja-Bolognese, and Naturana Soja-Bratlinge.

Label for Soja-Bratlinge–Fertigmischung sent by Heather Paine of SoyaFoods in London. 1993. Nov. Note that the name of this product has changed slightly. The name of the company seems to be Naturawerk, D-3000 Hamburg. Ingredients: Soya protein, fine bread crumbs, unheated (*ungeh.*) vegetable oil, spices, starch, oat bran, salt, caramel. Retail for DM 5.15. Makes 9 patties.

1290. Gebr. Hiller GmbH & Co. KG. 1989? Ach so-ja. Die besten Menues mit Naturana: Herzhaft, raffiniert, aromatisch [Ach so-ja. The best menus with Naturana: Hearty, refined, aromatic]. Neanderstr. 5, D-3000 Hannover 1, West Germany. 12 p. Undated. 15 x 11 cm. [Ger]  
• **Summary:** This booklet, with many color photos, shows the manufacturer's products and recipes using them. The emphasis is on TVP-based soy products, especially Naturana Soja Bratlingsmischung, and Naturana Soja Bolognese (Spaghetti Sauce). Address: Hannover, West Germany. Phone: (0511) 66 20 20 / 29.

1291. Granose Foods Ltd. 1989? A selection of recipes using Granose delicious health foods. Stanborough Park, Watford, Herts. WD2 6JR, England. 28 p. Undated.

• **Summary:** Contents: Main meal entrées. Dinner party entrees. Supper dishes. Party and picnic fare. Miscellany. Each recipe calls for the use of a Granose food product. The booklet contains some color photos. On the front cover is a color photo of fruits, grains, bread, milk, eggs, etc. Address: Watford, Herts., England.

1292. Sanitarium Health Food Co. 1989? Sanitarium: The people who believe food should not only taste good, it should be good for you! 148 Fox Valley Rd., Wahroonga, NSW 2076, Australia. 8 p. Undated. Manufacturer's catalog.

• **Summary:** Contents: Background. Manufacture. Retail. Export. Products.

In the late 1800s a group of immigrants from the USA, all of whom were members of the Seventh-day Adventist Church, decided to make their living by distributing health foods. At first they imported a selection of products from Battle Creek, Michigan, then famous for its sanitarium. The first products arrived in Melbourne in 1897. They included Granola, Caramel Cereal, and gluten products. But when demand outstripped supply, in late 1897 a baker, E.C. Halsey, was persuaded to migrate to Australia to start up a manufacturing plant similar to the one he had operated in Battle Creek. On Nov. 8 he arrived in Sydney en route to Melbourne, totally unaware of what he was starting. The records show that the St. George's Bakery was rented in

Melbourne in 1898. The production of Caramel Cereal and Granola commenced immediately.

In 1898 the group moved to larger premises in Coorانبong, a rural area south of Newcastle in New South Wales, and adopted the name Sanitarium Health Food Company. With Halsey in charge, production commenced in a large defunct sawmill in 1899. After a period of uncertainty, the Company grew and expanded until today, it has manufacturing plants in all states of Australia, in both islands of New Zealand, and in Papua New Guinea. In about 1906 the company's first retail shop opened in the Royal Arcade, Sydney. Many of the early shops included a vegetarian restaurant. Today the company operates some 70 retail shops. It also has an export division in Sydney. In 1935 the Australasian Food Research Laboratories were started. Located on the spacious grounds of the Coorانبong plant, they now employ a staff of nearly 40 people. Photos show the original Coorانبong factory, early products (incl. Nut Meat, Protose, Weet-Bix, Corn Flakes, and Marmite yeast extract), and today's food factories at Coorانبong, Victoria, and Palmerston, North New Zealand.

Product lines include Cereals (The company's leading product is Weet-Bix, the most popular breakfast cereal in Australia and New Zealand. It was first manufactured under the Sanitarium name in the mid-1920s, and comes in the shape of little biscuits. Other well known brands are Granose, Bran-Bix, and Sanitarium Skippy Cornflakes), Juices and Drinks (So Good, a non-dairy soy drink, is the newest introduction), Spreads (such as peanut butter and Marmite), Muesli Bars, Specialty Lines (such as dried fruits), Canned Protein Foods (all vegetarian, such as B-B-Q Links, Tender Bits, Vegetarian Redburger, and Nut Meat), and Sundried (incl. TVP products, and Caffex coffee substitute); a color photo shows all of these.

The name and address of the company's head office, export division, and various food factories and retail outlets is given. Address: Wahroonga, NSW, Australia.

1293. Realeat Company (The). 1990. The 1990 Realeat survey 1984-1990: Changing attitudes to meat consumption [in Great Britain]. London. 9 p.

• **Summary:** This seventh consecutive study, conducted by Social Surveys (Gallup) Ltd. is based on 4,162 interviews with people aged 16 and older. "The trend away from meat: Vegetarians now represent 3.7% of the adult population, an increase... of 76% since the survey began in 1984, when vegetarians registered 2.1%.

"Those Avoiding Red Meat, not totally abstaining, represent 6.3% of the adult population, an increase... of 232% since the survey began in 1984, when those avoiding red meat made up just 1.9% of the population.

"The Combined Group of non meat-eaters (vegetarian and those avoiding red meat) therefore represents one in ten of the adult population (10.0%). This is an increase of...

150% over 1984 (4.0%).

"Total population—The total number of people who avoid red meat or are vegetarians is 5.6 million, up from... 2.24 million in 1984.

"Eating less meat—A full 43% of the adult population are now claiming to be 'eating less meat' (or none at all) and the main reason for this is health, cited by four in ten in the category.

"Women & men: Women are far more likely to be non meat-eating than men. Whereas 7.1% of men (1984 3.3%) claim to eat meat rarely or not at all, the figure for women is 12.8% (1984 4.8%)... For the seventh year, women in the 16-24 year age group are the most likely to eat little or no meat, with 22.4% in the combined vegetarian or avoiding red meat group.

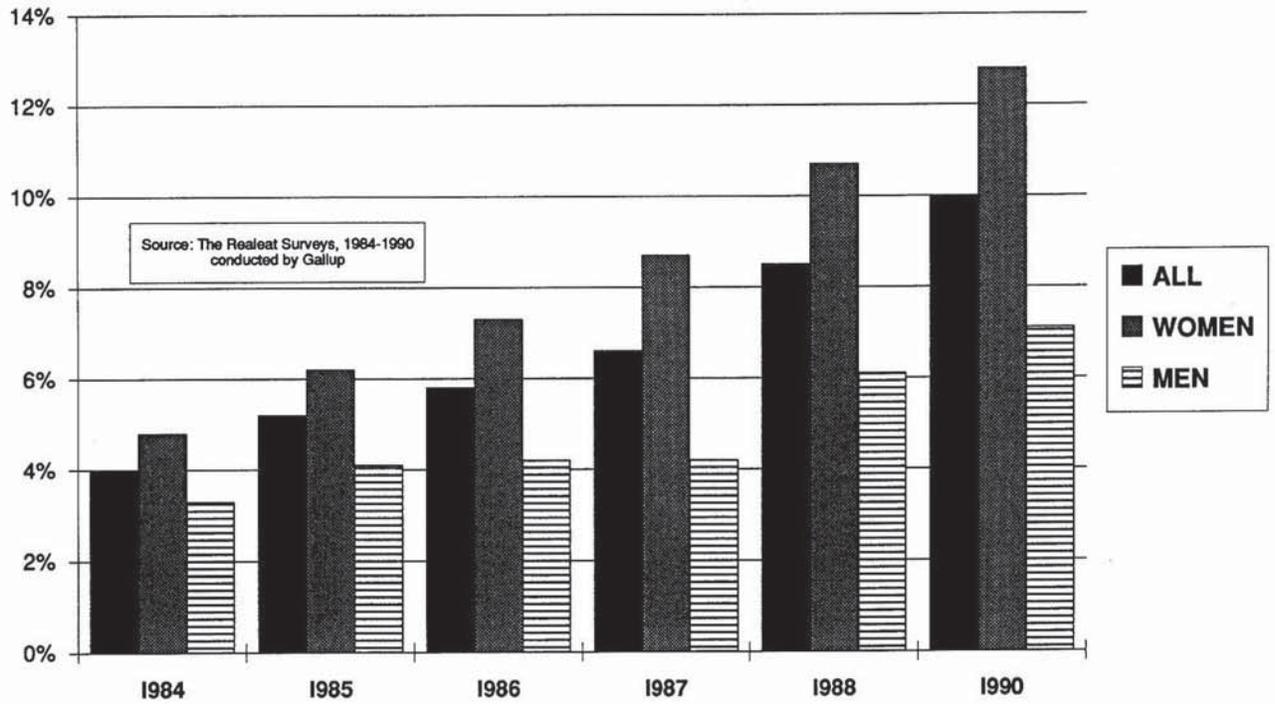
"Region: Most of those becoming vegetarian, or cutting red meat out of their diet, seemed to be doing so in the south of England"—as opposed to the Midlands, North, or Scotland. "In the South a whopping 37% more people knocked meat out of their food chain over the past two years,..."

The report contains many useful charts and graphs. Two bar charts are shown here. Address: 2 Trevelyan Gardens, London NW10 3JY, England. Phone: 01-459-3401.

1294. Fehlberg, Eric C. 1990. Seventh-day Adventist health food companies in Europe (Interview). *SoyaScan Notes*. March 7. Conducted by William Shurtleff of Soyfoods Center. Followed by a letter dated 24 May 1990 clarifying details.

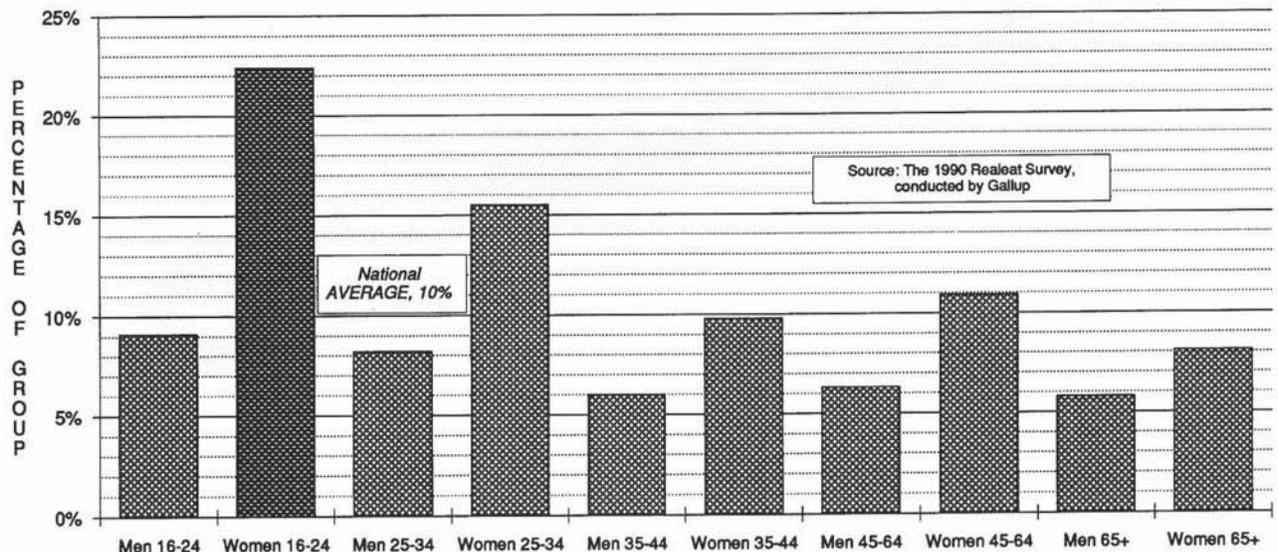
• **Summary:** There are three major Seventh-day Adventist (SDA) food factories in Europe, each owned by the church: DE-VAU-GE in West Germany, Nutana in Denmark, and Granose in England. There are smaller factories in Spain, and Switzerland. All these companies are owned by the SDA church. The leading Adventist food companies, ranked in descending order of annual sales, are: 1. DE-VAU-GE, established 1899 in West Germany. They are by far the biggest in Europe. They manufacture a total of 257 products. DE-VAU-GE began making its own tofu in Jan. 1986; before that it purchased tofu from a Belgian soymilk company [Note: actually from Heuschen-Schrouff in the Netherlands]. When Michael Makowski took over as managing director in about 1972-73, company sales were about US\$3-4 million. By 1983 sales were about \$18 million. Since then growth has been fantastic. 1989 turnover was DM 84 million (US\$49 million). This is due to both excellent management and the German interest in natural, health, and vegetarian foods. 2. Nutana, est. 1898 in Denmark. They are about half the size of DE-VAU-GE. Under the management of Bent Nielsen, who was there until 3 years ago, the company grew rapidly. Since 1987 growth has flattened, but there is great potential for future growth. 3. Nutana in Norway (Nutana Norge), formerly Dagens Kost, est. 1970. They were established as a marketing company for Nutana, Denmark, and they

### NON MEAT-EATERS. by sex 1984-1990



NOTE: There was no survey conducted in 1989

### NON MEAT-EATERS, by age and sex - 1990



Respondents declared themselves to be vegetarian, vegan, or avoiding red meat in their diet.

sell all the soyfoods made by Nutana, Denmark. They also manufacture 55 products, but they import and wholesale 321 products. All of the imports come from European Adventist companies. 4. Granose Foods, est. 1899 in England. They manufacture 39 products and distribute 98 more (mostly from Nutana or DE-VAU-GE). They have been a manufacturer since 1899, and they built a new food plant in 1989. Their business is now growing rapidly. 5. Nutana in Sweden (AB Svenska Nutana) was renamed in 1987. It was formerly named Edakost Food Company, Sweden, est. 1970. 6. Nutana in Finland, formerly Finn-Nutana, est. 1979. 7. Pur-Aliment, est. 1928 in France. They are not a food manufacturer; purely marketing. 8. PHAG Food Factory (Fabrique de Produits Dietetiques), est. 1895 in Switzerland. The small factory produces 40-50 tons of food a month. 9. Granovita Spain, was founded and began manufacturing in about Aug. 1985 in Valencia, Spain. They do not produce any soyfoods at all, but they market soy products made by DE-VAU-GE in West Germany and by Nutana in Denmark. 10. Nutana in the Netherlands, founded in 1986. They are presently selling all the products produced by Nutana of Denmark as well as 5 other products: Vitanex (Sandwich cream), Rondolettes (Chickenlike or beeflike flavor), Snackers (Soy sausages), Boulettes (Dinner balls).

The Austrian Food Company, founded in 1976, was a restaurant rather than a food manufacturer; it was closed in 1987.

Granose and DE-VAU-GE were both importing foods from Loma Linda in the USA. But now that Loma Linda has been sold to Worthington Foods, it is not clear what will happen to these imports. Today, the various Nutana companies are independent, but there is much talk of bringing Nutana in Norway and Holland together with Denmark. Nutana has always been behind the expansion of SDA food work in the Scandinavian countries. Using the common name Nutana greatly facilitates marketing.

The European food companies have grown at different rates, largely dependent on the effectiveness of each company's management. The trend has been generally up. The highest growth rates in the past 5 years have been shown by Granose in England (though it started from a smaller base), followed by DE-VAU-GE in West Germany. Pur-Aliment and Nutana have had a bit of a struggle.

All of these companies pay a portion of their profits back to the church. They are encouraged to pay about 20% of profits back to the church, but some pay almost 50%. This is similar to the dividends paid by secular companies. Fehlberg believes that tofu will be the growth food of the future; it has great growth potential that has not yet begun to be realized. Address: Director, International Health Food Assoc., Seventh-day Adventist General Conference, 12501 Old Columbia Pike, Silver Spring, Maryland 20904. Phone: 301-680-6674.

1295. Fitch, Peter. 1990. Re: The Haldane Foods Group. Letter (fax) to William Shurtleff at Soyfoods Center, March 26. 3 p.

• **Summary:** The Haldane Foods Group is composed of Direct Foods Ltd. (founded 1980, acquired by the Group in March 1985), Vegetarian Feasts Ltd. (founded 1984, acquired Feb. 1986), Haldane Foods Ltd. (founded 1983, acquired Aug. 1987), Regular Tofu Co. Ltd. (founded 1983, acquired Aug. 1987 since it was owned by Haldane), Vegetarian Cuisine Ltd. (founded 1985, acquired 1987), Realeat Foods Ltd. (founded 1984, acquired Sept. 1988), Saucemasters Ltd. (founded 1988, acquired Feb. 1989), and Genice Foods Ltd. (founded 1988, acquired March 1989).

Genice (pronounced gen-AIS) makes non-dairy frozen desserts (ice creams). Saucemasters makes a vegetarian mayonnaise, free of eggs and dairy products.

“Between them, the companies encompass a wide range of ‘Healthy Foods’ including chilled, frozen, dry, sauces, desserts and non-dairy ices.

“Although the individual companies have separate identities and sites, they share a common sales and marketing team and enjoy business in all market sectors including health food stores, supermarkets and catering.

“The group is very active in new product development, believing that the life blood of the health food market lies in innovation.

“Customer and market requirements are constantly changing and a great deal of effort is put into keeping pace with these changes in demand.”

Note: At Helfex 90 in April 1990 in England the Haldane Foods Group launched of 21 new products. This was NOT in celebration of its 21st birthday. Address: Managing Director, Haldane Foods Group Ltd., 25 Hayhill, Sibley Rd., Barrow upon Soar, Leicestershire LE12 8LD, England. Phone: 050981 6611.

1296. Marshall, Philip. 1990. The tofu industry and market in the UK (Interview). *SoyaScan Notes*. March 29. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The largest tofu manufacturer in the UK is probably Dragon & Phoenix in London. They do not reveal anything about their production or sales statistics. In 1984 they were producing an estimated 10,000 kg/week. Now they may be producing roughly 20,000. Second largest is Cauldron Foods, which now produces about 15,000 kg/week, working long shifts and using a completely continuous process that includes a Takai roller extractor (Philip does not like Takai's equipment, and will soon replace it; he feels that it is poorly built, low-quality parts and materials, stainless steel is magnetic, cast iron pumps, etc. He had to completely take their machine apart and rebuild it).

A distant third is Regular Tofu Co., now owned by the Haldane Foods Group. They use a Takai hydraulic press. As a very rough guess, they might be making 4,000 kg/week.

Paul's Tofu is probably the fourth largest tofu maker in the U.K. Paul is an old, good friend of Philip's. His product is excellent, and he supplies the organic, natural nigari market. He might make 3,500 kg/week. Dragonfly is a small company at Totnes, Devon, that probably makes less than 1 tonne/week of organic tofu. In addition there are probably a number of Chinese tofu companies that are largely invisible except to the Asian community. There are also some in Birmingham, England. Birchwood Health Products (Clwyd, Wales) is no longer in business. Philip does not know when they stopped. They never really surfaced.

The total market size is probably about 45,000 to 50,000 kg/week.

The future looks good and the market is growing, but only due to hard work. Cauldron Foods is spending quite a lot of money on PR, marketing, education, and new product development. Cauldron's production and sales have more than doubled during the past year. About half of his sales come from his 3 types of basic tofu, and half from second generation products, especially burgers. The vegetarian market is an increasingly important one in the UK, and many non-vegetarians are reducing their consumption of meat, becoming more adventurous eaters, and looking to try new products. There is a general heightening of awareness of food and the variety of food. Cauldron is launching a line of frozen "ready meals." Address: Owner, Cauldron Foods Ltd., 149 South Liberty Lane, Ashton Vale Trading Estate, Bedminster, Bristol BS3 2TL, England. Phone: (0272) 632835.

1297. Welters, Sjon. 1990. Heuschen-Schrouff, the largest tofu and tempeh company in Europe and the Netherlands (Interview). *SoyaScan Notes*. March 30. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The largest tofu manufacturer in Europe and the Netherlands is Heuschen-Schrouff (pronounced HEW-shun Shrooff; "HEW" rhymes with "who" and "Schrouff" rhymes with "roof"). They make an estimated 35,000 to 40,000 kg/week (75-90,000 lb/week) of tofu. The company's production manager or director of operations, Han van der Hayden, visited Sjon in 1989 (Sjon took him through Nasoya's plant in Massachusetts and spent quite some time with him) and told him these figures. At the time, Heuschen-Schrouff wanted to upgrade their tofu production line from one they built themselves to a Takai or a Sato system. Sjon recommended Sato. They have not yet bought the new system.

Mr. Schrouff is the company's owner. In the early 1960s, Mr. Heuschen had a tofu company and Mr. Schrouff had a tempeh company (or perhaps vice versa). Sjon thinks they merged, then split up, then Mr. Schrouff bought Mr. Heuschen's business. Mr. Heuschen is no longer an owner, but he became the tofu production manager. Later Han became his supervisor.

Prior to the mid-1980s, Heuschen-Schrouff concentrated almost solely on the Indonesian market. After that time they started to make tofu for natural foods companies. They make tofu for Natufood, which is one of the largest distributors of natural foods in Holland. Natufood then created a separate division named Vetara which makes and sells a line of vegetarian protein products, such as TVP, Soy Schnitzels, mixes containing TVP used to make meat analogs—plus their Vetara Tofu. Natufood has a little newsletter, which they are expanding into a magazine for natural foods retailers in Holland. It is a good source of information on soyfoods.

In late 1989 Heuschen-Schrouff hired a new president and also bought another large tempeh company, perhaps Van Dappern's Tempeh Production Inc. So now Heuschen-Schrouff is Europe's largest manufacturer of both tofu and tempeh. Heuschen-Schrouff does a lot of private labeling for other companies; their tofu is sold under ten different brand names. They also export a lot of tofu from the Netherlands. Their biggest market is West Germany, followed by Belgium. Heuschen-Schrouff does not yet make second-generation tofu products; they may make some in the future or they may focus on making basic tofu. The next time Sjon goes to the Netherlands, he will probably be able to see the inside of the company. Address: Craft International Consultants, 21 Wetherbee St., Acton, Massachusetts 01720. Phone: 508-264-9511.

1298. Midwest Association of State Departments of Agriculture (MASDA) Industrial Uses. 1990. Commercializing industrial uses for ag commodities. c/o Wisconsin Dep. of Agriculture, 801 W. Badger Rd., Madison, WI 53713. 32 p. Illust. Proceedings of a conference held 14-16 March 1990 at the Ramada Renaissance Hotel, Washington, DC. 28 cm.

• **Summary:** This is a summary of the proceedings of a conference which seems to be about reviving the idea of chemurgy. About 300 people attended. A major goal was to get a subtitle on industrial uses into the 1990 Farm Bill. Contents: Letter from Sam Brownback (Conference chairman and secretary, Kansas Board of Agriculture). Conference co-sponsors (23 organizations). Committees (9). Policy statement. End-users report. Plan of action. A historical perspective (speech by 97-year old Wheeler McMillen, who chaired the first such session in 1935, and chaired the Farm Chemurgic Council). Foreword. Plenary sessions program. Concurrent sessions guide. Conference proceedings (summary of each session, incl. a speech by Dr. Kenneth Bader, CEO, American Soybean Assoc.). Recommendations. Distinguished faculty of speakers & moderators. Contains many photos, including Sam Brownback, Wheeler McMillen, Kenneth Bader, Marty Andreas of ADM, E. Kika de la Garza, and Clayton Yeutter.

Note: A follow-up meeting was held on 21-22 June 1990 in St. Louis, Missouri at the Airport-Marriot. 51 people

representing 40 organizations attended. MASDA (The Midwest Association of State Departments of Agriculture) will provide support services while organizational and fund raising activities get underway. Irwin A. "Bud" Sholts, Director, Agricultural Development and Diversification, Marketing Div., Wisconsin Dept. of Agriculture is coordinating activities. A new organization named "New Uses Council, Inc." is being created. Address: Madison, Wisconsin. Phone: 608-266-1300.

1299. *Soyanews (Sri Lanka)*. 1990. Soya food processors [in Sri Lanka]. 12(1):4. Jan/March.

• **Summary:** A directory of the 13 small scale soyfood manufacturers, 10 medium scale, and 5 large scale in Sri Lanka. The company name, address, and name of the products made is given for each.

The medium scale processors are: (1) Plenty Canada, Kandy and Colombo, wide range of Soya products. Soya Food Centre, 88A, Kotugodella Vidya, Kandy. Soya Food Centre, G11, Mihindu Mawatha, Colombo-12. (2) Mr. P. Weerasekara (Soya Biscuits, Bakery Products, Dry Products), Regal Bake House, Fort Matara. (3) Chinese Style Bean Curd, 106 Jawatte, Colombo-5. (4) Eastern Food Products, 209/4 Union Place, Colombo -2. (5) MacSoy Pvt. Ltd., 51 Layards Rd., Colombo-5. (6) R.M.R. Manufacturers, 14/1 Aponso Ave., Dehiwala. (7) Soya House (U.N. Gunasekera and Co.), 128 Kitulwatta Rd., Colombo-6. (8) Yung Hwa and Company, 10 Guader Place, Dehiwala. (9) F.H. Chong, 33 Union Lane, Colombo-2. (10) New Edinborough Products [New Edinburgh?], 19A 5th Lane, Nawala Rd., Rajagiriya.

The large scale processors are: (1) CARE Thripasha Nutrition Programme, Colombo-5. (2) Paddy Marketing Board-(soya fortified rice flour). (3) Spices and Essence (Ceylon) Ltd.-(soya products including TVP). (4) Kundasale Cereal Products Factory-(soya flour, soya flakes). (5) Soya Food Research Centre, Gannoruwa-(flour, dhal and wide range of products).

1300. Bodis, Laszlo. 1990. Re: The work of FTTE with tofu, soymilk, and soy protein products in Hungary. Letter to William Shurtleff at Soyfoods Center, April 2-in reply to inquiry of Jan. 25. 2 p. Typed, with signature on letterhead. [Eng]

• **Summary:** "FTTE is an engineering, research, and development enterprise rather than a manufacturing one. Technologies worked out by our technicians for producing feed and food products are then tried and used by companies producing food or feeds. Thus in the introduction and spread of tofu, we did all the initial work (conceiving the idea, drawing up the technology, sizing up demand, 'digging out' consumption, etc.) except for direct manufacturing... At present the manufacturer of the tofu developed by FTTE is Pest-Budai Vendeglato-Ipari Vallalat. We are talking with

other companies about scaling up production.

Besides tofu, we cooperate in the production of a soymilk and sour cherry beverage mixture, soybean flakes, soy-cubes, TVP, soy-meal, lecithin, and UNIPRO—a feed made from whole (non-defatted) soybeans.

An undated 4-page color leaflet accompanying this letter, titled "FTTE—a bridge between research and application," notes that FTTE stands for "The Association for Protein Research Technology and Production." It was founded by OMFb (the National Technical Development Board) in 1983.

Also accompanying the letter are photocopies of pages from a publication: Unipro—a high-energy feed made from whole cooked soybean. Vetomag—a new variety of soybean. OMFb advisory service for growing pulses. Feherje (Protein) a quarterly magazine published in Budapest by 3 organizations. The chief editor is Kralovansky U. Pal. Dr. Laszlo Bodis is on the editorial board. It covers all aspects of proteins. Pronutti, soy-based products for food from Proteinvest. Szoja feldolgozas soybean processing. Takarmanygyar feed mixing plant. Szolnok Megyei (a company that produces and distributes soybean meal). KEKI (Kozponti Elelmszeripari Kutato Intezet; the Central Institute for Food Research in Budapest) provides expertise for developing soybean applications. Address: Director, Feherjetechnologiai Tudomanyos Termelesi Egyesules, Budapest XII., Goldmark K. u. 3. Budapest Pf: 340 1536, Hungary. Phone: 155-5202.

1301. Lindner, Anders. 1990. Re: The soymilk market in Europe. Letter (fax) to William Shurtleff at Soyfoods Center, April 4 and April 26. 3 p. [Eng]

• **Summary:** The following figures contain many guesstimates. The only countries in western and eastern Europe where significant amounts of soymilk are produced are Belgium, West Germany, France, England, and Switzerland. The following are the seven largest soymilk manufacturers in Europe, ranked in descending order of size:

1. Alpro/Vandemoortele, Belgium. Capacity: 35 million liters/year. Present output: 25 million liters/year. Growth: Believe so, but don't know how much.

2. DE-VAU-GE (DVG), West Germany. Capacity: 20 million liters/year. They are running their plant at full capacity, but as Adventists I think they don't work on Friday afternoon or Saturday, they close down during the summer, and they send one road tanker of soymilk each week to Granose in England, where it is made into soy yogurt. So they probably end up making about 12 million liters a year of soymilk in long life packs. Soon some of their soymilk will be made into tofu. Growth: Would if they could, but they can't with the line they have, which they bought from DTD/STS for DM 4 million. DVG is making an excellent profit on their soymilk products, that's for sure. This is in part because they have the Neufarm chain at their disposal.

3. Cacoja, France. Capacity: 11 million liters/year. Believed to be running at full capacity. Growth: Planning a new line but no decision yet as far as I know. I think that Cacoja produces more than 1 million liters/year. They visited DTD/STS a year ago to discuss a second line. The first one had a capacity of 2,000 liters/hour or approximately 5 million liters/year.

4. Soya Health Foods Ltd., Manchester, England (Sunrise Soya Milk). Capacity estimated at 8 million liters/year. Actual production not known.

5. Soyana, Switzerland. Capacity and production not known. Soyana has consistently refused to allow us to visit them. Even our Indian client who wanted to discuss purchase of their Dahi dessert recipe was given the cold shoulder. I think that they have their own soymilk plant, but I'm not sure. Why shouldn't they, when they have plenty of products in Swiss shops.

6. Galactina, Switzerland. Capacity estimated at 6 million liters/year. Most is used for products other than liquid soymilk. They sell limited amounts of soymilk, definitely less than 1 million liters/year packed in Tetra Brik Aseptic at the Thun Dairy in Switzerland.

7. Schoeller in Nuremberg, West Germany. Capacity not known. Soymilk used in ice cream production. There are also soymilk producers in Italy [Crivellaro], and Spain [Proti].

"Total size of European soymilk market in 1989 estimated at 50 million liters. Some is in the form of dairy analog products. Alpro and DE-VAU-GE have about 70% of the market, including bulk distributed product. Growth rate over the past few years 10–15%.

"General observations of the European soymilk industry and market: The dairy industry in France was the first to go into soymilk to offer alternatives to consumers who prefer 'non-dairy dairy type products'. The soymilk-based ice cream of West Germany's Schoeller may start a trend for the rest of the European ice cream industry. There has been no equivalent to the U.S. Tofutti boom in Europe so far. Major liquid food companies do not at present see soymilk as a significant product for Europe but follow the trends and do some development, just in case.

"The future? It is necessary to make a distinction between Eastern and Western Europe. Western Europe has a surplus food production in general and surplus dairy milk production in particular. The health aspect alone, i.e. soymilk without improved palatability, will not significantly increase soymilk sales in Western Europe. The removal of dairy production subsidies in the EEC in the years to come, especially after 1992, may give an incentive to the big names in the food industry to develop soymilk into mainstream market products. There is EEC legislation on imitation dairy products and soymilk is mentioned as an example, but currently different member countries use their own laws.

"Many Eastern European countries have food shortages but lack money and entrepreneurship to venture into an

unknown product like soymilk on their own. Furthermore, in these difficult markets, western companies with soymilk technology do not seem to find it worth the effort to first educate on the advantages and uses of soymilk and then to promote and arrange financing before they can hope to sell a soymilk processing plant. The new Eastern Europe with market economies now evolving gives hope for the future in general, but I couldn't make any guesses about soymilk.

"It is the aim of EEC to dismantle the agricultural subsidies. This will effect dairy production and new cheaper protein sources will be sought by the food industry. Soymilk definitely has a chance of 'growing up' when this happens.

"STS-Soya Technology Systems Limited no longer exists. It was the decision of APV's CEO to close it down as an independent company when the big APV reorganization took place. When we moved to Denmark we became DTD-Soya Technology Division. Now Danish Turnkey Dairies has itself become a division of the APV Pasilac Ltd and the official name is DTD-APV Pasilac Ltd (the result of mergers and takeovers!). Asger Somer Hansen now handles soymilk activities within the APV group and works in DTD-APV Pasilac Ltd.

"John Wilson still works at Alfa-Laval in Lund as far as I know—at least he did 2 years ago. Alfa-Laval also has another soymilk person, a young woman.

Note: Lindner, the managing director of Soya Technology Systems from May 1982 until Nov. 1989, has a good grasp of the world soymilk market. Address: P.O. Box 19002, S-250 09 Helsingborg, Sweden. Phone: 42-92776.

1302. Marshall, Philip. 1990. The soymilk industry and market in the UK (Interview). *SoyaScan Notes*. April 17. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The two brands of soymilk with the largest shares of the UK soymilk market are both imported: Provamel, the best-seller, is imported from Alpro in Belgium. Granose Soya Milk is imported from DE-VAU-GE in West Germany.

There are four soymilk manufacturers in the UK. The largest is probably Unisoy Milk 'n' By-Products Co. in Stockport (Cheshire County near Manchester). Their quality is excellent, almost as good as Alpro's. The people who founded Unisoy were formerly involved with Soya Health Foods Ltd. The founder, who had the money, died before production started. [Note: Neil Rabheru (see interview, 1990 July 2), founder of Unisoy, says the previous 2 statements are not true.] Unisoy started making soymilk about 4 years ago, and today their biggest product is own-label soymilk, packed in Tetra Brik by a contract packer, and sold to Sainsbury, a large chain/multiple retailer in the UK. Unisoy does not and will not make tofu. The company is not very strong. The person in charge is Neil Rabheru, of Indian extraction, a very nice man. He recently sold the company for a relatively small sum.

Second largest soymilk manufacturer is Soya Health Foods in Trafford (Sunrise brand, founded by Michael Cole and Mr. Arora, a Sikh / Indian). It was the Indian connection that resulted in the formation of Unisoy some years ago. Third may be the Regular Tofu Co., a division of Haldane Foods (Arkady/ADM), which produces Sojal Soya Milk. The Sojal brand was the property of another company in France, which originally produced the product for them using a soymilk powder made in Sao Paulo, Brazil (by Norsul, Agro-Nippo Productos, or ITAL?). Haldane no longer has the product produced in France but they still use the Sojal brand, and still has the product produced by another company (in what country is not known) and it is probably now made from whole soybeans rather than soymilk powder. [Note: The only soymilk listed in Haldane's Oct. 1989 catalog is So Good Soya Milk (organic or non-organic); Sanitarium Foods in Australia makes a product by the same name].

Fourth is Plamil, which contracts with some other company to have its soymilk made from soy protein isolates. They are quite a small company, ethically based, into vegan foods and marketing strategies from the 1960s and 1970s. Fifth is Itona (pronounced ai-TOW-nuh), which makes a soya milk of some description, but they are not really in the mainstream of the soymilk market. They probably make their soymilk from soy protein isolates and it is sold in cans—every other brand is in Tetra Pak or Combibloc. Address: Owner, Cauldron Foods Ltd., 149 South Liberty Lane, Ashton Vale Trading Estate, Bedminster, Bristol BS3 2TL, England. Phone: (0272) 632835.

1303. Vandemoortele, Philippe. 1990. The soymilk industry and market in Europe (Interview). *SoyaScan Notes*. April 17. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Philippe estimates that Alpro has about 70% of the fluid soymilk market (not including infant formulas) in Europe. In 1984 in Brussels Michael Martin of the American Soybean Association estimated the size of the European soymilk market to be 9-10 million liters/year. Philippe thinks that figure was too high; it was probably about 6 million liters. Now it is about 30 million liters/year in all of western Europe. The growth rate for soymilk production over the past 2 years has been about 20% a year.

The second largest soymilk manufacturer in Europe is DE-VAU-GE, with roughly 15-20% of the market. The rest are very small, with a combined percentage of only 10-15%. Third may be Triballat and fourth may be Cacoja. Together these two may be producing 1 million liters per year, but that is just a very rough guess. Innoval just started so they have not had time to do anything. Unisoy in England is very small. Soya Health Foods Ltd. (Sunrise brand) is almost out of business in soymilk. Galactina is limited to Switzerland, and they produce mainly tofu, not soymilk.

Looking at Cacoja and Triballat, they are completely different types of companies. Cacoja is a classical

cooperative that has no experience in or organization for commercializing consumer products. So they have to co-pack, i.e. make products for other companies. Triballat is a small but very active dairy company, with a good sales and marketing organization in France. They are used to making and selling their own consumer products. Their Sojasoy yogurt is a good-tasting, fresh product. It has been quite successful for a soya food, although compared with dairy products it is nothing.

There are always been many negative things about soymilk in Europe. 1. The retail price of soymilk is very high compared to basic cow's milk, usually 2-3 times as high. In the USA the price of both cow's milk and soymilk are higher, but the ratio is similar. 2. The taste of soymilk is a big problem, although it is steadily getting better. 3. Cow's milk is a very traditional, widely accepted product in Europe. 4. The dairy lobby and its employees are very powerful in Europe and recently they have been attacking soymilk on issues such as its calcium content being lower than that of cow's milk. Doctors have been taught and teach their patients that cow's milk is a perfect product. Only a minority, but a growing minority, are opposed to the use of cow's milk. 5. The many European government regulations hurt soymilk. There are many taxes, such as a Value Added Tax (VAT) on soymilk that are not imposed on cow's milk since soymilk is considered in some countries to be a juice. Every country has a VAT system. The Netherlands, Belgium, and France had an 18% VAT on soymilk versus 6% on milk, but that changed 1 year ago so it is no longer a basic problem. In Belgium there is now a 6% VAT on both soymilk and cow's milk.

The two things needed to make the soymilk market grow are better taste and a better image of soymilk (compared to cow's milk) as a food that is good for one's health, and dissemination of the information showing the health benefits of soymilk over cow's milk. The quality of soymilk products is steadily improving and should continue to do so, not through discovery of any new basic principles but through many small adjustments.

The opening of Europe in 1992 will have little or no effect on soymilk. Competition is already international. The need for a multitude of packages in the various languages will not change; Alpro presently packs soymilk in more than 100 different Tetra Brik cartons! This includes both their own brands and those of companies for which Alpro private labels. This is both complicated and expensive. One possible change may be that governments will work faster to establish soymilk terminology. Now soymilk has no name! It can be called "soya juice, soya drink, soya beverage," but it cannot be called "soymilk." As long as it has no name, no regulations or standards can be made that effect it. Philippe would like to see the term "soya drink" or "soya milk" adopted. The latter was tolerated in the UK but it will probably be forbidden.

Philippe sums up the overall situation as follows: "I

always repeat, there is more enthusiasm about soyafoods than turnover and certainly no profit. Alpro has lost money every year that it has been in business.” He thinks DE-VAU-GE must also be losing money on its soymilk operation. “How can you make money when you invest \$3-4 million in a factory that is making only a few million liters of soymilk a year? DE-VAU-GE is a very large company and they do well largely because they have a sort of monopoly in the German Neuform (Reform House) organization. An organization controls all of the Neuform stores, and it is linked with both the producers and the sales people. They all together pay money for this organization to help each other. If you want to make soymilk in Germany and deliver it to these stores, you cannot, because everything is protected. The competition now comes from the independent *Biolaeden*.” Address: Managing Director, Alpro N.V., Vlamingstraat 28, B-8610 Wevelgem, Belgium. Phone: (056) 43 22 11.

1304. Vandemoortele, Philippe. 1990. Early history and recent developments at Alpro N.V. in Belgium (Interview). *SoyaScan Notes*. April 17. Conducted by William Shurtleff of Soyfoods Center. Followed by a letter (fax) on 30 May. 1990.

• **Summary:** N.V. Vandemoortele (the N.V. is written first in Flemish, but often last in English) began research on new soy products (mostly soy protein isolates and concentrates) in 1973. The goal was to find a way to bring soya beans to the consumer. They bought and sold soy protein products but never manufactured any. In May 1975 research on soymilk began. From 1975 to 1979 they were basically doing pioneer research. In Dec. 1979 they began production of soymilk, but they did not pack or sell it; it was just to get their new plant running. Famalac was a potential/fictitious product name that was described in a brochure, but the product was never sold commercially. This soymilk was produced at a plant located at Zuidkaai 33 in Izegem on a piece of land located next door to the main N.V. Vandemoortele facilities (whose official address was Prins Albertlaan 12). In Jan. 1980 Vandemoortele began to make its first commercial soymilk product (GranoVita Soja Drink in plain and carob flavors, packed in 500 ml Tetra Brik cartons) which was private labeled (co-packed) for DE-VAU-GE, a large Seventh-day Adventist health food manufacturer in West Germany. This was Alpro’s first customer.

N.V. Alpro (named simply Alpro in English), was founded in June 1980. Alpro then purchased the land on which it was located from N.V. Vandemoortele. During 1980 Alpro became a truly independent producer, now also doing their own sterilization and packaging. It was Philippe Vandemoortele’s idea to start Alpro.

His grandfather began to import soybeans in 1934 from Manchuria, and he started a small crushing plant. Philippe has always been interested in soya (he read a lot) and he wanted to go back to the use of soybeans for human

consumption in the form of soyfoods rather than as isolates, concentrates, etc. While researching new developments in soymilk processing, he learned that new methods for making soymilk had been developed in other countries such as the USA [at Cornell University and University of Illinois], Brazil, etc. His company, which had many engineers and R&D staff, was the first soymilk manufacturer in the western world to invest in a pilot plant and then in a factory to make soymilk using the new technique. In the beginning, Alpro designed and built its own soymilk equipment.

At that time it looked like Alpro’s main business would be selling this equipment to Third World countries to provide a practical solution to their nutritional and protein problems, especially for infants. In 1982 Alpro signed a contract to sell a soymilk plant to Lalaso SA in Madagascar. The plant, which cost US\$11 million, began operation in Jan. 1984 and it is still in operation. This was the only plant Alpro ever sold to a Third World country.

[Note: Alfa-Laval, which developed soymilk equipment, sold its first major piece of soymilk equipment (a VTIS sterilizer) to Yeo Hiap Seng in 1967, and its first complete soymilk line to Lam Soon (Ace Canning) in Kuala Lumpur, Malaysia. The latter began making soymilk in Dec. 1979, exactly the same year and month that Alpro began.]

The reason for the lack of sales of soymilk plants to Third World countries was mostly politics and lack of organization in those countries. It was not a problem of the resulting soymilk being too expensive. Another problem was that Alpro had only a single product to promote (the turnkey plant). So in Aug. 1984 the company decided to return to its basic business, producing foods, rather than idealistically trying to sell technology (soymilk plants) to the Third World. “In the beginning, we at Alpro had never imagined that there would be a market for soymilk in Europe. Almost nobody wanted the product. There was no interest, except among motivated health-food people. Everybody else in Europe thought the product tasted lousy.”

In the early 1980s, while focusing on its Third World plants, Alpro also made soymilk for the European market. The main reason for making this soymilk was to demonstrate what the Alpro equipment could do. In Jan. 1981 Alpro began making and private-labeling Granose Soya Drink in plain and carob flavors for Granose, a Seventh-day Adventist food manufacturer and distributor in England. In March 1981 Alpro launched Soyamel (plain with vitamins), the first of its own soymilk brands, sold only in drug stores and pharmacies (chemie stores). It was followed in Dec. 1982 by Provamel plain and chocolate drinks, and the company’s first pudding-like dessert (in chocolate flavor); the Provamel line was sold in health food stores. Next, in March 1984, came Alpro Soya Drink in plain and chocolate flavors, sold only in supermarkets (multiples). All the above were sold in 500 ml Tetra Brik cartons. Then in Nov. 1984 Alpro launched Sunsoy for the export market. It was sold in both

250 ml (plain, carob, or strawberry) and 1 liter (plain) Tetra Brik cartons. All four brands still exist, although Soyamel sales are small. Statistics on the sales of each brand are confidential. Alpro launched its first pudding-like soymilk dessert under the Provamel brand in about 1984, in chocolate and vanilla flavors. The concept, though based on a similar dairy product, was a first for soymilk.

Alpro continues to private label soymilk for anyone who can pay for it. The company's philosophy on this point has not changed over the years. "We are a producer, and as such we try to produce as much as possible, otherwise we could not pay for our research and fixed costs. We would like to sell as much of our own brands as possible, but if we do not private label for other companies, our competitors will do so instead."

In 1984 Alpro had planned to build a new soymilk plant in Ghent with a capacity of 40 million liters/year, but this plan was delayed. Instead they ended up building a new soybean cleaning and dehulling system. Finally Alpro did build a new plant at Vlamingstraat 28, in Wevelgem, near the French border. They started construction in June 1988 and they plan to be moved in completely by June 1990. The plant cost about US\$15 million and its capacity is about 45 million liters/year, which is more than the present total European and American soymilk markets. It is a complete plant with packaging, sterilizing, and several lines. It is the biggest soymilk plant in the western world. Address: Managing Director, Alpro N.V., Vlamingstraat 28, B-8610 Wevelgem, Belgium. Phone: (056) 43 22 11.

1305. Anderson, Jim. 1990. Lowell Andreas tells of start in Kato. *Mankato Free Press (Minnesota)*. April 28. p. 3.

• **Summary:** A speech to the Venture Capital Club, Lowell Andreas carried important business lessons. Dwayne and Lowell Andreas, brothers, arrived in Mankato (Minnesota) from Iowa in 1947. For nearly two decades they ran the Honeymead Products Co. In 1947, when they bought the expeller plant, it could process 1,500 bushels of soybeans a day. After a disastrous fire, the plant was rebuilt to a capacity of 3,500 bushels a day. During the 1950s this grew to 50,000 bushels.

In 1960 the Farmers Union Grain Terminal Association (GTA) bought the plant; Lowell agreed to manage the plant for 10 years for a share of the profits.

After a 1965 flood, dikes were built around the plant and surrounding residential area.

In 1966 the brothers were approached by ADM—then based in Minneapolis—and invited to buy controlling stock and run the company. As competitors, the Andreas brothers knew what was wrong with ADM from the outside. They could see all the dumb things the company was doing so they knew what needed to be done to correct the situation. For example, they unloaded ADM's unprofitable chemical division.

One of the toughest decisions was to move ADM's headquarters to Decatur, Illinois, where its biggest plant was located. During a trip to the Grand Cayman Islands, Lowell recalls how he sat in the bow of his sailboat alone, mulling over this problem. Finally he called to his wife, Nadine—who thought he was being romantic. When she sat down next to him, he asked her how she would like to live in Decatur, Illinois.

In 1965 ADM was a struggling company with sales of \$323 million; in 1989 it had sales of more than \$8 billion.

A portrait photo shows Lowell Andreas. Address: Staff writer.

1306. Genice Foods Ltd. 1990. Genice (Leaflet). Llay near Wrexham, Clwyd, Wales, UK. 1 p. Single sided. 30 cm.

• **Summary:** "Today's public, with their growing awareness of the benefits of healthy eating, are increasingly shunning products high in saturated fats, artificial colourings, emulsifiers and preservatives." Genice Foods Ltd., a company based in north Wales, has demonstrated its concern by removing such artificial ingredients from its products—with no loss of flavor or enjoyment of the products. Genice has also introduced no less than five completely natural non-dairy frozen dessert products under the brand label 'Ice Delight.'

"The two directors of Genice are highly experienced in the frozen dessert industry at the top level. Ray Pierce, Managing Director, was a founder director of Classic Ices and formerly [1979-1982] General Manager of Pendletons Ice Cream, while Irene Barclay, the Technical Director, was previously Technical Manager for Classic Ices and prior to that was product Development Manager at Dale Farm Dairies Ltd., Belfast [Ireland]." Address: Pinfold Lane, Llay Industrial Estate, Llay near Wrexham, Clwyd, LL12 OPX, Wales/Cymru, UK.

1307. **Product Name:** Granose Country Delight: Organic Soya Dessert [Orange, Apricot & Nectarine, Peach & Papaya, or Strawberry & Guava].

**Manufacturer's Name:** Granose Foods Ltd. (Marketer). Made in southern England by Bridge Farm Dairies.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire, MK16 9PY, England. Phone: (0908) 211311.

**Date of Introduction:** 1990 April.

**Ingredients:** Peach & papaya: Organic soya milk (Water, dehulled soya beans, sea salt), raw cane sugar, peaches, vegetable oil, papaya, stabilisers, modified starch, guar gum, pectin, agar, citric acid, natural flavouring, colour (Annatto).

**Wt/Vol., Packaging, Price:** 125 gm plastic cup with foil lid.

**How Stored:** Refrigerated.

**Nutrition:** Per 100 gm.: Energy 398kJ/95 kcal (calories), protein 1.3 gm, carbohydrate 14.7 gm, fat 3.8 gm.

**New Product—Documentation:** SoyaFoods (ASA, Europe).

1990 1(1):3. “Granose too are introducing a soya dessert called Country Delight in 3 flavours...”

Form filled out and four Labels (cups & tops) sent by Granose Foods Ltd. 1990. June 13. States that the product, made by Bridge Farm Dairies, was introduced in 1990. It is now sold in the four flavors shown above. A color illustration on the foil lid shows the main fruits used against an ivory background. The name of the fruits is written in a banner rectangle below the word “Granose” and above the term “Country Delight.” A “Best before” date is stamped atop each lid. The front of the cup contains a similar but more elaborate drawing. “Best served chilled.”

Granose leaflet distributed at Helfex. 1990. April. “Ingredients list for new products.”

Letter from Granose. 1990. July 11. This is an Ultra Heat Treated product with a 15-week shelf life. It was launched in April 1990 and is not an ice cream.

**1308. Product Name:** Brazil Roast Mix.

**Manufacturer’s Name:** Granose Foods Ltd.

**Manufacturer’s Address:** Howard Way, Newport Pagnell, Buckinghamshire, MK16 9PY, England. Phone: (0908) 211311.

**Date of Introduction:** 1990 April.

**Ingredients:** Brazil nuts, textured soya protein, rolled oats, oat flour, pea bran, potato flour, dried onion, hydrolysed vegetable protein, spices, dried mushrooms, sea salt, chives.

**New Product–Documentation:** Granose leaflet distributed at Helfex. 1990. April. “Ingredients list for new products.”

**1309. Product Name:** So Good Soya Yoghert (Peach & Passion Fruit, Black Cherry, Strawberry).

**Manufacturer’s Name:** Haldane Foods Group Ltd. (Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer’s Address:** 25 Hayhill, Sileby Road, Barrow upon Soar, Leicestershire LE12 8LD, England. Phone: 050981-6611.

**Date of Introduction:** 1990 April.

**Ingredients:** Black Cherry: Soya milk, fruit juice, black cherries, vegetable oil, emulsifier (vegetable mono-diglycerides), stabiliser (pectin), natural flavour, Bulgarian cultures, natural colour (beetroot red).

**Wt/Vol., Packaging, Price:** 120 gm plastic cup. Retail for £0.32.

**How Stored:** Shelf stable, 4-month shelf life at room temperature. Refrigerate after opening.

**New Product–Documentation:** SoyaFoods (ASA, Europe). 1990. 1(1):3.

Haldane Foods Group. 1990. “Twenty-one Today. Twenty-new and exciting products launched at Helfex alone.” At least 12 of these are soyfood products. “Yogherts made with organic soya milk and no added sugar. Sweetened with pear juice.”

Note: This product may be made by a subcontractor

dairy. The source of the soymilk is not known.

Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 4 and 8. So Good Yoghert made by Genice, was launched in early 1990 in 3 flavors—strawberry, black cherry, and peach & passion fruit; this is the Haldane brand. The So Good brand name has no connection with the same name used by Sanitarium Foods in Australia. The soymilk used as the main ingredient in this product is made by Unisoy (a member of the Haldane Foods Group) in Stockport.

Label (cup for Black Cherry) sent by Genice Foods Ltd. 1994. Feb. 18. Cherry red, green, and blue on white. Illustration of 4 black cherries hanging below 2 cherry leaves. “Hera. New yoghurt style dessert made of soya milk, real fruit and sweetened with fruit juice, free from artificial colouring and preservatives.” The address is now: Newport, Pagnell, Bucks. Note: “Hera” was a brand of Haldane Foods Ltd. of Leicester as early as 1982.

Label (cup) for Peach & Passion Fruit sent by Anthony Marrese. 1994. May. It retails for £0.45. On the foil lid is written: “Made with organic soyamilk. No added sugar. Contains real fruit. Sweetened with fruit juice.”

**1310. Product Name:** So Good Strawberry Bombes (Non-Dairy Frozen Dessert Confections).

**Manufacturer’s Name:** Haldane Foods Ltd. (Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer’s Address:** 25 Hayhill, Sileby Road, Barrow upon Soar, Leicestershire LE12 8LD, England. Phone: 050981-6611.

**Date of Introduction:** 1990 April.

**Ingredients:** Incl. tofu.

**Wt/Vol., Packaging, Price:** 110 ml each, 4 per pack. Retail for £1.99.

**How Stored:** Frozen.

**New Product–Documentation:** SoyaFoods (ASA, Europe). 1990. 1(1):3. “Helfex ‘90.” The Haldane Foods Group celebrated its 21st birthday with the launch of 21 new products at the Helfex show in Birmingham. England.

Haldane Foods Group. 1990. “Twenty-one Today. Twenty-new and exciting products launched at Helfex alone.” At least 12 of these are soyfood products. “Iced soya dessert with a centre of strawberry sauce enrobed in carob coating.”

Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 4 and 8. Following the acquisition of Genice by the Haldane Group, a small soya milk plant was installed at Genice with the ability to produce limited quantities of tofu also. With the new availability of tofu, two new non-dairy frozen products were launched, including So Good Strawberry Bombes for the Haldane Group, a 100 ml vanilla flavored base with a strawberry puree center, coated with carob couverture, and sold in retail packs of four.

**1311. Product Name:** So Good Tofu Dessert (Ice Cream

Style) [Tofu and Wild Blackberry, or Tofu and Strawberry & Vanilla].

**Manufacturer's Name:** Haldane Foods Ltd. (Marketer).  
Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer's Address:** 25 Hayhill, Sileby Road, Barrow upon Soar, Leicestershire LE12 8LD, England. Phone: 050981-6611.

**Date of Introduction:** 1990 April.

**Ingredients:** Incl. tofu.

**Wt/Vol., Packaging, Price:** 750 ml (3/4 liter) round paperboard tub. Retail for £1.59 incl. V.A.T. (Value added tax).

**How Stored:** Frozen.

**New Product–Documentation:** SoyaFoods (ASA, Europe). 1990. 1(1):3. "Helfex '90." The Haldane Foods Group celebrated its 21st birthday with the launch of 21 new products at the Helfex show in Birmingham. England.

Haldane Foods Group. 1990. "Twenty-one Today. Twenty-new and exciting products launched at Helfex alone." At least 12 of these are soyfood products. Made from tofu.

Talk with Philip Marshall of Cauldron Foods. 1990. July 9. The Haldane Foods Group owns about 50% of Genice [pronounced jen-AIS]. Up until now, Genice has been almost the sole manufacturer of non-dairy ice creams for companies in the UK (including Sunrise and Unisoy). They were probably the first manufacturer of soymilk in the UK. Cauldron Foods does not have his made by them because he thinks there are better sources and because they are a competitor.

Comment from a recent visitor to the UK on the flavor of So Good Ice Cream Style. 1990. July 16. "I find it to be a bit like eating beany tasting water."

Talk with Neil Rabheru of Unisoy. 1991. Sept. 16. This product is made by Genice, which has a pilot plant to make soya milk and tofu (for Direct Foods). Now the soya milk is made by Unisoy. The Haldane Foods Group has about 99% of the soy ice cream market in the UK. The Sunrise Ice Dream is now actually made by Genice Foods, in the Haldane Foods Group. Sunrise has never made its own ice cream.

Health Food Business (UK). 1992. May. p. 33. "Frozen Desserts. Haldane Foods Group. So Good range of non dairy soya ice products from Haldane, with no lactose or animal fats to worry about. Smartly packaged, the So Good range is available as Tofu Desserts in Vanilla & Strawberry and Wild Blackberry, Tofu Delight Bars (choc ice equivalents) and Strawberry Bombes Soya Carob Dessert."

Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 4 and 8. Following the acquisition of Genice by the Haldane Group, a small soya milk plant was installed at Genice with the ability to produce limited quantities of tofu also. With the new availability of tofu, two new non-dairy frozen products were launched, including So Good Tofu Dessert for the

Haldane Group, a 3/4 litre pack in a round cardboard tub flavored as a strawberry/vanilla split, or as wild blackberry.

1312. **Product Name:** So Good Cheshor Cheese Style (Casein Free).

**Manufacturer's Name:** Haldane Foods.

**Manufacturer's Address:** 25 Hayhill, Sileby Road, Barrow upon Soar, Leicestershire LE12 8LD, England. Phone: 050981-6611.

**Date of Introduction:** 1990 April.

**Wt/Vol., Packaging, Price:** 250 gm.

**New Product–Documentation:** SoyaFoods (ASA, Europe). 1990. 1(1):3.

Haldane Foods Group. 1990. "Twenty-one Today. Twenty-new and exciting products launched at Helfex alone." At least 12 of these are soyfood products. "Free from all animal products and no casein."

1313. **Product Name:** [Parma Soia Soy Drink (Chocolate, Strawberry, and 1 Other Flavor)].

**Foreign Name:** Parma Soia Soidrink (Al Cioccolata, Alla Fragola).

**Manufacturer's Name:** Parma Soia (Marketer-Distributor). Made in England by Unisoy.

**Manufacturer's Address:** Strada Logheretto 2, 43010 Corcagnano (Parma), Italy. Phone: 0521-639-148.

**Date of Introduction:** 1990 April.

**Ingredients:** Water, soya, cane sugar, strawberry puree.

**Wt/Vol., Packaging, Price:** 500 ml plastic bottles with foil lid.

**How Stored:** Shelf stable; refrigerate after opening.

**New Product–Documentation:** Talk with Xavier Karis in Italy. 1990. June 13. About 2 months ago this company, located in Parma, started a line of soya products, including soya milk (Soilat) in plain and chocolate flavors (which they probably do not make themselves). Because this is a small company, nobody has made any trouble yet over the Italian name of their soymilk, but if they get bigger, they are bound to get in trouble because Italian law forbids use of the terms "soia" and "latte" together. Their phone is 0521-639-148.

Parma Soia brochure. 1990. Photo shows aseptic package.

Letter from Xavier Karis. 1990. June 15. On the plastic Soidrink bottle is written: "Produced in England." Talk with Neil Rabheru of Unisoy. 1990. July 2. Unisoy makes this soymilk.

Label (for strawberry) sent by Xavier Karis. 1990. June 27. 9 by 2.5 inches. Red, gold, green, black, and orange on white. The semicircular logo on the front panel shows a large field with long rows of soybeans. Across the top in large letters is written: "Campi di Soia" (Fields of Soya), while across the bottom, in the same letters is written Parma Soia. There are three groups of soybean leaves at the bottom two corners and the bottom middle of the logo. And below

that, an illustration of many ripe strawberries. “An energy beverage ideal for those who like sports, who study, and who live an active life. A Natural product, without preservatives or colorings. Shelf stable; Refrigerate after opening and consume within 3-6 days.”

**1314. Product Name:** Realeat Vege ¼lb Burger with Cheese, Vegebites, Chilli Vegeburgers.

**Manufacturer’s Name:** Realeat Company Ltd. Div. of Haldane Foods Group.

**Manufacturer’s Address:** 2 Trevelyan Gardens, London NW10 3JY, England. Phone: 01-459-3401.

**Date of Introduction:** 1990 April.

**How Stored:** Frozen.

**New Product–Documentation:** SoyaFoods (ASA, Europe). 1990. 1(1):3.

Haldane Foods Group. 1990. “Twenty-one Today. Twenty-new and exciting products launched at Helfex alone.” At least 12 of these are soyfood products.

**1315. Product Name:** Tofu Burgers (Tandoori, Tikka, and Teriyaki).

**Manufacturer’s Name:** Regular Tofu Co. Div. of Haldane Foods Group.

**Manufacturer’s Address:** 25 Hayhill, Sileby Road, Barrow upon Soar, Leicestershire LE12 8LD, England. Phone: 050981-6611.

**Date of Introduction:** 1990 April.

**Wt/Vol., Packaging, Price:** Two x 3 oz burgers per unit. 12 units per case. Wholesales for £6.75. Retail for £0.75 per unit.

**How Stored:** Refrigerated or frozen.

**New Product–Documentation:** SoyaFoods (ASA, Europe). 1990. 1(1):3.

Haldane Foods Group. 1990. “Twenty-one Today. Twenty-new and exciting products launched at Helfex alone.” At least 12 of these are soyfood products.

**1316. Product Name:** Silken Tofu.

**Manufacturer’s Name:** Regular Tofu Co. Ltd. Div. of Haldane Foods Group.

**Manufacturer’s Address:** Hayhill Industrial Estate, Unit 25, Barrow-Upon-Soar, Leicester, Leicestershire, England.

**Date of Introduction:** 1990 April.

**Wt/Vol., Packaging, Price:** 135 gm. Retail for £0.39.

**How Stored:** Refrigerated.

**New Product–Documentation:** Haldane Foods Group.

1990. “Twenty-one Today. Twenty-new and exciting products launched at Helfex alone.” At least 12 of these are soyfood products. SoyaFoods. 1990. 1(2):5. Dec. “Silken Tofu.” The Haldane Foods Group has launched the first British made silken tofu. It contains organic soya milk and Welsh mountain water, and is sold in 135g pots at £0.39 recommended retail price.

**1317. SoyaScan Notes.** 1990. New Trend: Large European food companies, and agricultural- and dairy cooperatives now launching and actively promoting innovative new tofu and soymilk products: Mostly dairylike and meatlike products (Overview). May 8. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** In Jan. 1980 Vandemoortele N.V., one of Europe’s largest oilseed crushers, located at Izezem, Belgium, began to make its first commercial soymilk product (GranoVita Soja Drink in plain and carob flavors, packed in 500 ml Tetra Brik cartons) which was private labeled (co-packed) for DE-VAU-GE, a large Seventh-day Adventist health food manufacturer in West Germany. This was Alpro’s first customer. In June 1980 Vandemoortele created Alpro N.V. to take over this production. The company quickly became Europe’s leading soymilk producer and by 1990 had about 70% of the European soymilk market. Their new soymilk plant, costing about US\$15 million and having a capacity of 45 million liters a year, opened in Wevelgem in June 1990.

In June 1984 Migros, Switzerland’s leading retail food chain, launched 5 tofu products: Natural Tofu, Tofu Snack with Spices, Spicy Tofu Spread, Diced Tofu with Cream, and Tofu Bolognese. In 1985 they introduced Tofu with Mushrooms and Gravy, followed in 1986 by Canned Tofu Kashmir (with Curry and Fruits), Tofu Spread with Cheese (in a Tube), Tofu Chocolate Crème, and Tofunaise (in a Tube), then in 1987 by Seasoned Tofu. In 1986 Migros, a 61 year old cooperative with 1.4 million members, had net sales of 3,166 million Swiss francs. The tofu was made by a Migros company named Conserves Estavayer in Estavayer-le-Lac, near Zurich.

Galactina is a well established Swiss company (located in Belp) that has made a soymilk named Naga Sonda for enteral tube feeding since 1980. In 1981 they launched the product in liquid Tetra Pack. They entered the tofu market in 1984 with Galactina Tofu, then in 1985 added three types of Seasoned Tofu (Gourmet Diced with Soy Sauce & Spices, Provencale with Herbs, and Jardiniere with Vegetables), followed in 1987 with Tofu Spread and 1988 with Tofu Burger and Tofu Salads. All were marketed very attractively.

In Aug. 1985 DE-VAU-GE, one of Europe’s oldest and largest producers of vegetarian health foods, began operation of its new soymilk plant (purchased from STS/DTD) in Lueneburg, West Germany. By 1990 they were Europe’s second largest soymilk manufacturer, with 15-20% of the market. They also sold many tofu products and were planning to produce tofu in the near future.

In 1985 Laiteries Triballat, a large French dairy products company (mostly cheese, located at Noyal-sur-Vilaine, Brittany) introduced Sojasun, an innovative cultured soymilk yogurt in 4 flavors, two with bits of fruit and two with fruit puree. In Oct. 1988 and early 1989 they promoted the

product extensively on French television and in German print media. Sales in several western European countries were said to be good.

In 1986 Parmalat, the Italian dairy giant, introduced a soymilk named Soialat. By 1989 they had created a subsidiary named Parma Soia, which sold three lines of more than 20 soy products. The Campi di Soia line (containing soymilk, soy pasta, sauce, and sprouts) was sold at supermarkets. The Nature Soy line was imported, and the Erboristeria line was for the health food market.

In Jan. 1987 Cacoja, a newly-formed affiliate of the Coopérative Agricole de Colmar (CAC), began production of soymilk and soy desserts at its new, fully-automated plant (with an ultrafiltration system) at Issenheim, France. Purchased from Alfa-Laval, the plant cost 11 million French francs and had a capacity of 1,500 liters/hour of soymilk containing 4% protein. By 1990 Cacoja was Europe's third largest soymilk producer.

In Sept. 1987 Rayner Burgess Ltd., a large British Food company that specializes in an array of unique condiments, purchased Cauldron Foods Ltd., Britain's second largest tofu manufacturer, and the largest marketing its products to the Caucasian and health-food trades.

In Jan. 1988 British Arkady, a large British food conglomerate owned by Archer Daniels Midland Co. (Decatur, Illinois) acquired the Haldane Foods Group, and made it part of British Arkady's Health Foods Div. The Haldane Foods Group was put together by acquisition of Direct Foods Ltd. (founded 1980, acquired by the Group in 1985), Vegetarian Feasts Ltd. (founded 1984, acquired 1986), Haldane Foods Ltd. (founded 1983, acquired Aug. 1987), Vegetarian Cuisine Ltd. (founded 1985, acquired 1987), Regular Tofu Co. Ltd. (founded 1983, acquired Aug. 1987), Realeat Foods Ltd. (founded 1984, acquired Sept. 1988), Saucemasters Ltd. (founded 1988, acquired Feb. 1989), and Genice Foods Ltd. (founded 1988, acquired March 1989). Self-proclaimed as "Europe's leading healthier food group, most of these companies make tofu or soyfood products.

In April 1989 Huegli AG, a leading Swiss food company, purchased 75% ownership in Yamato Tofuhaus GmbH, one of West Germany's leading tofu manufacturers. At about the same time, Huegli purchased Horst Heirler, the country's leading distributor of fresh products.

Also in April 1989 Lima N.V. of Belgium, one of Europe's earliest natural foods companies, purchased Jonathan PVBA, Belgium's leading tofu manufacturer.

In Sept. 1989 Innoval (formerly Sojalpe), an acquired affiliate of Les Silos de Valence (a large 5,000-member cereal cooperative in Rhone Alpes, France), began to produce tofu, soymilk, and liquid soy concentrate (with an ultrafiltration unit) at a modern new plant, with a capacity of 2,000 liters/hour, purchased from Alfa-Laval at a cost of 20-21 million French francs.

In Feb. 1990 Euro-Nature, a French investment fund,

purchased 97% Lima N.V. of Belgium.

In early 1990 Avo Feinkost GmbH, a large West German spice from Osnabrueck, launched the Sofit line of soy products, including various meatlike products, dressings, and salads.

1318. *SoyaScan Notes*. 1990. Brief history of British Arkady Co. Ltd. (Overview). May 11. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** 1921. British Arkady starts doing business.

1923. The *Arkady Review* starts publication.

1929. The company introduces Super Arkady, its first soy product. An ingredient used for breadmaking, it contained enzyme-active full-fat soy flour as its main ingredient.

1965. TVP brand textured soy flour starts to be sold by the company under license from Archer Daniels Midland Co. (ADM) in the USA.

1973. TVP starts to be produced by British Arkady in England.

1974. ADM acquires British Arkady Co.

1987 June. Societe Industrielle des Oléagineux (S.I.O.) acquired by British Arkady.

1988 Jan. Haldane Foods acquired by British Arkady.

Note: The company name is pronounced AR-kuh-dee.

1319. Nordquist, Ted. 1990. Soy ice cream in Sweden and Europe (Interview). *SoyaScan Notes*. May 18. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** This week Ted introduced the "absolutely best-tasting soymilk-based ice cream in the world. Called Tofu Line Glass in vanilla and chocolate flavors, it tastes like old fashioned ice cream made from cream. The vanilla is better than its dairy counterpart." Four-color brochures and labels have been printed. Ted makes the soymilk at the rate of 4,000 liters/hour at Trensums Musteri, a juice company located in Tingsryd, located 20 or 30 minutes miles to the north of the southern seaside city of Karlshamn. Both Tingsryd and Karlshamn are located in Blekinge County. It's a very high-tech soymilk. This is the first product to come out of Ted's years of collaboration with Trensums. Ted buys the soy base from Trensums and ships it by tank truck to Winner (pronounced Vinner), one of Sweden's largest ice cream producers; it is a division of Karlshamn in Karlshamn. He sells the soy base to Winner. Winner makes the ice cream, and sells it back to Ted. It is hard-packed in 3/4 liter octagonal cartons (each has 8 sides with the top and bottom flat). Ted then sells the ice cream to AB Svenska Nutana, a Seventh-day Adventist distributor and marketer in Rimbo, Sweden. Nutana has exclusive sales rights in Sweden. Ted is now working on exports to Finland and Japan.

Ted and his coworkers are only interested in high-volume products. He hopes to sell in Sweden at least 400,000 liters/year of the new ice cream, made from 200,000 liters



of the liquid mix. This is 9,000 liters/week, or 30 pallets/week. In addition, he hopes to export the product to other Scandinavian countries and to Japan and perhaps the continent.

It is quite surprising that, whereas there are many soy ice creams in America, there are only 2 others in Europe. One is made by Schoeller, which is one of Europe's largest ice cream producers. They bought an Alfa-Laval system that transforms whole soybeans (using the Illinois method, without separation of okara) into soymilk which they then spray dry and use to make a soy ice cream. "The samples of the ice cream and powder that they sent to Semper in Sweden were a total catastrophe."

Unisoy in England, run by Neil Rabheru, an Indian man, also makes a soymilk named Unisoy Gold and a soymilk ice cream named Maranellis Ice Supreme. They have been out since about mid-1989. It is fortified with calcium and vitamins to be as close as possible to dairy milk. Ted thinks it tastes fantastic, but the ice cream doesn't come close to Ted's. The owner of the company came to Sweden and tried to sell Ted his ice cream and aseptically packed soy base. Address: Aros Sojaprodukter, Bergsvagen 1, S-19063 Orsundsbro, Sweden. Phone: 0171-604 56.

1320. Fehlberg, Eric C. 1990. Re: List and activities of Seventh-day Adventist health food companies worldwide. Letter to William Shurtleff at Soyfoods Center, May 24. 6 p. Typed, with signature on letterhead.

• **Summary:** For each of the following companies is given the date of founding, date manufacturing started, and the soy products presently manufactured: Granovita, Spain. Nutana, Holland. Nutana, Norway. Nutana name changes. Austrian Food Company. DE-VAU-GE, West Germany. Sahm Yook Foods, Korea. Sanitarium Health Food Company, Australia (3 pages).

Lists (with addresses) the following companies: Sanitarium Health Food Company in Wahroonga, NSW, Australia; DE-VAU-GE Gesundheitswerk GmbH in Lueneburg, West Germany; San-iku Foods in Sodegauramachi, Kimitsu-gun, Chiba-ken, Japan; Korean Food Factory (Sahm Yook Foods) in Choongchungnam-do, South Korea; Alimentos Integronaturales y Panificadora la Carlota in Montemorelos, N.L., Mexico; Produtos Alimenticios

Superbom Industria e Comercio Ltda. in Sao Paulo, Brazil; Alimentos Granix in Florida, Buenos Aires, Argentina; Nutana Health Food Company in Bjaeverskov, Denmark; AB Svenska Nutana in Rimbo, Sweden; Granose Foods Ltd. in Newport Pagnell, Bucks, England; Pur-Aliment Food Factory in Clichy-Cedex, France; PHAG Food Factory in Gland, Switzerland (Note: PHAG is an acronym for Produits Hygiéniques Alimentaires Gland); Egypt Food Factory in Heliopolis, Cairo, Egypt; Glaxo India Limited in Bombay, India; Westico Foods Ltd. in Mandeville, Jamaica; Industrias Covac S.A. in Alajuela, Costa Rica; South China Island Union Mission in Hong Kong (3 pages). Address: Director, International Health Food Assoc., Seventh-day Adventist General Conference, 12501 Old Columbia Pike, Silver Spring, Maryland 20904. Phone: 301-680-6674.

1321. Pringle, William. 1990. Re: History and present activities of The British Arkady Company Ltd. Letter to William Shurtleff at Soyfoods Center, May 30. 2 p. Typed, with signature on letterhead.

• **Summary:** This company, founded in Sept. 1921, is now a member of the Arkady ADM Group. "The British Arkady (pronounced AR-kuh-day) was originally a joint company between The Ward Baking Co. in the U.S.A. and Baker Perkins of Willesden, London, a bakery machine company. The original purpose of the company was to sell the Arkady product... The original address was Willesden, London, England."

"Arkady Soya mills is not a separate entity. It is simply a name we have used in advertising and promotion. The mills making full fat soya flour belong to British Arkady and are on our premises here.

"British Arkady began to sell T.V.P. in 1965, but we did not produce on this site until 1973. The product we sold was ADM's, and we were their agent in the UK.

In 1974 ADM acquired British Arkady.

Concerning soymilk: "Our company had a joint venture for the production of soya milk dating back to the early 70's. We were the providers of technology and our partners made and sold the product. It was based on the use of full fat soya flour (dehulled ground soya beans) which was extracted with water. The milk was sold in cans. We no longer have a commercial interest in this product, but I believe it is still on

sale. We have never sold soya milk based on isolated soya protein, but we have given other companies the technology and some of these products are still for sale.

“Haldane Food Group and S.I.O. are fully owned subsidiaries of The British Arkady Co. Ltd.

“British Arkady’s three best-selling products that contain soy as a major ingredient, ranked in descending order of annual sales, are Full-fat Soya Flour, Textured Vegetable Protein, and Bakery ingredients.

Information on number of employees and annual sales is confidential. Address: Director-General Manager, The British Arkady Co. Ltd., Skerton Rd., Old Trafford, Manchester M16 0NJ, England. Phone: 061-872-7161.

1322. Shurtleff, William; Aoyagi, Akiko. 1990. The tofu market in Europe. Lafayette, California: Soyfoods Center. 137 p. 28 cm. [600+ ref]

• **Summary:** Contents: Introduction and overview: Production of tofu in Europe—Totals by country, Europe’s largest tofu manufacturers, trends in the tofu market in Western Europe (9 p.). The tofu market in the United Kingdom (Ranking of companies, production statistics, details on individual companies 10 p.). The tofu market in the Netherlands (10 p.). The tofu market in the West Germany (21 p.). The tofu market in the France (19 p.). The tofu market in the Belgium (10 p.). The tofu market in the other European countries (16 p.). Index. List of tofu manufacturers in Europe (sorted by country, and within each country by company name, 9 p.). Update on the tofu market in Europe. April 1991 (28 p.).

Production of tofu in Europe—Totals by country: United Kingdom 47,500 kg/week, started 1966, 35% share of five leading countries. Growth rate: 10%. Netherlands 44,500 kg/week, started 1964, 33% share of five leading countries. Growth rate: 8%. West Germany 24,650 kg/week, started 1981, 18% share of five leading countries. Growth rate: 10%. France 14,750 kg/week, started 1982, 11% share of five leading countries. Growth rate: 35%. Belgium 5,000 kg/week, started 1977, 4% share of five leading countries. Growth rate: unknown.

Europe’s largest tofu manufacturers: 1. Heuschen-Schrouff, Netherlands, started 1964, makes 37,500 kg/week. 2. Dragon & Phoenix, UK, started 1966, makes 20,000 kg/week. 3. Cauldron Foods, UK, started 1981, makes 15,000 kg/week. 4. Société Soy, France, started 1982, makes 12,500 kg/week. 5. Soyastern / Dorstener Tofu, West Germany, started 1982, makes 7,000 kg/week. 6. Jonathan PVBA (Div. of Lima Foods), Belgium, started 1977, makes 4,500 kg/week. 7. Regular Tofu Co. (Haldane Foods), UK, started 1981, makes 4,000 kg/week. 8. Paul’s Tofu, UK, started 1981, makes 3,500 kg/week. 9. Geestland, West Germany, started 1985, makes 3,250 kg/week. 10. Yamato/Huegli, West Germany, started 1982, makes 3,000 kg/week. 11. Galactina, Switzerland, started 1984, makes 3,000 kg/week. 12.

Galactina, Switzerland, started 1984, makes 3,000 kg/week. 13. Soyana, Switzerland, started 1982, makes 3,000 kg/week. Total: 116,250 kg/week. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

1323. *SoyaFoods (ASA, Europe)*. 1990. ADM expansion. 1(1):2. Spring/Summer.

• **Summary:** “A \$70 million soya protein complex is to be built by the Archer Daniels Midland Company at its soyabean processing plant in Europoort, Holland. ADM plans for the plant to be in operation by the end of 1990 and the complex will have facilities to produce soya flour, concentrates, isolates and textured soya products. The recent reduction of EC support schemes for dairy products was one of the reasons behind the expansion. ADM believes that now that dairy products have increased in price, soyaproteins are more competitive and with the growth of the European Market and the new possibilities in the Soviet Union, this expansion has great potential.”

Note: This is the earliest English-language document seen (Jan. 2016) that contains the term “soyaproteins” (or “soyaprotein”).

1324. *SoyaFoods (ASA, Europe)*. 1990. Helfex 90: SoyaFoods products. 1(1):3. Spring/Summer.

• **Summary:** Gives a very brief (and frustratingly incomplete) description of the many new soyfood products introduced at Helfex 90, held 8-9 April 1990 at Birmingham, England. The statement “The *Haldane Foods Group* celebrating its 21st birthday with the launch of 21 new products at the show...” is incorrect, according to a letter (fax) from Peter Fitch, head of the Haldane Foods Group (dated 16 July 1990). Twenty-one new products were launched and a leaflet described them, but this was NOT the company’s 21st birthday.

1325. Lindner, Anders. 1990. Re: Consumption of soymilk in Europe, by country and per capita. Letter (fax) to William Shurtleff at Soyfoods Center, June 19. 1 p.

• **Summary:** The following figures are my guesstimates for the amount of soymilk consumed in major European countries. Most of the soymilk produced in Belgium [by Alpro] and Germany [by DE-VAU-GE] is consumed in other countries. Note: The large consumption in the U.K. is due to both its large total population and its large population of vegetarians and vegans. The latter do not consume milk or other animal products.

Country (Population)—Soymilk consumption in million liters—% of total—liters per capita per year

United Kingdom (56.7 million)—20 million liters\*—40% of total—0.35

West Germany (60.2 million)—10 million liters—20% of total—0.17

France (55.8 million)—6 million liters\*\*—12% of total—0.11

Belgium (9.9 million)–3 million liters–6% of total–0.30  
Netherlands (14.7 million)–2 million liters–4% of  
total–0.14

Switzerland (6.5 million)–2 million liters–4% of  
total–0.31

Scandinavia\*\*\* (22.8 million)–2 million liters–4% of  
total–0.088

Italy (57.4 million)–1 million liters–2% of total–0.017

Austria (7.6 million)–1 million liters–2% of total–0.13

Spain (39.8 million)–1 million liters–2% of total–0.025

Others\*\*\*\* (24.3 million)–2 million liters–4% of  
total–0.082

Total (355.7 million)–50 million liters–100%–0.14

\* Neil Rabheru, founder and director of Unisoy, the  
largest soymilk manufacturer in the UK, estimates that 18-  
20 million liters/year of soymilk are consumed in the UK.

\*\* Bernard Sturup of Société Soy, a large soymilk maker  
in France, estimates consumption of soymilk in France to  
be much higher, about 11 million liters. Sturup's estimate  
is probably more accurate. \*\*\* Scandinavia = Sweden (8.3  
million), Denmark (5.0 million), Finland (5.0 million),  
Norway (4.2 million), Iceland (0.25 million).

\*\*\*\* Others = Portugal (10.2 million), Greece (10.0  
million), Ireland (3.7 million), Luxembourg (0.369 million),  
Malta (0.358 million).

Highest per capita consumption: United Kingdom  
0.35, Switzerland 0.31, Belgium 0.30, West Germany 0.17,  
Netherlands 0.14, Austria 0.13, France 0.11. Lowest per  
capita consumption: Italy 0.017, Spain 0.025. Address: P.O.  
Box 19002, S-250 09 Helsingborg, Sweden. Phone: 42-  
92776.

1326. *SoyaScan Notes*. 1990. Unisoy Milk 'n' By-Products  
Ltd. (Interview). June 29. Conducted by William Shurtleff of  
Soyfoods Center.

• **Summary:** The company, which is basically a soymilk  
company, now makes 6 products: White Wave Soya Milk  
(in sugar free and sweetened varieties), Unisoy Gold (a  
soymilk reinforced with calcium and vitamins), Soya Yogart,  
Maranellis (Organic soya ice cream, sweetened with fruit  
juice; it is delicious), Carob and Banana Drink (organic).  
They plan to soon launch some organic pancakes called  
Crêpolettes. Neil Rabheru founded the company, but the  
idea came from John Patel. Jan Freeman was also involved.  
Mr. Arora, who Neil knows, has never been involved in this  
company. Address: Stockport, Cheshire SK6 2RF, England.  
Phone: 061-430-6329.

1327. **Product Name:** Veggie Burger (Shipped from the  
USA to the Soviet Union as a Dry Mix).

**Manufacturer's Name:** Archer Daniels Midland Co.

**Manufacturer's Address:** 4666 Faries Parkway, Box 1470,  
Decatur, IL 62525. Phone: 800-637-5850.

**Date of Introduction:** 1990 June.

**Ingredients:** Textured soy protein concentrate, natural  
flavors, seasonings.

**How Stored:** Shelf stable.

**New Product–Documentation:** Peter Golbitz. 1990.

Soya International. April/June. p. 10-12. "Soya Interview:  
Dwayne Andreas, CEO Archer Daniels Midland: Soybean  
Ambassador." Peter Golbitz. 1990. Soya International. April/  
June. p. 14. "ADM unveils new veggie burger: Over 50  
million served." "Originally developed by ADM's wholly-  
owned subsidiary in the United Kingdom, British Arkady,  
over fifty million servings of the veggie burger, along with  
soy sausages and meat analog mixes, were sold in the  
U.K. last year. According to Ron Ferrari, sales manager of  
ADM's Protein Specialties Division, the veggie burger was  
developed to meet the demands of vegetarians..."

Archer Daniels Midland Co. 1990. "Annual report."  
"ADM has introduced its veggie burger, an all-vegetable  
protein food product based on soy protein concentrate.  
This innovative, cholesterol-free, reduced calorie product  
also contains dietary fiber and appeals to the vegetarian  
market. Early indications of good acceptance in the U.S. and  
U.S.S.R. suggest that this product has global potential..."

Stewart Reeve. 1991. *Soybean Digest*. Dec. p. 40a.  
"Fast food delight." "The product has already proven itself  
in an export market. ADM introduced a similar product  
trademarked as the Veggie Burger to the Soviet Union in  
October 1989 at a food trade show in Moscow. Shipped as  
only the dry mix, Veggie Burgers are sold in Soviet grocery  
stores as the mix or served in restaurants as burgers. The  
Petina restaurant in Moscow now sells 4,500 Veggie Burgers  
a day, Lensch reports. The Veggie Burger is tailored to the  
tastes of Soviet consumers. 'For example, the Soviet Union  
product has 10% fat content rather than the 5% the U.S. has.  
They're looking for calories,' he explains."

Talk with Lee Lensch of ADM. 1991. Dec. 16. Initial  
commercial sales began in June 1990. Although Realeat and  
British Arkady developed the Vegeburger in the UK using  
TVP (textured soy flour), ADM reformulated it in the USA  
using textured soy protein concentrate. Worthington Foods  
has a registered trademark on the name Veggie Burger in the  
USA only, so that is why ADM named its product Harvest  
Burger–after extensive talks with Worthington in the spring  
of 1990. The Veggie Burger made in the USA with textured  
soy protein concentrate is not currently sold in the UK. Kees  
Touw, who is in charge of all international sales for this  
product, would know why it is not sold–but it is probably  
because British Arkady or Haldane has their own line of  
products. Maybe one of their products is now made with  
textured concentrates.

1328. Golbitz, Peter. 1990. ADM unveils new veggie burger:  
Over 50 million served. *Soya International (Bar Harbor,  
Maine)*. April/June. p. 14.

• **Summary:** "What vegetarian burger can make the claim

'Over 50 million sold?' Archer Daniels Midland's (ADM) new soy protein-based burger! Made from ADM's own formula of textured soy protein concentrate and other vegetable-based ingredients, this is the same burger that Soviet officials were caught stuffing in their pockets at a recent U.S. trade fair exhibit in Moscow.

"Originally developed by ADM's wholly-owned subsidiary in the United Kingdom, British Arkady, over fifty million servings of the veggie burger, along with soy sausages and meat analog mixes, were sold in the U.K. last year. According to Ron Ferrari, sales manager of ADM's Protein Specialties Division, the veggie burger was developed to meet the demands of vegetarians... 'This cholesterol-free product contains dietary fiber, half the fat, 20% fewer calories, and similar protein levels of beef.'

"ADM, because it is not a consumer food products company, is currently looking for marketing companies to distribute the product to supermarkets, natural food stores and supermarkets. 'We would like to see the product sold in fast-food outlets as well, as it would be a natural alternative to meat,' says Ferrari...

"Dwayne Andreas, ADM's illustrious chairman, has dubbed the burger the 'ninth wonder of the world' because it has the ability to relieve extreme malnutrition for over 500 million people." Address: Soyatech, Bar Harbor, Maine.

1329. Golbitz, Peter. 1990. Soya Interview: Dwayne Andreas, CEO Archer Daniels Midland: Soybean Ambassador. *Soya International (Bar Harbor, Maine)*. April/June. p. 10-12.

• **Summary:** "Dwayne Orville Andreas has often been called the Soybean King. But perhaps an even more apt title would be the Soybean Ambassador. As Chairman of the Board and Chief Executive of Archer Daniels Midland Company (ADM), Andreas finds himself not only at the helm of one of the largest agribusiness concerns in the world, but also as a chief promoter of soybeans and their potential to feed the world.

"And he's not talking beans with just anyone. Andreas' friends and associates include, among others, former presidents Ronald Reagan and Richard Nixon; his late, long time friend Hubert Humphrey; Mrs. Nelson (Happy) Rockefeller, Senator Bob Dole, and, as of late, he has been seen with the likes of none other than Soviet leader Mikhail Gorbachev. And this is where his zeal for soybeans and soyfoods comes in. As he discusses in the following interview, humankind can no longer afford to feed itself on the spoils of a meat-centered economy. If we are to survive as a race, he believes, there needs to be a radical shifting of priorities in food production.

"As chairman of ADM, an \$8 billion a year soybean and grain processing giant, Dwayne Andreas could just be one of the architects of the future world of soyfoods, where veggie burgers replace hamburgers at home and in fast-food

restaurants, and where milk will come from soybeans instead of cows.

"Peter Golbitz: Archer Daniels Midland is one of the largest soybean processors in the world and has a tremendous amount of influence on the U.S. and world soybean markets. As you are aware, of course, the U.S. has been steadily losing market share as a soybean producer over the past decade and this trend is expected to continue through the '90s. What impact will this have on ADM's role in the market and the U.S.'s role as a leading agricultural producer?"

"Dwayne Andreas: In the first place, I'd say it's manifest that ADM doesn't have much influence, or we wouldn't have this situation developing. It's due to the government programs which have made it much more profitable for farmers to raise corn than to raise soybeans—this has caused the decline in soybean production in the United States. And of course the Brazilians and Argentines have stepped in to fill this gap and have increased their soybean production considerably. Now, as far as the repercussion on ADM, what we have had to do is close five plants in the United States and to buy three very large plants in Europe where we can process Brazilian and Argentine beans instead of American beans. So as far as ADM is concerned, we have been able to cope. Unfortunately for the farmers, they are not able to move their farms to Brazil or to Argentina and therefore they are just losing the soybean market which was built up largely by the ambition, and the farsightedness of the American farmers during the 60's and 70's.

"P.G.: Could world markets absorb increased U.S. soybean production right now, even though South American production has increased so much, or would a larger supply drive soybean prices downward?"

"D.A.: If the U.S. had not drastically reduced its acreage devoted to soybeans, then Brazil and Argentina would not have expanded as rapidly as they have. However, that is water over the dam.

"In answer to your questions, yes, the U.S. could now start producing more soybeans in order to take advantage of the increased demand which is growing all over the world as the use of margarine increases, as the production of chickens increases.

"Yes, we could regain our position, but we have to have realistic, market oriented government policies in order to do that.

"P.G.: There have been a number of comments attributed to you in which you state that in order to feed the world's burgeoning population, soybeans are going to have to play a more direct role in the feeding of people. What kind of role will ADM play in this and do you envision a shifting of priorities within your company to fit this role?"

"D.A.: We have been researching and selling edible soybean products for forty years. We now are by far the largest producer of edible soybean products. We make a burger, a patty, which is very much like a hamburger but

which has no cholesterol. Its very high in protein, high in fiber and contains only vegetable oil and vegetable protein.

“We also make a wide variety of other edible products out of soy flour and soy concentrate. That business is growing rather rapidly, but if you want to look over the long pull, in the U.S., we are keeping four times as many tons of animals alive as people in order to eat meat. As the population increases, as it will by one billion people between now and the year 2000, that balance is going to have to change in order to feed the human race.

“To feed protein to the animal and then eat the animal is fine for very rich Western countries, but eventually it will be too expensive to feed the added population of the world that way. Edible products made from soy proteins are bound to grow in use rapidly over the years.

“P.G.: Would you even advocate the move towards a more vegetarian-type diet in Western, developed nations as well?

“D.A.: I’m not talking about giving up meat because that certainly will not happen in the next few decades.

“But many people, because of health reasons, are becoming vegetarians and the soybean protein is the logical product for vegetarians to eat.

“For example, we’ve sold 50 million of these soy protein burgers last year and they went to people who would probably not be eating meat anyway, so I can’t say that it is competing with meat at this point.

“P.G.: As Eastern European nations and the Soviet Union begin to open up their economies in order to improve their standards of living, especially in regard to the availability of food, there are obviously great opportunities for those companies already in position to service those needs.

“Is ADM planning to build any new plants in the Soviet Union or other Eastern European countries? And, if so, what products would be produced there?

“D.A.: Well yes, through our affiliate company called ACTI (Alfred C. Toepfer International), which is successor to the Toepfer company in Hamburg, ADM does a total of about 6 billion dollars worth of business and 1.5 billion of it is in those Eastern European areas and Russia. So we probably do more business than any other company in commodities in that area.

“There are many questions to answer as that area gets reorganized economically and the standard of living will start to rise. That will mean that they will be using considerably more margarine and there will be a rapid growth in chicken production.

“We will be able to participate in that because we are now a majority owner in the principal soybean plant in Hamburg, Germany which services that area and also one in Europoort at Rotterdam. So we are in a position to benefit from the opening of that market.

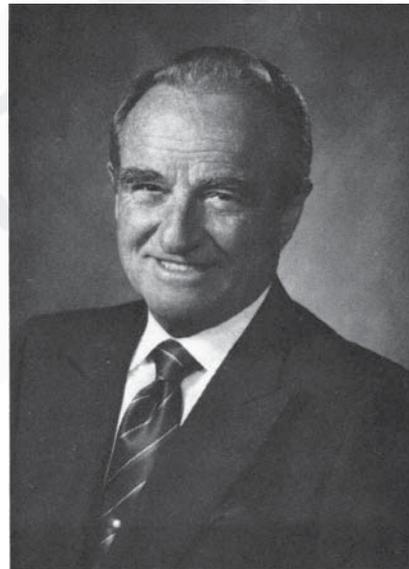
“As far as building plants is concerned, those countries

can buy soybean meal cheaper than they can make it because there are many ways to buy soybean meal that is indirectly subsidized.

“They also can buy subsidized vegetable oil, like palm oil and heavily subsidized soybean oil from Brazil and Argentina, so it is not likely that they are going to build up an oilseed industry to process imported oilseeds. However, what I do expect is that they will rapidly increase their rape seed crop in order to help fill the increased demand for protein and cooking oil.

“There will be plants built there to process rape seed, and I wouldn’t be surprised if ADM would participate in that” (Continued). Address: Soyatech, Bar Harbor, Maine.

1330. Golbitz, Peter. 1990. Soya Interview: Dwayne Andreas, CEO Archer Daniels Midland: Soybean Ambassador (Continued–Document part II). *Soya International (Bar Harbor, Maine)*. April/June. p. 10-12.



• **Summary:** (Continued): “P.G.: With the Soviet Union moving towards relieving chronic food shortages, wouldn’t the introduction of soyfoods be the quickest and most efficient means to accomplish this?”

“And wouldn’t it also be healthier than expanding their consumption of meat and dairy products?”

“D.A.: Well, yes. If you would look at the *New York Times* (May 6, 1990) of this Sunday, *The Week in Review* section has a large article about how the cow has got to be replaced over time by soybeans because of several reasons.

“The economics of it—margarine can be produced through soybeans far cheaper than butter can be produced through cows; and also, meat-like products can be made from soybean protein that is better than, and serves a purpose other than, that of cow’s meat.

“Now the Soviets, if they wanted to, and if they understood this matter and concentrated on it, could triple

their milk consumption by simply making soybean milk out of soy protein. And they could add a million tons equivalent of meat to their consumption with soybean patties, at approximately one fourth the cost of adding to their meat production.

“Not only that, but they would vastly improve the health of their people by reducing their cholesterol intake and increasing their intake of vegetable protein.

“Yes, I would say that the Soviet Union is in a unique position to take advantage of this new technology and they are very likely to do so.

“P.G.: Are the people who are in the decision making positions in the Soviet Union aware of these products?

“D.A.: Yes they are.

“P.G.: What role does ADM plan to have in the soyfoods industry as it further develops and becomes a regular part of the mainstream American diet?

“D.A.: We are fundamental producers of isolated soy protein, which is 90% protein, and edible soybean concentrate which is 70% protein. We are also the largest producer of edible soy flour for the bakery trade. We are already in that business and I would say, I don't know exactly what percentage we hold, but we are probably the largest producer of edible soy products by far in the world and we will undoubtedly continue to be.

“We are building an edible soy plant in Europoort which will produce soybean flour, isolated soy protein and soybean concentrate for the entire European and Eastern Europe and Russian market.

“P.G.: How much is ADM involved in food giveaway programs that use soy-based foods and does ADM plan to expand its participation in these programs?

“D.A.: We participate like all other companies on a competitive basis for the PL 480 and school lunch and other programs with quite a number of products.

“In addition to that, and quite apart from that, we donate a good deal of edible soy products to Mother Theresa who distributes it all over the world to hungry people with great success. We also contribute a good deal of edible soy material to Operation Blessing which is a very aggressive program to distribute food to the poor and the hungry managed by Pat Robertson and his television group.

“P.G.: Will this decade, with people's acutely developing environmental awareness and increasing sensitivity to basic human needs, usher in a new era for soyfoods around the globe?

“D.A.: Yes, there is no question about it. The trend is unmistakable and very strong.”

A portrait photo shows Dwayne Andreas. Address: Soyatech, Bar Harbor, Maine.

1331. Shurtleff, William; Aoyagi, Akiko. comps. 1990. *Bibliography of soy flour and cereal-soy blends: 3,085 references from the 3rd century B.C. to 1990, extensively*

annotated. Lafayette, California: Soyfoods Center. 427 p. Subject/geographical index. Author/company index. Language index. Printed June 6. 28 cm. [3085 ref]

• **Summary:** This is the most comprehensive bibliography ever published on soy flour and cereal-soy blends. It is also the single most current and useful source of information on this subject available today, since 56% of all references (and most of the current ones) contain a summary/abstract averaging 84 words in length.

One of more than 40 bibliographies on soybeans and soyfoods being published by the Soyfoods Center, it is based on historical principles, listing all known documents and commercial products in chronological order. Containing 32 different document types (both published and unpublished, including many original interviews and partial translations of Japanese and European works), it is a powerful tool for understanding the development of this subject and related products from its earliest beginnings to the present, worldwide.

Compiled one record at a time over a period of 15 years, each reference in this bibliography features (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English publications together with an English translation, month and issue of publication, and the first author's first name (if given).

It also includes details on 653 commercial soy flour products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to use the bibliography, a complete subject and geographical index, an author/company index, a language index, and a bibliometric analysis of the composition of the book (by decade, document type, language, leading periodicals or patents, leading countries, states, and related subjects, plus a histogram by year) are also included.

The price of this 427 page spiral bound book (ISBN: 0-933332-66-1) is \$213. All orders must be prepaid in U.S. dollars.

For Additional Information: Please contact William Shurtleff, Director, Soyfoods Center: 510-283-2991. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

1332. Rabheru, Neil. 1990. Brief history of Unisoy Milk 'n' By-Products Ltd. (Interview). *SoyaScan Notes*. July 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Neil, who founded this company, was born in Tanzania. One of his parents was of Indian origin (born

in India). He arrived in the UK in 1972 and went to work for a very large electronics company. By the mid-1980s he had cornered himself into a very specialized field of environmental testing and performance of defence equipment. The next step up in the organization was a long way away, so having run out of excitement in life, he began to look for more rewarding work. While doing a little import/export work he met an Indian named Mr. John Patel [pronounced puh-TEL] who suggested to him that they start a company to make soymilk, soy ice cream, and burgers. Mr. Patel did not have any money. The company was founded in June 1985. Before anything else happened, Neil became very concerned over irregularities in Mr. Patel's financial activities, and decided to discontinue his involvement with Mr. Patel. A few days later Mr. Patel died unexpectedly on 5 Nov. 1985. On Nov. 10-12 Neil selected the location for his new plant, then he raised the necessary startup capital from five venture capitalists in high tax brackets, but he was the company's only executive. Neil was never in any way involved with Michael Cole or with Soya Health Foods Ltd. (which is still owned by Mr. Arora, a Sikh) despite what others have said. Jan Freeman is presently involved with Unisoy.

In May 1986 Unisoy began to make its first product, White Wave Soya Milk (plain/unsweetened, or sweetened with raw cane sugar) at their present address. Before this time, the soymilk market in the UK was "very stagnant and boring, with limited growth. There was a very high price differential between dairy milk and soya milk. Soymilk packaging was poor. The ratio of the volume of business to the number of brands on the market was too high. Too many brands were fighting for too small a market. There was tremendous brand loyalty, promoted in part by the wide range of product tastes. That was Unisoy's biggest problem. So Unisoy decided to crash the price barrier, and develop some nice packaging and a better tasting, much creamier product." To learn how to make soymilk, Rabheru did an extensive study of the literature. He found many conflicting opinions but agreement on some basic points. To help resolve these, he consulted with Dr. H.L. Wang at the USDA Northern Regional Research Center in Peoria, Illinois. He developed a unique process, purchased a soymilk plant from Taiwan, modified it with steam injection and instrumentation to suit his application (he has an engineering background), developed soymilk products, ran taste tests, and continued improving his process. Unisoy's main competitors in the soymilk market at that time (and still today) were Alpro/Vandemoortele and Granose. Unisoy has taken over virtually all of the market share of Soya Health Foods Ltd., mostly because of better quality and lower price.

In May 1987 Unisoy introduced White Wave Soya Yogart, a line of products were yogurt-like desserts in fruit flavors with a shelf-life of 10-11 weeks with aseptic packaging. This was followed by Unisoy Carob & Banana

Organic Drink (Aug. 1988), Unisoy Gold soymilk (March 1989), Maranellis Ice Supreme (soy ice cream, May 1989), and Unisoy Soy Yogart (Aug. 1989). All the previous soy ice creams and yogurts in the UK had contained soy protein isolates, since the manufacturers did not know how to make soymilk with a high protein levels. Even today, all the soy ice creams in the UK are made from soya isolates. Unisoy makes a special rich soymilk used specially for making their ice cream.

Over the years Unisoy steadily improved its soymilk process with numerous innovations. They now make excellent quality soymilk without dehulling the soybeans, without adding any oil or lecithin, and using only 1-2 people to operate the largely automated plant.

In Dec. 1988 Neil sold the company to Daisy Dairies Ltd. This cooperative group of companies has their head office in Hyde, Cheshire, and they also have fresh milk, UHT, catering, and ice cream manufacturing divisions, plus now Unisoy. He would prefer not to comment on the effects/results of the sale. Address: Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430 6329.

1333. Rabheru, Neil. 1990. The soymilk industry and market in the United Kingdom (Interview). *SoyaScan Notes*. July 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** There are only two significant manufacturers of soymilk from soybeans in the U.K.; Unisoy and Soya Health Foods Ltd. Plamil Foods Ltd. buys soy protein isolates from Protein Technologies International, then subcontracts with a dairy to have these mixed with water and other ingredients, according to Plamil's formula, to make a soymilk. As far as he knows, Plamil has never purchased soybeans to make soymilk and has never had their own plant. Haldane used to import its soymilk from France. This soymilk was made, not from soybeans but from some kind of a spray-dried formulation. Then Unisoy started supplying Haldane, but that contract came to an end when Haldane was acquired by another company. Neil thinks they are now importing again, probably from France, not from Australia. Haldane's imports are very small. Neil has never heard of Itona Products Ltd. in Wigan, Lancashire [although they are still in business in 1990].

Of the soymilk made in the Unisoy produces well over 50%. Approximately 18-20 million liters of soymilk are sold and consumed in the UK each year. It is the biggest soymilk market in Europe, and it is growing at the rate of roughly 15-26% a year. "The growth has been phenomenal, and the bulk of the growth in the European soymilk market seems to have been in the UK." But he doubts very much that it is growing faster than 26% a year. The estimated market shares by company are: Alpro/Vandemoortele 51%, Granose 15-17%, Unisoy 15-17%, and others (Plamil, Soya Health Foods, Haldane, etc.) 15-19%.

In terms of outlets, Granose is sold only in health food outlets. Unisoy's best-selling and most profitable line is its four soyamilk products. White Waves sugar free has long been the best selling single product, but it is rapidly being overtaken by Unisoy Gold (fortified with vitamins and minerals), which has been a phenomenal success. The bulk of Unisoy's soyamilk sales is in national multiples/grocery chains. Of all Unisoy's products, about 65% of sales is in multiples and 35% in health food stores. Plamil has its own clientele; its products are very popular among vegans. Soya Health Foods Ltd. has been able to survive largely because of their soy ice cream, which was one of the first ones on the market in the UK [after Sojal and SoyBoy Soymilk Ices from the Regular Tofu Co.] and the most widely available brand for a long time. Soyamilk is a very small product for Soya Health Foods Ltd. now.

Alpro/Vandemoortele did the pioneering work in getting soymilk into British multiples (supermarkets). In about 1982 Safeway (which has its origins in America), became the first multiple (supermarket chain) to sell soymilk in the UK. They sold the Alpro/Vandemoortele line but they sold only a small quantity. Safeway has always purchased its soymilk from Vandemoortele. Michael Cole of Soya Health Foods Ltd. also deserves a good deal of credit for the growth of soymilk in the UK. He did the early work in getting British-based supermarkets, large chain stores, and normal grocery stores interested in carrying soymilk. By late 1985 Cole was selling large amounts of his aseptically packed Sunrise Soya Milk to multiples, including Tesco. "Cole did the solid job of marketing and bringing soymilk into the perspective it is in now. Then he left Soya Health Foods in mid- to late-1987." He started his own consulting company. Today every multiple in the country, including the large chemist chains (drug stores) are now offering soymilk to the consumer.

Unisoy exports their soymilk to the Netherlands, Italy (to Parma Soia), and Ireland. It is also sold in Portugal. It used to be sold in Belgium. Address: Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430 6329.

1334. United States Court of Appeals for the Federal Circuit. 1990. Ralston Purina Company, Plaintiff-Appellant, v. A.E. Staley Manufacturing Company, Defendant/Cross-Appellant. Court Decicion 90-1019, -1045. 3 p. Decided July 5, 1990. Unpublished manuscript.

• **Summary:** "Decision: Ralston Purina Company (Ralston) appeals from a judgment of the United States District Court for the Central District of Illinois, No. 84-1378 (July 27, 1989), holding the United States Patent No. 3,940,495 ('495) unenforceable for inequitable conduct. A.E. Staley Manufacturing Company (Staley) cross-appeals denial of its motion to amend the judgment to include an award of attorney fees. We affirm."

"Opinion: Evidence that Ralston intended to deceive the

Patent and Trademark Office (PTO) includes: (1) Brukardt and Price knew of the Archer-Daniels-Midland (ADM) Dutch application no later than 1968; (2) Ralston made no disclosure of the ADM Dutch application until 1973; (3) Ralston's disclosure of the ADM Dutch application appeared in an 18 page statement discussing 118 references; and (4) when the PTO examiner said that he had not fully considered the cited references and objected to the statement, citing Manual of Patent Examining Procedure 707.05(b), Ralston refused to limit the statement to the five most pertinent references... Ralston did not and could not contest the finding that the ADM Dutch Patent application was material. The findings are not clearly erroneous and support the inferences drawn.

"Ralston's reliance on *Ralston Purina Co. v. Far-Mar-Co, Inc.*, 772 F.2d 1570, 227 USPQ 177 (Fed. Cir. 1985) is misplaced. Inequitable conduct was neither at issue nor considered in that case.

"In denying Staley's motion for attorney fees, the district court considered all relevant factors (Ralston's inequitable conduct, that 'the issues in the case were very hotly contested and the case was vigorously litigated,' and our holdings on validity and infringement in *Far-Mar-Co*). We cannot say the district court abused its discretion in denying Staley's motion."

Before Markey and Michel, Circuit Judges, and Brewster, District Judge.

"Note: This opinion has not been prepared for publication in a printed volume because it does not add significantly to the body of law and is not of widespread legal interest."

1335. Marshall, Philip. 1990. Brief history of the Regular Tofu Co. (Interview). *SoyaScan Notes*. July 9. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** This company was started by John Holt. [It began production in Dec. 1981.] Holt learned how to make tofu, in about 2 days, from Philip Marshall of Cauldron Foods Ltd. [which started tofu production in Sept. 1981], and Paul Jones of Paul's Tofu & Tempeh [which started tofu production Jan. 1981]. Before that he was involved in a spiritual practice, perhaps with Divine Light Mission. He and a girl, who was into the same spiritual tradition, got together and started the company. It was a very small, kitchen-based operation. It went through various growing pains, and eventually Holt ended up owning the company himself. He got into some financial difficulty and in about 1983-84 he got refinancing when a fairly large percentage of his shares were purchased by an entrepreneur, who formerly had owned a medium-sized tailoring business. He then got involved with Haldane when they bought the company. They either asked him to leave or he left on his own. Philip has no idea where he is now.

Regular Tofu Co. now may be nothing but a name.

There is a plant, a very early/antique Takai plant, where Haldane has their tofu made. They have a 50% holding in an ice cream company and the product is actually made at that factory. The address of Regular Tofu Co. is now the same as Haldane. Address: Owner, Cauldron Foods Ltd., 149 South Liberty Lane, Ashton Vale Trading Estate, Bedminster, Bristol BS3 2TL, England. Phone: (0272) 632835.

1336. Marshall, Philip. 1990. Early work with soyfoods in the UK: Direct Foods, Whole Earth, Harmony Foods Ltd., and Haldane (Interview). *SoyaScan Notes*. July 9. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Brian Welsby founded Haldane Foods in 1983. But he was active with health foods long before 1980. He used to do the product mixing for a company named Direct Foods Ltd. (in Petersfield, Hampshire), which was owned by Peter and Anna Roberts, a very nice, committed pair of vegans. They were among the first people to market dried soya products, particularly TVP, in the UK. And they were certainly the first people to develop the market for composite dry soya products—like burger mixes. Philip has no idea when Direct Foods started, but it may have been in the late 1960s. [Note: It started in Aug. 1969.] They were one of the pioneers of vegetarianism and veganism in England.

Greg and Craig Sams are brothers, both American. Both are very talented guys, excellent at marketing. Greg is in a wheelchair. In the early days, both were the key figures/principals at Whole Earth with the early events at Portobello Road. Whole Earth, which started as a bakery, became Harmony Foods, a large health food wholesaling company. [Note: In 1980 Harmony Foods Ltd. was at 12 Orpheus St., Camberwell, London S.E., England.] Harmony had some of its own Harmony Foods brands and was one of the first companies in the UK to import Japanese miso, shoyu, etc. At some point, Whole Earth was sold off as a health food wholesaler, and its still going with such popular brands as Whole Earth jams, sauce, etc.

Peter Fitch was responsible for putting together the Haldane Foods Group, which incorporates Direct Foods, Haldane Foods, and Realeat. Address: Owner, Cauldron Foods Ltd., 149 South Liberty Lane, Ashton Vale Trading Estate, Bedminster, Bristol BS3 2TL, England. Phone: (0272) 632835.

1337. Svejgard, Torben. 1990. Soy protein concentrates in Europe (Interview). *SoyaScan Notes*. July 20. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Central Soya is building a soy protein concentrate plant in Italy, south of Venice. They also have a joint venture with a Yugoslavian company named Preduzce Sojaprotein Becej, which is building a functional concentrate plant in Yugoslavia. The plant in Italy will provide the raw material for the plant in Yugoslavia. He is quite sure that ADM will soon start to build a concentrate

plant in Rotterdam. He feels that these two U.S. companies are overestimating the potential demand for concentrates in Europe. They probably made their market studies in 1989 when there was an enormous demand for concentrates to be used in calf milk replacers, due to a lack of nonfat dry milk. But now the situation is more normal and the demand for and production of calf milk replacers has fallen off sharply. The American companies think that when it becomes legal in Germany to use soya proteins with meat, there will be an explosion in demand, but Torben thinks that this will grow only very slowly because German consumers do not presently want soy in their meats. Europeans are much less concerned than Americans about cholesterol intake; calorie intake is a bigger issue in Europe.

Loders Croklaan (pronounced krok-LAAN) and Aarhus are the two biggest European manufacturers of soy protein concentrates. They are about the same size [Loders says that Loders is bigger]. Loders started making concentrates in the mid-1970s [1976], at about the same time as Aarhus. Loders is a subsidiary of Unilever, in the same division as the oil and fats specialty division. In the USA the division is called Van den Berg. They make Soycomil K and P (calf milk replacer and piglet milk replacer). They also sell a concentrate for food use (Unico) but they are much bigger in the feed area. They do not make textured concentrates. They also have Unisoy, a regular defatted soy flour sold in small amounts. In addition, they are a soybean crusher.

Note: Aat Visser, sales and marketing manager for Loders notes in a letter of 6 Aug. 1990: "Loders Croklaan is substantially larger than Aarhus and continues to be the largest European manufacturer of soya protein concentrate. Loders Croklaan (at that time Unimills) started to produce concentrates on a pilot plant scale in 1973. In Jan. 1976 the full-size plant was completed. Although the main sales of Soycomil K and P are to the specialty feed industry, the sales of Unico for food use are becoming more and more important. A textured soy protein concentrate is produced on the basis of Unico and marketed under the name Unibit. Unisoy is sold mainly in flour, grit, and flake form. The grit is used as a raw material for extrusion, and the flakes for solvent extraction processes." Address: Marketing Manager, Aarhus Oliefabrik A/S, 27 M.P. Bruunsgade, P.O. Box 50, DH-8100 Aarhus C, Denmark. Phone: 45 86 19 62 52.

1338. Ontario Ministry of Agriculture and Food. 1990. Soybean buyers mission from new markets, July 1-7, 1990. Tokyo, Japan: Ontario Ministry of Agriculture and Food. 61 p. 30 cm. Saddle stitched. [Eng]

• **Summary:** This conference took place in Ontario, Canada. On the mission were two buyers each from Indonesia (P.T. Indofood Interna Corp., BULOG), Philippines (Universal Robina Corp., Paritas Trading Corp.), and Taiwan (Sun Ford Mfg. Corp., Great Wall Enterprise Co.). Michael Loh of OMAF/Tokyo was the mission leader. Contents: Background

and purpose. Mission members. Itinerary. Seminar agenda. Canada's soybean industry, by Fred Brandenburg of OSGMB. An overview of export opportunities in the new markets (Korea, Taiwan, Philippines, Indonesia), by Michael Loh of OMAF, Tokyo. Role of Taiwan Soybean Importers, by Laurence Hsiao of Sun Ford Conglomerate Corp. Soybean market in Indonesia, by A. Saifullah of BULOG, Indonesia. The market prospective for tempeh in the year 2000, by Ms. Susani K. Karta, manager, P.T. Indofood Interna Corp. (Indonesia). Appendix: 1. Ontario soybean suppliers (directory of 15 exporters). 2. Useful contacts. 3. Ontario soybean oil crushers (ADM, Victory Soya Mills, Central Soya of Canada). 4. Role of the Ontario Soybean Growers' Marketing Board. 5. Development of soybean varieties (incl. Harovinton for tofu; Canatto, Nattawa, and Nattosan for natto). 6. Market trends in the development of traditional soyfood, by Susani K. Karta (ASA, Singapore; Originally presented at the ASEAN Food Conference, Oct. 1988, Bangkok, Thailand). 7. Reference materials for doing business in Asia/Pacific.

"Natto soybean variety development at Agriculture Canada in Ottawa has also received considerable support from the OSGMB. Ottawa's Dr. Harvey Voldeng has been extremely successful at breeding Canada's top natto varieties (Canatto, Nattawa, and Nattosan) as well as incorporating higher protein levels into other early maturing varieties."

"Soybean breeders are selecting for high protein and white hilum whenever possible" (p. 40). Address: Tokyo, Japan.

1339. Shurtleff, William; Aoyagi, Akiko. 1990. *Soy milk in Europe: The industry and market, commercial products, publications, and history*. Lafayette, California: Soyfoods Center. 261 p. July 17. Indexes. 28 cm. [763 ref]

• **Summary:** Since the mid-1980s, the soy milk industry and market in Western Europe has been booming, and the future looks very bright. Many large companies with plenty of capital and marketing expertise are entering the market, product quality and diversity is steadily improving, and consumers are showing an increased interest in nutritional protein beverages that are free of cholesterol and lactose, and low in saturated fats.

**Soy milk production and growth rate:** Production of soy milk in western Europe as a whole is estimated to have grown to 30–42.5 million liters/year (7.9–11.2 million gallons/year) in 1990, up from only 6–10 million liters/year (1.59–2.64 million gallons/year) in 1984, a roughly fivefold increase in 6 years. This represents an average compound growth rate of about 30% a year.

**Estimates of total market size (not including infant formulas):** Philippe Vandemoortele, managing director of Alpro, Europe's largest soy milk manufacturer, estimates the adult soy milk market in Europe to be 30 million liters/year. Asger Somer Hansen, managing director of DTD/STS, one

of Europe's two largest suppliers of soy milk plants, estimates 35–40 million liters/year. Anders Lindner, managing director of DTD/STS until late 1989, estimates 42.5 million liters/year, plus an additional 7.5 million liters/year that are made into dairylike products such as soy puddings, yogurts, ice creams, and cheeses.

**Leading countries:** The largest soy milk market in Europe is clearly in the UK, because of its large population of vegetarians and vegans (vegans do not consume milk or any other animal products), its large total population, its large number of soy milk manufacturers and marketers, the fact that soy milk is now sold in many UK multiples/supermarkets, its relatively long history of soy milk production, and the fact that many soy milk products bear the generic name "Soya Milk" on the front panel. The first commercial soy milk in England was Solac, launched in 1912 with great fanfare and publicity by the Solac Company/Synthetic Milk Syndicate. Roughly 40% of all soy milk consumed in Europe is consumed in the UK, and per capita consumption is also highest there. The second largest market is probably France, with West Germany a very close third.

**Leading manufacturers:** Two companies (Alpro in Belgium and DE-VAU-GE in West Germany) dominate the market with an estimated 70% market share, and that percentage is not likely to decrease. Competition is fierce and increasing. Alpro, which began making soy milk in 1979 and now produces about 21 million liters/year, is building a new plant at Wevelgem, Belgium, which is scheduled to begin operation in June 1990. Costing about US\$15 million, it will have a capacity of 45 million liters/year. DE-VAU-GE's plant, which was built by DTD/STS and began operation in August 1985, now produces about 12 million liters/year but has a capacity of 3,000 to 4,000 liters/hour of finished soy milk. Other manufacturers with the year they started making soy milk and their current estimated annual production in liters/year: Unisoy (UK, 1986) 3 million; Cacoja (France, 1987) 3 million; Soyana (Switzerland, 1985) 2.5 million; Société Soy (France, 1975) 1.2 million; Soya Health Foods (UK, 1985) 1 million; Galactina (Switzerland, 1969) 1 million; Triballat (France, 1989) 0.5 million; Innoval (France, 1987) 0.5 million; Crivellaro (Italy, 1989) 0.5 million. Other smaller producers include Plamil (UK, 1965), Haldane (UK, 1984), Itona (UK, 1964), and Ralston Purina España (Spain 1984).

**Price:** The retail price of soy milk is 2–3 times as high as that of cow's milk.

**Packaging:** Virtually all European soy milk and soy milk-based products are now sold in Tetra Brik Aseptic cartons. But with the growing concern about and legislation concerning disposal of solid wastes, one very big potential danger lies on the horizon for soy milk—that aseptic packaging will be increasingly banned, as it already has been in the state of Maine in the USA after Sept. 1990. If the manufacturers of aseptic packaging do not find a truly

recyclable package or establish a workable system to recycle their current packages, soymilk could be in for hard times.

**Soymilk trends in Europe:** Though soymilk production has increased fivefold since 1984, it is still minuscule compared to cow's milk. The flavor of soymilk continues to be a major problem for most Europeans. Features/benefits attracting Europeans to soymilk are its freedom from cholesterol and lactose, and the fact that its production places less of a burden on the environment and on factory-farmed dairy cows. Most of the soymilk in Europe is sold to the natural/health food trades via health food stores and (in German speaking countries) Reform House chains. Only in France and the UK (plus a little in Belgium) is it also marketed as a mainstream product through supermarkets. A small amount is consumed by Asian-Europeans and Seventh-day Adventists. Organically grown soybeans are used in a large and increasing percentage of European soymilk. In the UK, innovative natural sweeteners (such as apple juice) have also started to be used. Private labeling: Many large European natural/health food manufacturers and/or distributors now sell soymilk under their own brand. Alpro produces many private-label brands. This practice is much more common in Europe than in the USA. Medical Soy and Parma Soia in Italy are two recent additions to this growing list. Soymilk is widely exported across national boundaries within Europe. This will probably not change much after 1992. Many large companies have entered the market since 1985 with large automated plants, but many of these are running at a small percentage of their capacity—and thus are losing money. Because of the surpluses of cow's milk in Europe, there are many regulations (including value added taxes and labeling restrictions) against “imitation dairy products.” These differ from country to country and will probably become less severe after 1992. These practices are much more restrictive in Europe than in the USA, although also in the USA soymilk is not allowed to be labeled “soymilk.” European dairy magazines (unlike their counterparts in America) continue to view soymilk with fear and criticism, even ridicule, at the same time that many large European dairy companies are jumping into this new market that shows future promise—which the European cow's milk market seems not to. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

1340. **Product Name:** Sunrise Ice Dream (Non-Dairy Frozen Dessert) [Cassata, Coconut].

**Manufacturer's Name:** Soya Health Foods, Ltd. (Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer's Address:** Unit 4, Guinness Road, Trafford Park, Manchester M17 1AU, England.

**Date of Introduction:** 1990 July.

**Ingredients:** Soya milk (made with purified water), corn syrup, vegetable oil, fructose, vanilla bean extract, emulsifier (vegetable mono-diglyceride), stabilisers (guar gum, locust

bean gum, pectin), mixed fruits (pineapple, raisins, cherries, green melon, gold melon, orange & lemon peel, ginger, grapes), natural colours (beta carotene, beetroot red), chlorophyllins.

**Wt/Vol., Packaging, Price:** 1 liter plastic tub (rectangular).

**How Stored:** Frozen.

**New Product–Documentation:** Letter and Label sent by Genice Foods Ltd. 1994. Feb. 10. Cassata and Coconut were launched in July 1990. Label is 6.75 by 4.5 inches. Paperboard, fits down into plastic lid. Yellow, red, green, and brown. Color photo shows vanilla colored scoops of ice cream in a glass bowl with two wafers stuck into them, and surrounded by sliced and whole fruits. “Made from natural ingredients. Lactose free.”

1341. Visser, Aat. 1990. Re: Brief history of UniMills B.V., Croklaan, and Loders Croklaan B.V., now subsidiaries of Unilever. Letter (fax) to William Shurtleff at Soyfoods Center, Aug. 6 and Aug. 27. 4 p. [Eng]

• **Summary:** In 1910 a company named VOZ (Verenigde Oliefabrieken Zwijndrecht) was founded at Zwijndrecht, the Netherlands. Unimills was part of this company, founded by Van de Bergh & Jurgens, and later joined the Margarine Union, which was one of the roots of Unilever. Unimills was part of Unilever from the start in 1930.

In Nov. 1971 Croklaan was acquired by Unilever. Before Nov. 1971 this company's name was Unimills B.V., based in Wormerveer, Netherlands? In Jan. 1973 the name was changed to Unimills. Unimills International (which does not exist any more) was formed by the factory in Mannheim, Germany, the factory in Erith [on the River Thames just east of London], UK, and the factory in Zwijndrecht, Netherlands. Note: The only Unimills left now is Zwijndrecht. Unimills was part of the Unilever Oil Milling Division, which had factories in the Netherlands, United Kingdom, and West Germany.

In 1973 Unimills started to produce soya protein concentrates on a pilot plant scale. In Jan. 1976 Unimills introduced Soycomil K and P, soy protein concentrates for young animals, and Unico. Production was (and still is) at Lindtsedijk 8, 3336 LE Zwijndrecht, Netherlands.

In Sept. 1986 the spelling of Unimills was changed to UniMills. At that time, Loders Croklaan was created from Croklaan (already owned by Unilever), and from Loders & Nucoline (a division of Croklaan in the United Kingdom). Loders Croklaan was and is located at Cairn Mills Silverton, near London, England. Immediately thereafter, Loders Croklaan took over responsibility for operating the protein division of UniMills. Loders Croklaan is substantially larger than Aarhus Oliefabrik; it has been and continues to be the largest manufacturer of soya protein concentrate in Europe. Although the main sales of Soycomil K and P are to the specialty feed industry, the sales of Unico for food are becoming more and more important.

Also in Sept. 1986, three of the oil mills were sold to ADM. These were European oilseed processing facilities on 30 April 1986. These are Unilever's soybean plant at Europoort (Rotterdam), the Netherlands, the oilseed plant at Spycyk, West Germany, and the oilseed plant and vegetable oil refinery at Hamburg, West Germany. In June 1988 the name of UniMills GmbH Hamburg was changed to UniMills International; its head office was at Bonadiestrasse 3-4, D-6800 Mannheim-Industriehafen, West Germany.

In Sept. 1990 the oil mill at Erith in the United Kingdom will be sold to ADM, and UniMills International? at Mannheim in West Germany will be sold to Ferruzzi of Italy. After these sales, Unimills will have only one production unit left, at Zwijndrecht.

Today UniMills Zwijndrecht produces protein products, lecithins, emulsifiers, and fractionated fats, and has refining and hardening facilities for fats and oils. Unilever's world headquarters are: Unilever N.V., Burgemeester Jacobpl. 1, 3015 CA, Rotterdam, Netherlands. Address: Hogeweg 1, 1521 AZ Wormerveer (P.O. Box 4, 1520 AA Wormerveer), Netherlands. Phone: (0)75-292911 or 292404.

1342. Fehlberg, Eric C. 1990. Re: Seventh-day Adventist health food companies worldwide. Letter to William Shurtleff at Soyfoods Center, Aug. 17. 4 p. Typed, with signature on letterhead.

• **Summary:** "Nutana of Holland do not manufacture the five products that are listed in my letter of May 24. Each of the products does contain soya as an ingredient, and it is my understanding that they are manufactured by Nutana of Denmark.

"Nutana of Norway, established in 1970, and you are right, it was formerly known Dagens Kost, but was renamed Nutana Norge, in 1982. In Norway they are strictly a marketing branch and do not manufacture any foods at all."

Sahm Yook Foods is the official name of the Korean Food Factory.

Alimentos Colpac is the official name of the food factory in Navojoa, Sonora, Mexico; it was established in 1969. The Montemorelos Branch is known as Alimentos Integronaturales y Panificadora la Carlota; it was established in 1981.

Granose Foods Ltd. of England moved from Stanborough Park, Watford, Herts, to Howard Way, Newport Pagnell, Bucks., in Jan. 1989. The official opening date was 9 July 1989.

PHAG (of Switzerland) is written in all upper-case letters; it is not an abbreviation of anything.

Glaxo Ltd. India has nothing to do with the Seventh-day Adventist church.

DE-VAU-GE was primarily responsible for setting up the Adventist food industry in Spain and the Kolett's brand is packed specifically for the Spanish market. DVG has two brand names which are manufactured for the reform or

natural foods market in Europe: Granovita and Bosen. The products under the Bosen label were originally made in their bakery.

Pan American Health Service in Honduras still produces soymilk. Mountain View College in the Philippines is still making meat analogues and perhaps soya milk—but only for their own use. Bandung College (now called Bandung Academy) in Indonesia is still in operation and they may be making soya products. Two years ago they wanted very much to start a food factory, but it did not happen. The Hong Kong Hospital is still operating and they still manufacture small amounts of food, basically for their own use. South China College has a long history. It was established in 1903 as Bethel Girls' School, but underwent several name changes and changes of location due to political turmoil and the Sino-Japanese war of 1937, followed by the violence of the Second World War.

"Eventually it was re-established at Clear Water Bay in Kowloon, in 1958 and a college curriculum introduced in 1962. Its name was changed to South China Union College in 1964. In 1981 they officially adopted its name and has been called Hong Kong Adventist College since then. It still operates today, and possibly manufactures small quantities of food, basically for their own use." Address: Director, International Health Food Assoc., Seventh-day Adventist General Conference, 12501 Old Columbia Pike, Silver Spring, Maryland 20904.

1343. Sand, Avraham. 1990. Pioneering soyfoods and natural foods in Israel (Interview). *SoyaScan Notes*. Sept. 9. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Avraham first went to Israel in 1975 and stayed for about a year. During this time he and Avraham Leider and one other person founded Israel's first natural foods company, named Amud Ha Shachar (Pillar of Dawn) and located in Jerusalem. The first product they made was granola, followed by whole wheat flour, bulgur wheat, brown rice (which they packaged), and date bars. With this company established, a number of Americans and other westerners who had recently immigrated to Israel and were connected with the company approached the Sachnut, the Jewish government agency which helps finance Jewish cooperative settlements. They asked to be given a moshav. A moshav is like a kibbutz (a cooperative agrarian, rural settlement) except that the families have their own homes and land, and the children live at home. In 1976 the Sachnut gave the group a piece of land, infested with scorpions, upon which nine other groups had tried and failed since 1948 to establish a successful community. The Sachnut also financed a small natural foods factory and bakery on the moshav, complete with an oven and a packaging machine. The moshav was named Moshav Me'or Modi'im, located at Doar Na Hamercas, in the Judean Hills between Jerusalem and Tel Aviv, Israel.

Avraham returned to North America for several years. While living in a community of 5-6 people in Nova Scotia, Canada, he was introduced to tofu by people who made tofu for the community, but he did not make tofu there himself.

Between 1975 and 1990 Avraham has spent a total of 8 years in Israel. The rest of the time he was in the USA or Canada or travelling. Avraham returned to the moshav in 1978 and that year he established Israel's earliest known tofu shop as part of Pillar of Dawn. The tofu was made in the same bakery room as the granola, especially in the evenings when the granola wasn't being made. Originally the community scale shop was established solely to make tofu for the 25 or so families living on the Moshav. Tofu production was small, averaging 50 lb/day of tofu one day a week, using a Corona mill grinder powered by a washing machine motor. The tofu was curded using bittern (nigari) from a salt factory on the Dead Sea. The Moshav owned the tofu company collectively and financed it. Avraham was the motivating force that got the operation started with temporary help initially from Yaacov Sack and Moshe Reuben. About 3-6 months after tofu production began, they started to make tempeh. Then Ben Zion Solomon joined Avraham 6-12 months after the company started and they worked together like equal partners for several years as the tofu and tempeh makers. Solomon was also making quite a bit of miso on the moshav (with a little help from Sand). They also introduced soymilk. At some point, they began to sell their tofu and miso at a few health food stores in Jerusalem. As far as Avraham knows, his was the first company to make tofu, tempeh, miso, or soymilk in Israel. They developed a 1-page informational pamphlet, written in Hebrew on one side and English on the other, explaining what tofu was and how it was made, plus some recipes. At that time Israelis, other than recent immigrants from America, didn't know what tofu was.

They reached the point where they decided to buy large scale equipment (from Takai) and set up a real commercial shop on the moshav that could produce 500 to 1,000 lb/day of tofu. The Sachnut indicated that they would be willing to help set up this new business. So in about 1979 or 1980 Avraham traveled to the USA and did a lot of study to learn about tofu equipment, products, and processes in small to medium sized shops. He visited about 20 tofu shops nationwide (most were very open and helpful) and collected information in a notebook. He worked at the Soy Plant in Ann Arbor, Michigan, for approximately a year in about 1980. From time to time he shared information with his father, Ralph Sand, who was doing research on non-dairy cheese and tofu at Anderson Clayton at the time. At the last minute the Sachnut pulled out and decided not to finance the project, so the expansion never took place. They continued to make tofu on a small scale. But the moshav was suffering economically so in about 1981 Avraham and his wife, unable to make a living there, left and returned to the USA.

The little soyfoods plant dissolved but shortly thereafter a commercial operation (probably Golden Jerusalem Tofu) started in Jerusalem and the people on the moshav bought their tofu from Jerusalem.

During the time that Avraham made soyfoods in Israel (1978-81) there was a lot happening with soya. There was a man called the "Soya King" ("Hamelech Soya," probably Eliahu Navot) who was famous in Israel as the country's soybean pioneer. Avraham thinks he lived in Herzlia/Herzliyya, just north of Tel Aviv, but he died in about 1979 or 1980 several months before Avraham was able to meet him. Avraham went to his home town and met his widow, who told him a little about her husband's work with soya.

The most popular food use of soybeans in the late 1970s was in textured soy flour (like TVP). These products were made in Israel by 1 or 2 big companies and sold in supermarkets in very stylish packages indicating that the manufacturers were well established. There were several flavors and large amounts were sold. He does not know the name or address of the manufacturer, but he got the feeling that Eliahu Navot had at least helped inspire these products; he may have helped to develop them.

In America, Avraham set up a soy deli named Sand-Munches in Madison, Wisconsin. They bought tofu from Bountiful Bean in Madison and made and sold tofu sandwiches, nori rolls, tofu salad, tempeh salad, various tofu spreads. They sold to health food stores and had a sandwich cart on the campus.

Avraham was in on the soyfoods wave at the very beginning, but after it became more established and mainstream he felt that his work had been done in that area, so he moved into the field of aroma therapy, inhaling aromatic essential oils from herbs, where he has been working for the last 8-9 years. It is a very powerful form of herbal medicine. He has developed several product lines under the Tiferet brand (a term taken from the Tree of Life in the Cabala) which he markets in health food stores in the USA and overseas. Address: 210 Crest Dr., Eugene, Oregon 97405. Phone: 503-344-7019.

1344. Archer Daniels Midland Co. 1990. Annual report. P.O. Box 1470, Decatur, IL 62525. 33 p.

• **Summary:** Net sales for 1990 were \$7,751 million, down 2.3% from 1989. Earnings for 1990 were \$483.5 million, up 13.9% from 1989. Shareholders' equity (net worth) is \$3,573 million, up 17.8% from 1989. "This fifth straight year of record earnings showed good contributions from the Company's core businesses of oilseed, corn, and wheat processing and was aided by initial contributions from some of the new value-added operations... The company operates 121 processing plants in the U.S. and owns, or has an ownership interest in, 25 foreign plants..."

"The protein specialties division expanded both in terms of output and facilities this year. The production of

edible soy protein isolates more than doubled this year due to greater market penetration in both domestic and export markets. The production of soy protein concentrates also increased as this product demonstrated its adaptability in food and animal feed products.

“A new facility for the production of industrial soy protein isolates was brought on line in February. These products are used in a variety of markets worldwide, including the paper coating industry. ADM is the only company which produces a complete line of value-added soy proteins.

“ADM has introduced its veggie burger, an all-vegetable protein food product based on soy protein concentrate. This innovative, cholesterol-free, reduced calorie product also contains dietary fiber and appeals to the vegetarian market. Early indications of good acceptance in the U.S. and U.S.S.R. suggest that this product has global potential...

“ADM Ross & Rowe expanded its facilities this year with the completion of a new lecithin production plant in Decatur, Illinois. The division is now capable of producing modified, enzyme hydrolyzed, complexed and microbiologically pure lecithins” (p. 4-5).

From page 8 to page 15 are four 2-page color photo spreads, each concerning ADM’s new Vege Burgers. The text of each reads: London: “Due to the trend toward healthier eating, many restaurants in Great Britain, including the Hard Rock Cafe in London, offer Vege Burgers as a popular menu choice.” Moscow: “Cafe Vege Burger opened in Moscow in early spring and sales have far exceeded expectations.” Great Britain: “Vege Burgers are sold in a variety of flavors in many retail grocery and health food stores throughout Great Britain.” Decatur, Illinois: “In the Decatur area, several grocery stores and employee cafeterias are now selling veggie burgers to the growing number of health-conscious consumers looking for nutritious, good-tasting food.”

“Haldane Food Group has benefitted from the ongoing trend toward a healthier and more varied diet. A recent Gallup poll which indicates a 150% increase in vegetarians since 1984 helps to explain the emergence of Vege Burger and other TVP products as market leaders. Over 60 million servings of Vege Burgers were sold by Arkady Group companies last year. Production capacity at the Coventry frozen food factory has been supplemented with off-site storage and additional burger manufacturing machinery. Kwaliti Foods, now renamed Saucemasters Ltd., has enjoyed increased sales in a potential growth market, especially with private label businesses. The company’s manufacturing capacity has been expanded with the addition of bottle and jar fillers, labellers, and more off-site storage. Genice Ltd. has introduced an extended range of non-dairy ice creams based on soya isolate, soya milk, or tofu. Yogurt-based ice creams are now being marketed.” Address: Decatur, Illinois.

1345. **Product Name:** Midland Harvest Harvest Burgers (Frozen) [Original, Taco, Italian-Style, or Sausage-Style].

**Manufacturer’s Name:** Harvest Direct, Inc. Made in Decatur, Illinois, by Archer Daniels Midland Co.

**Manufacturer’s Address:** P.O. Box 4514, Decatur, Illinois 62525. Phone: 800-637-5850.

**Date of Introduction:** 1990 September.

**Ingredients:** Water, soy protein concentrate, partially hydrogenated corn and/or soybean and cottonseed oils, isolated soy protein, methylcellulose, natural flavors, onion powder, salt, maltodextrin, modified corn starch, corn syrup solids,...

**Wt/Vol., Packaging, Price:** Four 3.2 oz patties per 12.8 oz pack. Retail for \$1.99 (12/91, Illinois).

**How Stored:** Frozen.

**Nutrition:** Per 3.2 oz.: Calories 140, protein 16 gm, carbohydrate 7 gm, dietary fiber 4 gm, fat 4.5 gm, cholesterol 0 mg, sodium 350 mg, potassium 450 mg.

**New Product–Documentation:** Talk with Richard Gross, owner of Nature’s Oven, Florida. 1991. Sept. 3. Concerning ADM’s new Harvest Burger (a name used only in the USA, called Vege Burger in the USSR and Veggie Burger, made by British Arkady in the UK and sold elsewhere in Europe), Richard finds its texture too tough and chewy (like the sole of a shoe), the flavor a little bit off, and he dislikes their use of methylcellulose as an ingredient (a binder) in the product; it is wood pulp processed with caustic soda and other chemicals, and there is a residue—it is not really natural as ADM claims.

Note 1. This is the earliest English-language document seen (July 2020) that contains the term “Harvest Burgers” (or “Harvest Burger”).

Stewart Reeve. 1991. *Soybean Digest*. Dec. p. 40a. “Fast food delight.” The first test market for this product began in April 1990 in 7 grocery stores, 2 cafeterias, 2 restaurants, and a hospital in four cities in central Illinois.

Two leaflets distributed at Natural Products Expo East in Baltimore, Maryland. 1993. Oct. “How vegetarian are they...?” A color bar chart shows that Harvest Burger contains no animal-based ingredients, Garden Burger from Wholesome & Hearty contains four (low-fat Mozzarella, cottage cheese, egg white blend, cheddar cheese), and Griller from Morningstar Farms (Worthington Foods) contains two (egg white, calcium caseinate). “How do ‘vegetarian’ patties stack up?” Comparing the 3 types of burgers mentioned above (90 gm serving), Harvest Burger is lowest in fat (4.5 gm), in calories (140 gm), and in cholesterol (0; tied with Griller). Garden Burger has the lowest percentage of calories from fat (26%) and the most cholesterol (11.4 mg). Griller contains the most fat (9.8 gm), the most calories (197), the highest percentage of calories from fat (45%), and the most fiber.

Talk with Lee Lensch of ADM. 1994. March 4. In April 1990 ADM started its first “public tasting” of the Harvest

Burgers (as frozen patties) in Decatur, Illinois. It took until September 1990 to get packaging for the product, and that month ADM made its first shipment, to Super Value supermarkets in Minneapolis, Minnesota, with Indianapolis being the real focus test market. So ADM sold directly to a supermarket chain, not to a food distributor. In Jan. 1991 the four frozen Midland Harvest products first really hit the grocery store shelves in Indianapolis as a test market. For details, see interview with Lensch (4 March 1994).

Package with Label sent by Dr. Walter Wolf of Peoria, Illinois. 2000. Aug. 5. The package is copyrighted "ADM 1990."

1346. Ornish, Dean. 1990. Dr. Dean Ornish's program for reversing heart disease: The only system scientifically proven to reverse heart disease without drugs or surgery. New York, NY: Random House. xxxi + 638 p. Sept. Index and recipe index. 17 cm. [288\* ref]

• **Summary:** This is a landmark, pioneering book—indeed a classic. In addition to carefully documented information on how to reverse heart disease, it offers 100 pages of vegan recipes, including a 21-day menu. It focuses on a low-fat, low-cholesterol diet, regular moderate exercise, stopping smoking, stress management through meditation and yoga, and (ideally) a support group.

Contents: Author's note. Foreword. Introduction—Heart and soul. Part one: Opening your heart. Part two: The opening your heart program. Part three: Opening your heart recipes. Introduction to the recipes by Shirley Elizabeth Brown, M.D., and Martha Rose Shulman. Twenty-one days of menus. The recipes. Epilogue. Appendix: Nutrient analysis of common foods. Selected references.

In the chapter titled "Introduction to the recipes" a long section on "Soybean products" gives basic information about the following: Whole soybeans, soy flour, soy milk ("It is much higher in fat, lower in vitamin B-12, and lower in calcium than nonfat cow's milk."), soy sauce, tamari, miso, soy cheeses, tempeh, textured vegetable protein (TVP), isolated soy protein, and tofu ("Tofu is a miracle food; it is very easy to digest, very high in protein, low in calories and fat, economical, and extremely versatile").

In the chapter titled "Recipes" is a long section on "Tofu Dishes," which begins with a good introduction: "Tofu is one of the most versatile foods." "Tofu is very high in protein and the perfect substitute for cheese and eggs." Eleven recipes follow: Tofu cheese with fresh herbs. Marinated tofu. Scrambled tofu and vegetables. Lydia's Mexican casserole. Tofu stew with miso. Sweet and sour wok-cooked vegetables with tofu. Chinese eggplant and tofu. Steamed fresh vegetables and tofu with soba noodles (and Misoyaki sauce). Stuffed manicotti (with Marinara sauce).

At the start of each chapter are great quotations. The 288 selected references, listed chapter by chapter at the back, are a valuable addition. As early as 1972 Dr. Ornish

was learning meditation and yoga techniques from Swami Satchidananda; these evolved into the stress management program described in chapters 7-9. In 1975 he first became interested in conducting research on heart disease, when he was a medical student at Baylor College of Medicine in Houston, Texas. In 1977 he had the privilege of studying with Dr. Michael DeBakey, assisting in the operating room when he performed bypass surgery. Though his surgical skill was amazing, Ornish began to see the "limitations of technological approaches that literally and figuratively *bypassed* the underlying causes of the problem. It was the difference between temporizing and healing." Most bypass patients "would go home and continue to do the same things that led to the problem in the first place. They would smoke, eat a high-fat, high-cholesterol diet, manage stress poorly, and lead sedentary lives."

For details on this book and its significance, see MacNeil/Lehrer Newshour. 1990. Dec. Address: M.D., Preventive Medicine Research Inst., Sausalito, California 33658. Phone: 415-332-2525.

1347. Shurtleff, William; Aoyagi, Akiko. comps. 1990. Bibliography of lecithin: 683 references from 1793 to 1990, extensively annotated. Lafayette, California: Soyfoods Center. 133 p. Subject/geographical index. Author/company index. Language index. Printed Sept. 12. 28 cm. [683 ref]

• **Summary:** Note: A comprehensive, greatly expanded edition of this book was published in free digital format on Goggle Books in 2016.

This comprehensive bibliography on lecithin focuses on lecithin derived from the soybean. Starting with the early literature, it shows how and why the soybean has become the world's most popular lecithin source. It concludes with the vast body of literature published since World War II. Thus it is one of the most comprehensive, current, and useful sources of information on lecithin available today, since 67% of all references (and most of the current ones) contain a summary/abstract averaging 84 words in length.

One of more than 40 bibliographies on soybeans and soyfoods being published by the Soyfoods Center, it is based on historical principles, listing all known documents and commercial products in chronological order. Containing 26 different document types (both published and unpublished, including many original interviews and partial translations of Japanese and European works), it is a powerful tool for understanding the development of this subject and related products from its earliest beginnings to the present, worldwide.

Compiled one record at a time over a period of 17 years, each reference in this bibliography features (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English publications together with an English translation, month and issue of publication, and the first

author's first name (if given).

It also includes details on 178 commercial soy lecithin products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to use the bibliography, a complete subject and geographical index, an author/company index, a language index, and a bibliometric analysis of the composition of the book (by decade, document type, language, leading periodicals or patents, leading countries, states, and related subjects, plus a histogram by year) are also included. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

1348. American Soybean Assoc.; Archer Daniels Midland Co. 1990. One in a billion: The world of soybeans (Color videotape). P.O. Box 27300, St. Louis, MO 63141; 4666 Faries Parkway, Decatur, IL 62525. 14:13 minutes.

• **Summary:** Contents: 1. History: Photos show William Morse and Henry Ford. 2. Production: It grew from 9 million bushels in 1929, to 91 million in 1939, to 2,000 million today. 61% of today's crop is crushed to yield soy oil and soybean meal, 34% is exported as whole soybeans, and 5% is used for planting, animal food, and other uses. 3. Processing: Shows the ADM crushing plant at Decatur, Illinois, which can convert 170 truckloads/day of soybeans into oil and meal. The crushing process is shown. "Oil is drawn from the crushed beans by using a special solvent." Crushing yields oil and meal.

4. Health and economic benefits: States that "clearly the most important source of energy known to man is protein, the energy that fuels basic human existence. Soybeans are the most efficient and abundant source of protein in the world." This soy protein is used mainly to produce animal products, but it can also be used directly in foods. "Soy flours are also popular in developing countries because pound for pound they contain twice as much protein as cheese, three times the protein of meat and fish, and four times the protein of eggs. Soybeans are also the highest natural source of dietary fiber." John W. Erdman discusses the health benefits of soy protein isolate. "Soybeans are good for the environment and help preserve precious natural resources. No other food produces more edible protein per acre than soybeans. As a comparison, cattle, which graze on land unsuitable for soybean production, can produce 58 lb of edible protein per acre, while soybeans furnish 584 lb of edible protein from a single acre. Emphasis is placed on the health benefits of soy oil and the problems of cholesterol and saturated fats; the rest of the video is basically a promotion for soy oil. 5. The Soy Mark: Used to identify "SoyOil" to an increasingly health

conscious public. 6. Industrial uses: Soy oil has been used in printing inks since 1987, and is also used to control grain dust. It can also make feed more palatable, digestible, and nutritious for the animals they feed, In fact, research shows, as a dietary supplement, each percent of soybean oil added to a hog's diet will result in a 1% improvement in daily gain and a 2% improvement in feed efficiency." 7. Environmental benefits: Especially from replacing the volatile organic petroleum compounds in printing inks with soy oil. 8. The Soy Seal: Used to identify industrial products containing soy oil.

This video is directed at teachers, community groups, and consumers who may not be familiar with the soybean industry. Address: St. Louis, Missouri; Decatur, Illinois. Phone: 314-576-1770.

1349. Boismenu, Clyde. 1990. The market for soy protein isolates, concentrates, textured soy protein products, and soy flour in America today (Interview). *SoyaScan Notes*. Nov. 13. With follow-up on 22 Jan. 1992. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Soy protein isolates have been the big unfulfilled promise in the U.S. food industry during the last 2 decades. Since 1975 Clyde has been a wholesale distributor for ADM. Today only 2 companies in America make regular isolates: ADM and Protein Technologies International. ADM was weakest in isolates until they purchased the Central Soya line. ADM also bought Grain Processing Corporation's Pro-Fam line and closed it down to get rid of excess industry capacity. Then ADM hired Roger Kilburn away from Ralston Purina to improve the flavor of ADM's isolates. This upset Ralston greatly. Ralston Purina spun off Protein Technologies International primarily to make it available for sale; everyone in the industry knows this.

In recent years there has been a little resurgence in isolates for several reasons largely related to the rise in casein prices: (1) With the rise of free enterprise and economic flux in Eastern European countries, they are being used increasingly to extend meats; the problem for western suppliers is getting paid. (2) The Chernobyl nuclear disaster, which took place on 26 April 1986 in the Ukrainian SSR, wiped out the Polish dairy industry. Casein prices rose and isolates filled part of the void. (3) Worldwide, the price of nonfat dry milk (NFD) and casein has been very high since about 1986 due to short supplies. Casein has traditionally been more expensive than isolated soy protein, in part because it is more functional (it melts and binds water well) and most people like the taste better. Within a period of several years, the price of casein rose from \$0.90/lb to \$2.50/lb. Egg protein costs \$4 to \$5 per pound. All of these things helped the U.S. isolate industry. In the U.S. the main problem is the obnoxious meat labelling requirements. For example, if isolates are injected into ham, it must be sold as "Smoked pork ham with soy protein isolate product." The

labeling problems are caused in part by the fact that USDA is staffed largely by veterinarians.

The main applications for soy protein isolates in America are in infant formulas (roughly 50% of the total), muscle powders (35%), diet beverages that are supposed to suppress appetite, and other (health food candy bars, etc., 15%). The use of isolates in meat products is very small.

Most isolates are not very bland and not very functional. PTI's are more bland than ADM's. The bulk of Clyde's isolate sales are for muscle powders, which are used to make shakes. The only isolate thick enough to work in a shake is the one with the most sodium proteinates, which has the poorest flavor.

Even textured soy flour (TSF/TVP) has not been very successful in food uses; Clyde sells several million pounds a year of it, but the industry is very sleepy. It is used mostly in spicy Mexican foods (mainly burritos, to add chunky texture), and pizza toppings (since labeling is not a problem). It is used in school lunch programs and by the military in meatloaf and braised beef. Seventh-day Adventist food companies buy quite a bit and repackage it. By far the biggest use of TSF is in pet foods. In California, what is commonly called the "Brigg's Amendment" (Food, Drug and Cosmetic Law, California code, Article 7, Section 26595-26599, "Hamburger and imitation hamburger," became effective in July 1974), effectively prevents the use of TSP in hamburger, even in restaurants. Ground beef or hamburger containing any extenders (such as TSP), binders, or added water must be called "imitation hamburger." If imitation hamburger is sold or served in a restaurant, a list of its ingredients must appear on the menu. Mr. Briggs, a state legislator from Orange County, had a friend with some hamburger stands. This law is enforced, in practice, only with respect to hamburger patties, and especially when the price of hamburger rises; 80-85% of all ground beef is sold in the form of patties. It is not enforced when the ground beef is "cooked in a recipe" as in spaghetti sauce, taco filling, meat loaf, and sloppy joe mix. In these cases regulators do not enforce the law that requires the product to be called "imitation hamburger" if bread crumbs, rolled oats, or a soy protein product are added.

Concerning ADM's Veggie Burger, there are 4 kinds that come in dry form: Herbs & Spices Style, Curry, Meat-Style, and Gyros-Style. They were introduced about 4 years ago. ADM also makes pre-cooked, frozen patties.

Soy flour has two main applications: (1) As a replacer for non-fat dry milk (NFDM), usually sold mixed with whey and used in baked goods. Kraft makes one popular brand. (2) In calf milk replacers (CMR). Calva in Modesto makes lots of CMR using soy flour; not much soy protein concentrate is used in CMR. The key consideration is the "per pound protein basis." Meat protein costs \$6/lb and soy flour protein costs \$0.35/lb. Labeling regulations are the main barrier to more widespread use. Not much NFDM is used in breads

today in America. Soy flour is more expensive than wheat flour, but it holds more water, and slows staling—two major sales points. Address: Basic Foods Co., 1211 E. Olympic Blvd. #204, Los Angeles, California 90021. Phone: 213-623-6686.

1350. Shurtleff, William; Aoyagi, Akiko. comps. 1990. *Bibliography of soybean crushing, soy oil, and soybean meal: 4,183 references A.D. 980 to 1990, extensively annotated.* Lafayette, California: Soyfoods Center. 647 p. Subject/geographical index. Author/company index. Language index. Printed Nov. 9. 28 cm. [4183 ref]  
**• Summary:** This is the most comprehensive bibliography ever published on soybean crushing, soy oil, and soybean meal. Its scope also includes: Statistics on the soybean oil and meal industries, use of soybean meal in feeds, use of soybean cake or meal as a fertilizer, and the efficiency of animals in converting feeds into human foods. It is one of the most useful sources of information on this subject available today, since 53% of all references (and most of the early and current ones) contain a summary/abstract averaging 121 words in length.

One of more than 40 bibliographies on soybeans and soyfoods being published by the Soyfoods Center, it is based on historical principles, listing all known documents and commercial products in chronological order. Containing 36 different document types (both published and unpublished, including many original interviews and partial translations of Japanese and European works), it is a powerful tool for understanding the development of this subject and related products from its earliest beginnings to the present, worldwide.

Compiled one record at a time over a period of 17 years, each reference in this bibliography features (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English publications together with an English translation, month and issue of publication, and the first author's first name (if given).

It also includes details on 54 commercial soy products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to use the bibliography, a complete subject and geographical index, an author/company index, a language index, and a bibliometric analysis of the composition of the book (by decade, document type, language, leading periodicals or patents, leading countries, states, and related subjects, plus a histogram by year) are also included. Address: Soyfoods Center, P.O. Box 234,

Lafayette, California 94549. Phone: 510-283-2991.

1351. Roberts, Peter. 1990. History of Direct Foods Ltd. and Compassion in World Farming. Part I (Interview). *SoyaScan Notes*. Dec. 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Peter was born in 1924 in the UK. His father was a doctor. By the 1950s, while he and his wife Anna were running a dairy and chicken farm, Little Barnett Farm, in the village of Froxfield, Hampshire, England, they became increasingly concerned with the cruelties inherent in both intensive factory farming, and traditional dairy farming—the separation of the calf from the cow, the marketing of the unwanted bull calves and the worn-out dairy cows, etc. So in about 1958 he and his wife stopped eating meat. They switched to a lacto-vegetarian diet, which they still practice. Their 3 children are now also vegetarians.

As they changed their farming practices to treat their animals more kindly, they found that farming became more and more uneconomical. Peter wrote an article for a local paper, the *Squeaker*, concerning the many problems with factory farming. He received many favorable replies, stating that the animal welfare organizations in the UK seemed to be concerned mostly with dogs and cats, but that much work needed to be done to protect factory farm animals. So in about 1961 they sold their farm. Peter worked briefly as a lime quarrier, then in 1967 he and Anna founded a pioneering organization named Compassion in World Farming (CIWF) to address the increasing problems with factory farming that he had experienced first-hand, and to get some decent standards for farm animals. Their main goals were to get rid of: (1) battery cages for chickens, (2) dry sow stalls (known in America as “gestation stalls”) for pigs, and (3) veal crates for veal calves. Their strategy was to educate consumers as to how the food they were eating had been produced. They encouraged consumers either to switch from animal products grown on factory farms to those raised by free range farming methods, or to become vegetarians. Many members got upset as they learned about factory farming, decided to stop eating meat, and began to ask CIWF about alternatives. So the Roberts began to search for a good-tasting, nutritious, and reasonably priced protein alternative to meat sold in a convenient form. They got 3 samples of modern soy protein products (all dried) from the USA and found TVP made by ADM to be the best. When they wrote to ADM enquiring about marketing rights in the UK, the reply asked “How many million dollars can you put into it? We foresee a big future in Britain.” That response killed the project temporarily. In 1965 The British Arkady Co. Ltd. (Arkady Soya Mills) had started to sell ADM’s TVP in the United Kingdom, but Peter hadn’t heard of Arkady at the time. About 4-6 months later a sales rep from British Arkady approached Peter, said he had been referred by ADM, and asked what Peter had in mind. Peter said he would like to

retail TVP, especially in the health food area, especially in Britain but not restricted to Britain. Arkady offered to supply Peter but would not offer any exclusive arrangement. Arkady agreed not to compete with Peter, saying they were interested only in selling to food manufacturers, not to the retail market. Peter accepted and in 1969 placed a trial order of about 10 lb of beef chunks or mince. The Roberts called their product Protoveg (pronounced PRO-toe-vej), registered the trademark (though the registration was unsuccessfully challenged by Mapleton’s Foods, a large British health food company), and sold it in 9 different flavors and textures: beef chunks, beef mince, ham chunks, ham mince, pork chunks, pork mince, natural (unflavored) chunks, natural mince, and Smokey Snaps (which resembled bacon bits). They packed it in 4.5 oz. double cellophane bags with a label between the two bags, developed a recipe leaflet and order form, and distributed it via their Compassion in World Farming and via Beauty Without Cruelty (Lady Dowding’s anti-fur-trapping group). The 4.5 ounces yielded 1 pound of hydrated product; the mince hydrated in 2 minutes and the chunks in 15-20 minutes.

The product was instantly successful, which surprised the Roberts. The trustees of CIWF decided it would not be possible (for legal and financial reasons) to establish a commercial branch of the organization, so the Roberts used the money they had left after selling their farm then buying a house, and in Aug. 1969 established Direct Foods Ltd., a private company owned by Peter and Anna and run as a mail order business out of their new home in Greatham (5 miles from Petersfield), Hampshire. The health food shops in the UK were selling alternatives to meat, such as canned meatlike products made by Worthington Foods and Granose, but textured soya proteins were not available. TVP was tasty and nutritious, it looked and tasted like meat, and it was much less expensive than the canned products or meat. Direct Foods started advertising in some magazines, such as *The Vegetarian* and various health food publications. Next they began to sell to health food shops. Continued. Address: Compassion in World Farming, 20 Lavant St., Petersfield, Haunts (Hampshire) GU32 3EW, England. Phone: 0730 64208.

1352. Roberts, Peter. 1990. Early activities with whole foods in England (Interview). *SoyaScan Notes*. Dec. 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Whole Earth ran a big warehouse where people could buy whole foods on a cash-and-carry basis. He thinks it may have been located on Portobello Road, and Gregory Sams may have been in charge. Greg started with macrobiotic foods. He is a very nice man, who is restricted to a wheelchair. A similar company was named Community Supplies. Starting in about 1980 he would buy whole food supplies at these two companies in London for his health food shop named his Bran Tub. As he recalls,

at the beginning neither of these companies carried any soy products since they were rather opposed to the idea of imitating meat. One segment of the vegetarian movement felt strongly that it was wrong to imitate meat, and they therefore opposed the products sold by Direct Foods Ltd. But another segment supported any method or product which (without slaughter or cruelty) would help other people to give up eating meat. Peter believes firmly that human beings were vegetarians as a species until the ice age came along. Address: Compassion in World Farming, 20 Lavant St., Petersfield, Haunts (Hampshire) GU32 3EW, England. Phone: 0730 64208.

1353. Roberts, Peter. 1990. History of Direct Foods Ltd. and Compassion in World Farming. Part II (Interview). *SoyaScan Notes*. Dec. 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In about 1970 Direct Foods launched 20 more convenience (add water, cook, and serve) vegetarian protein products, all were TVP-based alternatives to meat sold under the Ranch House brand. These included Curry, Stew, Goulash, Bolognese, Vegetable Mince, Soysage, Seasavour, Sizzleberg, Sosmix, Savoury Macaroni Mix. etc. All were vegan products except the bolognese, which contained milk powder, but even the milk was soon eliminated, so that all products were vegan. etc. Anna wrote three cookbooks, with even more recipes: (1) *The Earth Shall Feed Us* (1976; now out of print); (2) *The Protoveg Cookbook* (1984, which sold about 8,000 copies via mail order and health food shops; now out of print); and (3) *The Magic Bean* (April 1985, published and distributed more widely by Thorsons). These were sold in both health food stores and regular bookstores.

At this time British Arkady was making a product named Banger Mix (a “banger” is a sausage), made with soya protein and pig fat. Peter asked them to replace the pig fat with a hardened vegetable oil. The Roberts named the resulting product Sosmix. Introduced in about 1970, it was a dry sausage mix and soon became their best-seller. Because Sosmix became such a success, British Arkady invited Direct Foods to market Arkady’s new vegetarian Burger Mix. Direct Foods accepted and again the product did well. Shortly after that, in about 1972, Brewhurst Health Food Supplies Ltd., the biggest health food distributor in the UK, asked if they could distribute the Direct Foods line of products. Direct Foods appointed Brewhurst as their first distributor, but did not give them an exclusive distributorship. This was a major breakthrough; sales tripled almost immediately. Soon Direct Foods appointed other distributors, and exporters, that exported to Jamaica, Malta, and Greece. So Direct Foods remained a product developer, marketer, and mail-order house.

In 1973 British Arkady started making TVP in England, then in 1974 they were acquired by ADM, largely because ADM had seen the rapid growth of the European TVP

market, especially among food manufacturers. Most of Arkady’s TVP was being sold to food manufacturers (for use in canned stews, etc.) and institutional foodservice, not to retailers.

The Roberts continue to run their growing business out of their home. The kitchen was the weighing room, the lounge was the dispatch room, and the rest of the house became the warehouse. There was no room left for the Roberts. Moreover, with a steady stream of delivery trucks coming down their narrow country dead-end road, they began to have problems with the town planning authorities. So in about 1974 they rented a warehouse for Direct Foods in Petersfield, about 5 miles away from Greatham—and breathed a sigh of relief at home. At this time their best-selling products were Sosmix, Protoveg Beef Chunks, and Beef Mince. Sales began to grow rapidly. For a short while, Brian Welsby’s Haldane Foods did the mixing of the Ranch House line of products under contract.

In about 1976 and 1977 Direct Foods participated in its first exhibition, the huge Ideal Home Exhibition, which runs for a month every spring at Olympia in London. They served samples of Sosmix, which was an entirely new product for the British public, and it was a great success. Long lines of people were attracted by the smell, then won over by the ease of preparation, low price (less than half the price of eat sausage), and health benefits of this meatless sausage.

Direct Foods’ first competitor was Itona (pronounced ai-TOE-nuh), which by 1978 had started buying TVP from Arkady and selling it as Itona TVP. Itona had purchased other soy products (probably soy flour) from Arkady before this. At one stage, they tried to make an agreement with Arkady which would have forced Direct Foods to buy from Itona, but this did not work.

Another strong competitor was Real Foods in Edinburgh, Scotland. They sold flavored TVP in 50 kg paper sacks to health food shops so that the shops could weigh out any amount the customer desired. This approach lowers the price of TVP to the consumer but in the end hurts the market due to lack of recipe information. After a while Real Foods disappeared.

In about 1979 the Roberts started their own health food store, named The Bran Tub, in Petersfield. In England a “bran tub” is sort of like a “lucky dip” where kids dive for presents.

Over the years Direct Foods had many problems with local regulators concerning labeling—but won in every case. One thought Protoveg was misbranded because the label said it was a vegetarian product but it contained salt—which was a mineral not a vegetable! Another tried to outlaw the term Sosmix because it sounded too much like sausage. The most important was when the public health authority took Direct Foods to court claiming that the term “Vegetable Goulash” was a contradiction in terms since “goulash” typically contained meat. Peter argued the 4-hour case himself and his

victory set a major precedent. Representatives from many large food companies were present in the courtroom, and they congratulated Peter afterwards.

In March 1985 the Roberts sold Direct Foods (which was making good money) to British Arkady. Arkady had tried to sell their Arkady TVP to the retail trade through the Cash and Carry chain but had failed—at considerable expense to Arkady. Now Arkady wanted to buy either a majority share in Direct Foods or buy the entire company. Peter knew that if he said “no,” Arkady was in a position to undercut Direct Foods and take away much of their market share. A major loss of market share would be a disaster, since Direct Foods’ sales would then drop below the steadily rising threshold needed to cover their overhead and make a profit. Moreover, the Roberts wanted to spend more time concentrating on their animal welfare work through Compassion in World Farming. During the period from 1969 to 1985 Peter had devoted about 2/3 of his work time to CIWF and 1/3 to Direct Foods. Direct Foods was run mainly by Anna Roberts (who put in about the same amount of time as Peter), her sister, and her sister’s husband, Bob Howe, who was production manager at the mixing and packaging warehouse. At the time of the sale Direct Foods had 18 employees and was buying 30 tons a week of TVP from British Arkady.

**Note:** In 2002 Peter Roberts was honored with an MBE (Most Excellent Member of the British Empire) for his founding of and work with Compassion in World Farming. Address: Compassion in World Farming, 20 Lavant St., Petersfield, Haunts (Hampshire) GU32 3EW, England. Phone: 0730 64208.

1354. *SoyaScan Notes*. 1990. Europe’s 20 largest tofu and soymilk companies (Overview). Dec. 23. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** The following summary is a combination of information from two sources: First, numerous interviews conducted by William Shurtleff of Soyfoods Center during 1990. And second, informed estimates by one of Europe’s most knowledgeable soyfoods industry insiders. We give the ranking, company name, country, products (Tofu, Milk = Soymilk, Other), and number of metric tons of soybeans used per month.

1. Alpro. Belgium. Milk. Unknown.
2. Sojinal. France, Milk & Other. 417.
3. Heuschen-Schrouff. Netherlands. Tofu. 200.
4. DE-VAU-GE. Germany. Milk & Tofu. 100.
5. Aros Sojaprodukter. Sweden. Tofu, Milk & Other. 92.2.
6. Unisoy. England. Milk. 47.0.
7. Soya Health Foods. England, Milk. 45.0.
8. Soyana. Switzerland. Tofu & Milk. 32.0.
9. Société Soy. France. Tofu & Milk. 30.0.
10. Cauldron Foods. England. Tofu. 20.0.

11. Haldane Foods/Regular Tofu Co. England. Tofu & Milk. 10.9.
12. Galactina. Switzerland. Tofu, Milk & Other. 10.0.
13. Soyastern / Dorstener Tofu. Germany. Tofu. 9.3.
14. Dragon & Phoenix. England. Tofu. 8.0.
15. Jonathan P.V.B.A. / Lima Foods. Belgium. Tofu. 6.0.
16. Triballat. France. Milk & Other. 5.6.
17. Innoval. France. Milk. 5.6.
- Crivellaro. Italy. Milk. 5.6.
- Plamil. England. Milk. 5.6.
- Paul’s Tofu. England. Tofu. 4.7.

1355. **Product Name:** Berrydales Special Ices [Berry, Maple & Walnut, Ginger and Honey, Bitter Chocolate, Honey Vanilla].

**Manufacturer’s Name:** Berrydales Ltd. (Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer’s Address:** 5 Lawn Road, London NW3 2XS, England. Phone: 071-722-2866.

**Date of Introduction:** 1990 December.

**Ingredients:** Berry: Soya milk, tofu, honey, apple concentrate, raspberries, blackcurrants.

**Wt/Vol., Packaging, Price:** 100 ml, 500 ml, and 2 liter biodegradable paperboard tubs.

**How Stored:** Frozen.

**Nutrition:** Berry: Per 100 ml.: Energy 75 kcal (calories; 313 Kilojoules), protein 1.02 gm, total fat 0.79 gm (saturated fat 0.12 gm, polyunsaturated 0.45 gm), carbohydrate 17.12 gm, salt 0.8 gm.

**New Product–Documentation:** Health Food Business (England). 1990. June. p. 21. “Health Food Business retailer guide to ice creams.” Berrydales Special Ices, available in 5 flavors, are a delectable refreshing cross between an ice cream and a sorbet, and all based on tofu.

Soya International. 1990. July/Sept. p. 5. Lists 5 flavors. Says that the products are made from organic tofu





and soymilk. Note that the company leaflets below do not mention organic ingredients.

Three leaflets sent by Heather Paine from London. 1991.

April 23. The first, titled “Berrydales” notes that “Berrydales Special Ices, based on the ancient Chinese and Japanese food tofu, are a delectably refreshing cross between an ice cream and a sorbet. They are unique, delicious, and good for you. Berrydales ices use only the highest quality natural ingredients. They contain no animal products, no emulsifiers or stabilisers, are lactose free, low in fats and cholesterol and relatively low in calories.” They are “currently available in four flavours: Berry, Maple & Walnut, Ginger & Honey, and Bitter Chocolate. In April we introduced our new Honey Vanilla.” They are sold in bio-degradable paperboard packs in 100 ml, 500 ml, and 2 liter sizes. They are available nationwide in delicatessens and health food stores (including the Holland and Barrett chain), in selected Europa stores in London, and in selected branches of Tescos nationwide. For further information contact Michelle Berriedale-Johnson, Berrydales’ founder and well-known food writer.

The second, titled “Nutritional breakdown of Berrydales Special Ices,” gives a nutritional analysis and list of ingredients for 5 flavors. Ingredients for the new Honey Vanilla are: Soya milk, tofu, honey, raw can sugar, lemon juice, natural vanilla essence. All 5 flavors use soya milk and tofu as the first two ingredients.

The third, titled “Berrydales no-cream ices: Ices in



your postbag,” notes that the company has a new mail order service. It will ship 5 packs (100 ml each) or 2 packs (500 ml each) of any of its five flavors in polystyrene boxes.

Health Food Business (London). 1992. May. p. 34.

“Frozen desserts. Berrydales. Berrydales ices—made from the highest quality natural ingredients, are a cross between an ice cream and a sorbet. They come in five flavours: Honey Vanilla, Chocolate, Maple & Walnut, Ginger & Honey and Berry. Low in calories, ultra low in fat, low in cholesterol, they are based on organic fresh tofu and are dairy-free and vegetarian. The Chocolate ice is also totally vegan and all the ices are kosher. Sizes include 100ml, 500ml, and 2 litre. From May a new four-pack is available with individual tubs of Hone Vanilla, Maple & Walnut, Chocolate and Finger & Honey (rrp [or RRP = recommended retail price] £2.99).”

Spot in SoyaFoods. 1991. Spring. p. 4. “Berrydales no-cream ices by mail order.” “Berrydales Special Ices are made from soyamilk and tofu. Described as a cross between an ice cream and a sorbet, they contain no animal products no emulsifiers or stabilisers and are lactose free, low in fats and cholesterol and relatively low in calories. Five flavors are currently available.”

Original Labels with the original ingredients (Berry, Ginger and Honey, Honey Vanilla) sent by Genice Foods Ltd. 1994. Feb. 18. 3.75 inch round lid. 500 ml. Illustration of a flower against a light wood-grain background. “Lactose free. No animal products. Low cholesterol.”

1356. Dacosta, Yves. 1990. Lait de soja et tofu [Soy milk and tofu]. APRIA/CDIUPA, 1 avenue des Olympiades, 91300 Massy, France. 102 p. Dec. No index. 30 cm. Series: Actualités Scientifiques et Techniques en Industries Agro-Alimentaires. No. 45. [85 ref. Fre]

• **Summary:** Contents: Preliminary remarks. 1. Production of soy milk and tofu: Principles of production, the soybeans, cleaning/washing, soaking, grinding, cooking the slurry (*bouillie*), extraction of the soy milk, coagulation, separation of curds and whey, pressing the curds, removal of the tofu from the mold, cutting and packing the tofu, the need for water in a tofu ship, variations in production, storage and preservation of soy milk and tofu after their production, yuba, production of tofu from seeds other than soybeans.

2. Applications/uses of soy milk and tofu: Products: Soy milk and soy milk products (soy milk, sweetened soy beverages, dairylike soy milks, soy-based infant formulas, powdered soy milk, concentrated soy milks, soy milk mixed with other animal or vegetable milks, soy ice creams and frozen desserts, fermented soy milk products such as soy yogurt, various soy milk desserts [such as custards], sauces, dressings, and mayonnaises made from soy milk), tofu and tofu products (smoked tofu, fried tofu [*tofu frit*], marinated tofu, fermented tofu, breaded tofu, tofu mayonnaise and sauces, tofu spreads for bread, tofu sausages, pâtés, or biscuits/pancakes [*galettes*], tofu quenelles, quiches, fritters,

raviolis, pizzas, mixed salads, prepared dishes (*plats cuisinés*), or sandwiches, tofu cakes, cheesecakes, or tarts, tofu desserts, ice creams, or chocolate bars), preparations based on okara (sausages, pâtés, croquettes, burgers, special breads or biscuits), the nutritional arguments for soy milk and tofu (rich in proteins, lipids, absence of cholesterol and lactose, low in sodium, an excellent ingredient in “light foods” [aliments allégés]).

3. A quick look at the major enterprises making and or selling soy milk, tofu, or their products in selected countries: France (Cacoja, Innoval, Soy [Société Soy], Sojadoc, Triballat, Celia, Celnat, Lima-Andiran, Maho Distribution, France-Proteines-Services), Great Britain (Plamil Foods Ltd., Itona Products Ltd., Soya Health Foods Ltd., British Arkady Co. Ltd. [subsidiary of ADM; incl. Haldane Foods Ltd., Regular Tofu Co., Tofeata Tofu], Granose Foods Ltd., Cauldron Foods, Dragon and Phoenix, Paul Jones (Tofu Shop), Full of Beans Soyfoods, Birchwood Health Products, White Waves, The Bean Machine Co-op Ltd., St. Ivel, St. Giles Foods Ltd., Yu’s Tofu Shop, Tousoy Ltd., Allied Foods Ice Cream Co., Nexus Foods, Vegetarian Feasts, Unisoy Milk and By-Products Ltd.), Germany (DE-VAU-GE Gesundkostwerk GmbH, Soyastern Naturkost GmbH, Nuxo-Werke Rothfritz), Netherlands (Heuschen-Schrouff, Linn Oriental Products, Solnuts B.V., Manna Natuurvoeding), Belgium (Alpro, Jonathan P.V.B.A., Lima Foods, De Hobbit, Seven Arrows), Switzerland (Conserves Estavayer S.A., Soyana, Galactina), Sweden (Trensums Musteri, Aros Sojaprodukter), Italy (Crivellaro), Spain (Zuaitzo), USA, Japan, Hong Kong, Taiwan, Singapore. Bibliography.

Note: A great deal of the information in this report is taken, without permission or adequate citation, from books published by the Soyfoods Center in California. The statistics and dates given for the European, American, and Asian markets are taken almost completely from Soyfoods Center books. In some cases where the author relied on these books published more than 2 years ago, the information is presented as if it were current, whereas it is actually out of date and no longer correct. Dacosta’s book, which might be called a “review of the literature,” contains little or no new information. However his bibliography, based largely on a search of the CDIUPA database, with some original references, is quite good.

APRIA stands for Association pour la Promotion Industrie Agricole. APRIA administers CDIUPA. Address: Conseiller d’Entreprises, France: 47, rue Guersant–7015 Paris, France.

1357. **Product Name:** So Good Tofu Delights: Chunky Bars of Vanilla Flavoured Iced Soya Dessert in a Thick Carob Coating.

**Manufacturer’s Name:** Haldane Foods Group Ltd. (Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer’s Address:** 25 Hayhill, Sileby Road, Barrow

upon Soar, Leicestershire LE12 8LD, England. Phone: 050981-6611.

**Date of Introduction:** 1990 December.

**Ingredients:** Tofu (organic soya beans, calcium sulphate), raw cane sugar, vegetable oil, carob flour, vanilla bean extract, emulsifier (vegetable mono diglycerides, lecithin), stabilisers (guar gum, locust bean gum, xanthan gum), colouring (beta carotene).

**Wt/Vol., Packaging, Price:** 6 x 75 ml foil-wrapped bars in a paperboard box. Retail for £1.69 (4/91, London).

**How Stored:** Frozen.

**New Product–Documentation:** Haldane Foods Group. 1990. "Twenty-one Today. Twenty-new and exciting products launched at Helfex alone." At least 12 of these are soyfood products. "A dairy free choc ice made with tofu and enrobed with carob."

Soya International. 1990. July/Sept. p. 5. "A vanilla flavored carob coated iced soya dessert launched as the tofu 'choc-ice.' They contain no animal products and are suitable for vegans."

Article in Health Food Business (England). 1990. June. p. 30. "Product news: Tofu 'choc-ice.'" A color photo shows 2 boxes of Tofu Delights. Each box contains 6 individually wrapped 75 ml bars.

Label sent by Heather Paine of SoyaFoods in London. 1991. April 23. 7 by 3.5 by 2 inch box. Dark brown, blue, pink, and green on beige. Color photo of one bar, cut crosswise into halves, on top of box. "Soya carob dessert. 100% natural ingredients. Dairy free. No animal produce. Store below 18°C/0°F." Purchased at Lifecycle. UPC indicia. Two kosher symbols.

Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 10. At the time this product was launched, Haldane was promoting So Good as their brand. They are no longer doing this as much.

1358. **Product Name:** Midland Harvest Taco Filling 'n Dip (Dry Taco Mix Based on Textured Soy Protein Concentrate).

**Manufacturer's Name:** Harvest Direct, Inc. Made in Decatur, Illinois, by Archer Daniels Midland Co.

**Manufacturer's Address:** P.O. Box 4514, Decatur, Illinois 62525. Phone: 800-637-5850.

**Date of Introduction:** 1990 December.

**Ingredients:** Soy protein concentrate [textured], corn starch, dried onion, partially hydrogenated corn and/or soybean and cottonseed oils, maltodextrin, tomato paste, spices, salt, hydrolyzed vegetable protein, garlic powder, natural flavor, malt extract, zinc oxide, niacinamide, ferrous sulfate, copper gluconate, vitamin A palmitate, calcium pantothenate, thiamine mononitrate (vitamin B-1), pyridoxine hydrochloride (vitamin B-6), riboflavin (vitamin B-2), cyanocobalamin (vitamin B-12).

**Wt/Vol., Packaging, Price:** 4 oz foil pouch.

**How Stored:** Shelf stable.

**Nutrition:** Original: Per 21.25 gm dry (5 servings per packet): Calories 100, protein 8 gm, carbohydrates 8 gm, total dietary fiber 1 gm, fat (total) 1.7 gm (saturates 0.5 gm, monounsaturates 1.0 gm, polyunsaturates 0.2 gm), cholesterol 0 mg, sodium 280 mg, potassium 390 mg.

**New Product–Documentation:** Stewart Reeve. 1991. *Soybean Digest*. Dec. p. 40a. "Fast food delight." Talk with Lee Lensch, 1991, Dec. 16. This product is sold only through ADM's direct mail company named Harvest Direct. The company sells only ADM's dry mixes. The company began operation in Dec. 1990, and this product was introduced at that time. The 4 oz of dry mix makes 16 oz (1 lb) of finished product—just add water and mix.

Ad in Vegetarian Times. 1992. Jan. p. 16. "Harvest's got it!" "Midland Harvest now comes in seven flavors: Original, Taco, Herbs and Spice, Curry, Italian, Sloppy Joe Fixin's, and Chili Fixin's. Call Harvest Direct at 1-800-835-2867 for a free 16-page catalog."

Label sent by ADM. 1991. Dec. 17. 5.25 by 3.75 inches. Self adhesive. Red on white. "Cholesterol free. Low fat. All-vegetable protein. Microwaveable. A delicious Taco entree, based on a savory blend of textured soy protein concentrate and traditional taco flavors. The only ingredients you add are water and your imagination for variations. The result is tasty loose "ground meat" type Taco filling. The Taco filling can be used for tacos, enchiladas, tostados, dips, sauces, chili, sloppy Joes, and many other dishes."

1359. **Product Name:** Midland Harvest Burger 'n Loaf (Dry Mix Based on Textured Soy Protein Concentrate) [Original, Herb and Spices Style, Italian Style].

**Manufacturer's Name:** Harvest Direct, Inc. Made in Decatur, Illinois, by Archer Daniels Midland Co.

**Manufacturer's Address:** P.O. Box 4514, Decatur, Illinois 62525. Phone: 800-637-5850.

**Date of Introduction:** 1990 December.

**Ingredients:** Original: Soy protein concentrate [textured], partially hydrogenated corn and/or soybean and cottonseed oils, isolated soy protein, natural flavors, methylcellulose, malt extract, dried onion, salt, dried garlic, black pepper, beet powder, spices, zinc oxide, niacinamide, ferrous sulfate, copper gluconate, vitamin A palmitate, calcium pantothenate, thiamine mononitrate (vitamin B-1), pyridoxine hydrochloride (vitamin B-6), riboflavin (vitamin B-2), cyanocobalamin (vitamin B-12).

**Wt/Vol., Packaging, Price:** 6 oz foil pouch.

**How Stored:** Shelf stable.

**Nutrition:** Original: Per 34 gm dry (5 servings per packet): Calories 140, protein 16 gm, carbohydrates 7 gm, total dietary fiber 4 gm, fat (total) 4.5 gm (saturates 1.3 gm, monounsaturates 2.7 gm, polyunsaturates 0.5 gm), cholesterol 0 mg, sodium 350 mg, potassium 450 mg.

**New Product–Documentation:** Stewart Reeve. 1991.

*Soybean Digest*. Dec. p. 40a. "Fast food delight." Talk with

Lee Lensch, 1991, Dec. 16. This product is sold only through ADM's direct mail company named Harvest Direct. The company sells only ADM's dry mixes. The company began operation in Dec. 1990, and this product was introduced at that time. ADM hopes to also sell it through retail stores, but there is no firm timetable. The 6 oz of dry mix makes 16 oz (1 lb) of finished product—just add water and mix.

Ad in *Vegetarian Times*. 1992. Jan. p. 16. "Harvest's got it!" "Midland Harvest now comes in seven flavors: Original, Taco, Herbs and Spice, Curry, Italian, Sloppy Joe Fixin's, and Chili Fixin's. Call Harvest Direct at 1-800-835-2867 for a free 16-page catalog."

Labels for Original, Italian Style, and Herb and Spices Style sent by ADM. 1991. Dec. 17. 5.25 by 3.75 inches. Self adhesive. Original: Blue and black on white. "Cholesterol free. Low fat. All-vegetable protein. Microwaveable. A delicious cholesterol-free entree that is based on a savory blend of textured soy protein concentrate with natural flavorings. The Burger 'n Loaf mix can be used in a multitude of recipes: make burgers, loafs, spaghetti balls, or any recipe where ground meat is used."

**1360. Product Name:** Granose Vegetarian Spicy Links.  
**Manufacturer's Name:** Granose Foods Ltd.  
**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.  
**Date of Introduction:** 1990.  
**Wt/Vol., Packaging, Price:** Glass jar.  
**How Stored:** Shelf stable; refrigerate after opening.  
**New Product–Documentation:** Color photo of package in *Linda McCartney's Home Cooking*. 1990. p. 18. The label is red, white, and black on green.

**1361. Product Name:** Granose Vegelinks.  
**Manufacturer's Name:** Granose Foods Ltd.  
**Manufacturer's Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.  
**Date of Introduction:** 1990.  
**Wt/Vol., Packaging, Price:** Can.  
**How Stored:** Shelf stable; refrigerate after opening.  
**New Product–Documentation:** Color photo of package in *Linda McCartney's Home Cooking*. 1990. p. 18. "Wheat protein frankfurters and sausages in brine." A photo shows numerous frankfurters in a bowl.

**1362. Product Name:** So Good Soycreem: Non-Dairy Cream Alternative.  
**Manufacturer's Name:** Haldane Foods Ltd. (Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.  
**Manufacturer's Address:** 25 Hayhill, Sibley Road, Barrow upon Soar, Leicestershire LE12 8LD, England.  
**Date of Introduction:** 1990.  
**Ingredients:** Organic soya milk, vegetable oils, corn syrup, emulsifier (vegetable mono-diglycerides), stabilisers

(xanthan gum, locust bean gum, guar gum), natural colour (beta-carotene).

**Wt/Vol., Packaging, Price:** 120 gm plastic cup.

**How Stored:** Refrigerated.

**Nutrition:** Per 100 gm.: Energy 1827 Kjoules / 437 Kcal (calories), protein 3 gm, carbohydrate 12 gm, fat 36 gm (of which polyunsaturates 47%, and saturates 23%), sodium 0.1%.

**New Product–Documentation:** Label sent by Leah Leneman of Scotland. 1992. Jan. 2. 2.75 inch diameter foil cup lid and 2.5 inch high cup. Yellow, white, gold and light green on green. Illustrations of yellow daffodils and a butterfly on foil lid. Lid: "High in polyunsaturates. Low in saturates. Cholesterol free." Cup: "Soycreem is a new, cholesterol-free alternative to cream, made without animal fats or milk derivatives. Pour over desserts in the same way as fresh cream. (Not recommended for use in coffee.) Suitable for vegetarians and vegans."

Talk with Ray Pierce of Genice. 1994. Feb. 10. In 1990 chilled So Good Soycreem was launched as a non-dairy alternative to dairy double cream, but low in cholesterol, high in polyunsaturates, and low in saturates. It was made for Haldane in a little beige plastic pot with a green foil lid, packed at the Genice plant. It contains a trace of cholesterol because law requires that it contain 36% oil, including some palm oil. In 1991 a shelf-stable UHT version (completely sterilized, with a 9-month shelf life), now named Granose Soya Creem, was launched in a 225 ml Combibloc pack, made for Genice by a large dairy in Ireland which had Combibloc packaging equipment. The chilled So Good Soycreem was discontinued.

**1363. Haldane Foods Group Ltd.** 1990. They've every occasion to choose So-Good (Leaflet). Newport Pagnell, Bucks., England. 1 p. Single sided. 29 cm.

• **Summary:** See next page. On the top half of this attractive color leaflet, a photo shows a So Good brand Strawberry Bombe next to a whole strawberry on a black lacquerware surface. On the bottom half, accompanied by text, photos show four products (each launched in 1990) in the center: Strawberry Bombes, Tofu Delights (non-dairy frozen dessert bars), and two flavors of Tofu Dessert (ice cream style). The text reads: "From teatime afters, to exotic desserts, to treats. The So-Good range of non-dairy soya ice products from Haldane gives your customers every occasion to buy. Especially as the packaging is so appealing, the reputation so tasty and the products being so well advertised to your market..." Address: Howard Way, Newport Pagnell, Bucks MK16 9PY, England.

**1364. Lundin, Vernard E.; Berg, Ken.** 1990. At the bend in the river: An illustrated history of Mankato and North Mankato [Minnesota]. Chatsworth, California: Windsor Publications, Inc. 128 p. See p. 103. Illust. Index. 29 cm. [1



**THEY'VE EVERY OCCASION  
TO CHOOSE SO-GOOD.**

From teatime afters, to exotic desserts, to treats.

The So-Good range of non-dairy soya ice products from Haldane gives your customers every occasion to buy.

Especially as the packaging is so appealing, the reputation so tasty and the products being so well-advertised to your market.

Then of course, they know that they can indulge in So-Good ices as often as

they like because there's no lactose or animal fat to worry about. So they'll buy more, and come back for more, on more occasions.

Of course, they'll also be buying So-Good brands from you because they think they're absolutely delicious.

In every event, we're sure they'll be your most successful frozen assets.



**SO GOOD**

Haldane Foods Group Ltd, Howard Way, Newport Pagnell, Bucks MK16 9PY

soy ref]

• **Summary:** Contains a very good 1-page history of Mankato Soybean Products, Inc., which was renamed Honeymead Products Co. in 1947. The first half of this history is very similar to (but shorter than) that which appears in the following article: Torgerson, Susan. 1980. "Mankato No. 2 in nation in soy processing: 40 years ago industry didn't amount to a hill of beans." *Land (The)* (Southern Minnesota) 4(10):1, 13, 38. April 24.

The second half adds: In 1947, when the Andreas family bought the company from the Washington Egg and Poultry Association, the family had feed mills [and soybean crushing plants] in Iowa under the name Honeymead; so they decided to rename their Mankato company Honeymead Products Co.

Lowell Andreas introduced modern solvent extraction technology to the Mankato plant to replace the old-fashioned expeller that pressed out the oil.

In 1960 Honeymead was sold to the Farmers Union Grain Terminal Association, a grain marketing cooperative based in St. Paul, Minnesota. In 1964 Honeymead expanded into hydrogenating the soybean oil it extracted from soybeans; this "hardened" soybean oil was sold to companies making margarine or shortening.

In 1968 Lowell Rasmussen was named president and continued the growth initiated by the Andreas family.

During the past 25 years—from 1965 to 1990—production has expanded markedly, from a soybean processing capacity of 50,000 bushels, five railroad tank cars of refined oil, and four tank cars of hydrogenated oil per day, to 80,000 bushels, 12 cars of refined oil, and 18 cars of hydrogenated oil daily.

Rasmussen retired in 1984 and Merritt Petersen succeeded him as president. "Honeymead Products Co. and its 185 employees continue to serve Minnesota, the United States, and several foreign countries." A large glossy black-and-white aerial photo shows the present Honeymead plant in Mankato. Address: Mankato, Minnesota.

1365. McCartney, Linda. 1990. Linda McCartney's home cooking. New York, NY: Arcade Publishing, Inc. (a Little, Brown company). England: Bloomsbury. 174 p. Illust. Index. 25 cm.

• **Summary:** As of 1994 this is said to be the world's best-selling vegetarian cookbook. It contains more than 200 recipes and many full-page color photos, uses TVP (both chunk and granular styles) in at least 22 recipes, mostly main dishes, including: Turnovers (p. 65). Beefless pie (p. 85). Beefless rice casserole (p. 86). Beefless stew (p. 86). Burgers bourguignonne (p. 89). Chili non carne (p. 94-95). Festive roast with savoury stuffing (p. 98). Lentil and steaklets stew (p. 104). Linda's lasagna (p. 104-05). Madras onion curry (p. 105). Maine sauerkraut (p. 105). Meatless loaf (p. 106). Mexican loaf (p. 108). Mince and aubergine casserole (p. 109). Moussaka (p. 109-10). Oriental beefless casserole (p. 115). Shepherd's pie (p. 120). Simple beefless hash (p.

120). Sour cream steaklet chunks (p. 121). Spaghetti sauce bolognese (p. 149). Stuffed and broiled mushrooms (p. 125). Stuffed peppers (p. 126).

Linda and Paul (of Beatles fame) McCartney have been married since March 12, 1969, are vegetarians and very active in the field of animal welfare. Linda, born in Scarsdale, New York, USA, has been a committed vegetarian for twenty years, during which time she has lived in England. She is also a world-famous photographer. Her color photo appears on the cover. TVP is more popular among consumers in the UK than in the USA. Pages 18-19 show a color photo of many meatlike products and their packages—including Protoveg Sizzles, Protoveg 5 Grain Burgamix, Tivall Vegetarian Schnitzel, Sausage, and Burger, Fritini Vegetable Pattie Mix, Realeat Vege Burger Mix, Dietade Low-Salt Vegetarian Gravy Mix, Granose Vegetarian Spicy Links, Sausalatas, Vegelinks, and Sausfry, Friggs Vegetable Gravy Powder, and Worthington Wham, Bolono, GranBurger, Vegetarian Fillets [fish alternatives], Stakelets, and Stripples. Page 43 gives a brief description of soya beans and soyfoods. Address: England.

1366. Smartt, J. 1990. Grain legumes: evolution and genetic resources. Cambridge, England: Cambridge University Press. x + 379 p. Illust. Index. 24 cm.

• **Summary:** Strictly speaking, grain legumes are those from which the seed is used directly for human consumption. Legume grain provides a protein-rich source of food which is an essential part of the diet in many parts of the tropics, particularly where meat is scarce. Grain legumes play an important nutritional role in supplying those essential amino acids (particularly lysine) that are not present in sufficient quantities in staple cereal crops, so enabling a balanced diet to be maintained even in the absence of a high intake of animal products. This is particularly important in regions, for example parts of southern India, where religious practices ensure that a majority of the population are strictly vegetarian and grain legumes can provide up to 70% of their dietary protein intake.

Page 28: The section on fermented products notes that soy is fermented in Indonesia as a cottage industry, and in Japan on an industrial scale to make tempe, soy sauce, soybean paste [miso], and natto. The fermenting organisms are very useful in breaking down toxic materials (lectins) and anti-metabolites (protease inhibitors).

Extracted [nonfermented] pulse proteins include soyabean curd ('tofu') and soyabean milk. Textured vegetable proteins (TVP) can be made from the residue of oil extraction.

"1.4—The future for legumes as protein. Since the publication of the joint FAO-WHO report (1973) in which estimates of minimum protein requirements for adequate nutrition were drastically revised downwards, there has been a tendency to consider that it is sufficient to ensure adequacy

of carbohydrate food supplies and that proteins will take care of themselves.” Protein is now much less of a burning issue than it was prior to 1973 (Payne 1978).

In Chapter 7, “The other oilseed legumes,” is a section on the soyabean (p. 246-57) followed by a section on the winged bean (p. 258-61, containing a nice illustrations of all the main parts of a winged bean, from Verdcourt and Halliday 1978). Address: Dep. of Biology, Univ. of Southampton, UK.

1367. Sanitarium Health Food Co. 1990? Product range. 148 Fox Valley Rd., Wahroonga, N.S.W. 2076, Australia. 6 p. Catalog. Undated. 30 cm.

• **Summary:** Product lines include: Flake biscuit range (incl. Weet-Bix [“Australia’s favourite whole wheat malted breakfast biscuits”], Corn Flakes, and Muesli). Loose cereal range. Sundry cereal range. Drinks and beverages (incl. So Good soymilk). Spreads (peanut butter and marmite). Legumes, grains, seeds (incl. soya beans in 500 gm bag). Dried fruits. Nuts. Mixes (such as nuts & raisins). Canned vegetarian meals (24 meatlike products, 3 of which are dry TVP in boxes). Misc. foods (incl. natural lecithin and lecithin granules).

The company also has an export division at Hudson Ave., Castle Hill, NSW 2154. Address: Wahroonga, Australia. Phone: (02) 487 1711.

1368. Agriculture Canada, Oilseeds Division, Grain Marketing Bureau, Grains and Oilseeds Branch. 1991. Oilseed sector profile. Ottawa, Ontario, Canada. 18 + 1 + 8 p. Jan. 28 cm. Spiral bound. [3 ref]

• **Summary:** Contents: Foreword. 1. Introduction. 2. The seed production subsector: Canola, soybeans, flaxseed, sunflower, mustard, composition, subsector performance. 3. The processing subsector: Background, processes, industry structure, production, subsector performance. 4. The marketing subsector: Oilseeds marketing, hedging, processed oilseed products marketing. 5. The marketing environment: Domestic, international markets.

Appendix A: Role of the federal government in the Canadian oilseed industry. Appendix B. Oilseed industry directory.

Table 7 shows that Canada can be divided into three regions: The Maritimes, Central Canada (Ontario, Quebec), and Western Canada.

Table 8 shows soybean exports by major markets. Canada exports more soybeans to the USA by far than to any other country. No. 2 is Japan.

A very important association is the Ontario Oilseed Industry Association, 1185 Eglinton Ave. E, Suite 101, Don Mills, Ontario M3C 3C6. Phone: (416) 429-1073. Address: 930 Carling Ave., Ottawa, ONT K1A 0C5, Canada. Phone: (613) 995-8324.

1369. Norumu, Wayne W.; Baqar, M.R.; Board, P. 1991. Acceptability of soymilk to young Papua New Guineans. *ASEAN Food Journal (Malaysia)* 6(1):24-27. Jan. [14 ref]  
• **Summary:** Plain and flavored soymilks were made from soybeans grown in Papua New Guinea and from a commercial soy protein isolate (Ardex F, made by ADM). Soymilk favored with cacao was accepted by these youth. These products are a good source of energy and protein. Their nutritive value is given. Address: Dep. of Chemical Technology, Papua New Guinea Univ. of Technology, Lae, PNG.

1370. Richardson, Al A. 1991. Trip report and market analysis—Europe. Torrance, California: Nichii Company of America. Feb. 4. Unpublished typescript.

• **Summary:** This trip report describes visits to various companies. Contents: Unisoy Company, Manchester, England. Dragon & Phoenix, London, England. Cauldron Foods, Manchester, England. Sojinal, Issenheim, France. Alpro, Wevelgem, Belgium. Heuschen-Schrouff, Landgraaf, Netherlands. Galactina AG, Belp, Switzerland. Trip and European market summary. Top soyfoods manufacturers in Europe. Address: Director, Marketing & Sales, Nichii Company of America, Inc., 23440 Hawthorne Blvd., Skypark 2, Suite 140, Torrance, California 90505. Phone: (213) 791-0010.

1371. **Product Name:** 2 Quarter Pounders (100% Vegetable Meatfree Burgers).

**Manufacturer’s Name:** Realeat Company Ltd.

**Manufacturer’s Address:** Hayhill Industrial Estate, Barrow on Soar, Leics., England.

**Date of Introduction:** 1991 February.

**Ingredients:** Water, textured soya flour, vegetable oil (hydrogenated), onions, wheat gluten, wholewheat rusk, cellulose gum, natural flavors, sea salt, malt extract, spices, beetroot.

**Wt/Vol., Packaging, Price:** 227 gm paperboard box.

**How Stored:** Frozen.

**Nutrition:** Per 100 gm.: Energy 183 kCal (calories) / 767 kJoules, protein 12.0 gm, carbohydrate 6.3 gm, fat 12.4 gm, dietary fibre 6.8 gm.

**New Product—Documentation:** Label (carton) sent by Leah Leneman of Scotland. 1992. July. 4.5 by 9.5 by 1.1 inches. Reddish brown, orange, yellow, green, and black. Large color photo of the burger with buns and trimmings at bottom of front panel. “New recipe.” Back panel: “Also available: Vegetable Bangers. Realeat Quarterpounders are a delicious and nutritious alternative to meat burgers. They have more protein, higher fibre and less fat than ordinary burgers and are free from artificial colours and preservatives. Quarterpounders are quick and easy to grill or fry and will not shrink when cooked. Guarantee: If for any reason you are dissatisfied with our product, please return the carton, stating

why and where purchased, for a full no-quibble refund. Your statutory rights are not affected.” 4 small color photos show the 2 burgers on plates with other foods ready to serve. UPC indicia.

1372. **Product Name:** Sunburger.

**Manufacturer’s Name:** Sunfood Products.

**Manufacturer’s Address:** Fort Lauderdale, Florida.

**Date of Introduction:** 1991 February.

**Ingredients:** Textured soy protein concentrate, vital wheat gluten (powdered, 75% protein, serves as a binder), natural flavorings, natural spices, fresh onion.

**New Product–Documentation:** Talk with Richard Gross. 1991. Sept. 3. He first developed the Sunburger in 1974 (which see). He bought the name back from one of the surviving parties who makes rugalach. He had been supplying the Sunburger to Tree of Life in boxes, and to other foodservice accounts. The new products uses soy protein concentrate instead of TVP; it is baked rather than fried. It has “no fat” (i.e. less than ½ gm of fat per serving). The quality and acceptance are good. Now he has only one variety (plain), but he will add another flavor (like breakfast sausage) within the next week.

1373. Bertin, Oliver. 1991. Two Toronto terminals closing: Move will hurt soybean farmers. *Globe & Mail (Toronto, ONT, Canada)*. March 16. p. B9. Metro edition.

• **Summary:** The Canada Malting Co. Ltd. and Victory Soya Mills Ltd., “two of Canada’s most important grain terminals, are closing, in moves industry experts say will have major ramifications for farmers, consumers and the port of Toronto.”

The “Victory Soya Mills Ltd. plant was closed this week and the 80 employees are cleaning out the last of the soybeans, a process that will take about 6 weeks. The plant has not yet been sold. Victory’s general manager, Murray Davis, said the closing will have ‘major, major ramifications’ for farmers, consumers and industry because it was the largest and most important soybean crusher in Canada. ‘When you take a 15- or 20-million-bushel crush out of the system you have to feel the impact,’ he said...

“Ontario soybean farmers, however, said they were ‘reeling at the news’ that the plant would close. ‘It’s as though our worst nightmare has come to life,’ said Larry Miehl, president of the Ontario Soybean Growers Marketing Board. ‘Our whole industry is being turned upside down.’

“Mr. Miehl said the closing will threaten the viability of Canada’s soybean industry and reduce competition because there were only three crushers in Canada, and Victory was the largest. Farmers will now have to ship their beans to U.S. crushers—an expensive proposition—or risk getting a lower price from the two crushers left in Canada. Both of these plants are foreign owned. Central Soya Inc. has a plant in Hamilton that it bought some years ago from Toronto-based

Canada Packers Inc., while Archer-Daniels-Midland Co. of Decatur, Illinois owns a plant in Windsor, Ontario [ADM Agri-Industries Ltd.]...

“Soybeans are grown by more than 25,000 farmers, or one-third of all the farmers in Ontario. Moreover, it is one of Ontario’s most important crops, with sales last year of about \$350-million...”

“Mr. Davis said the Victory plant was closed for many reasons. It was becoming increasingly difficult to get soybean trucks into downtown Toronto, municipal taxes were too high and the Harbourfront development was getting closer. But the soybean industry has also suffered as a result of government policies. The federal government subsidizes the shipment of a competing product, canola seed, from Western Canada, but does not subsidize soybean crushing. Victory has also suffered under the Canada-U.S. free-trade agreement. The U.S. levies an 18-per-cent tariff on soybean oil imports, while Canada charges only 5 per cent on oil coming in. This, industry officials said, has made it difficult for Canadian crushers to compete.

“The closing of the two installations marks the end of an era for Toronto as a major grain port. The giant grain freighters that carried barley and soybeans through the Great Lakes have stopped coming, and the last of the grain elevators that marked the Toronto skyline for decades will eventually be torn down, said Toronto Harbourmaster James Brewster.” Address: Agriculture & Food Reporter, Canada.

1374. Burns, Howard. 1991. Plant closing upsets soybean producers: The only other two soybean processing plants in Ontario can’t handle all the beans processed in the province. *London Free Press (Ontario, Canada)*. March 19.

• **Summary:** Central Soya of Canada has closed its soybean processing plant in Toronto. According to Larry Miehl, head of the Ontario Soybean Growers’ Marketing Board “The shutdown adds to the uncertainty of farmers preparing to plant what was to have been the largest soybean crop in Ontario history... The marketing board may be forced to look for new export buyers to make up for the loss but there’s a down side to that. Miehl said the price farmers get is usually better at home than abroad. The closing also eliminates about two million bushels of storage space badly needed at harvest time. ‘What are we going to do with our beans?’ The two remaining plants, one in Windsor [ADM Agri-Industries Ltd.] and the other in Hamilton, can’t handle all the soybeans produced in Ontario, he said.”

1375. *Windsor Star (Essex County, Ontario, Canada)*. 1991. Windsor firm may gain from plant closure. March 22. p. 8B.

• **Summary:** “Windsor’s ADM Agri Industries Ltd. [also known as Maple Leaf Monarch] became one of only two soybean processors left in Canada this week when a soybean crushing plant in Toronto [Victory Soya Mills Ltd.] closed its doors.” Soybean farmers said “the closure is just another

sign of their industry in crisis... Prior to the closing, all three Ontario processing plants were operating at 60-percent capacity, so the other two plants [including a plant in Hamilton run by Central Soya of Canada] should be able to take up the slack.”

Larry Miehls, chairman of the Ontario Soybean Growers' Marketing Board, said: “We've known for several years that the soybean processing industry has been having major problems, but we were hoping that they could hang on until market conditions improve.” Miehls complained that western Canadian canola, which competes with soybean oil and meal, is supported with government subsidies, making it hard for soy farmers to compete. In addition, Ottawa has been slow to achieve free trade in soybean oil with the U.S., he said, and the Toronto plant closing makes the situation worse.” John Davidse of the OSGMB added that “Growers need to become more efficient or work to develop export markets.”

Note: Windsor is the southernmost of these three ports, located in the heart of Ontario's soybean growing area at the southwest end of Lake Erie across from Detroit, Michigan. Hamilton is the next farthest north, almost 200 miles to the northeast, on the southwestern end of Lake Ontario. Toronto, the farthest north, is also on Lake Ontario, about 40 miles northeast of Hamilton, and the furthest from the center of Ontario's soybean growing area.

1376. CSP Foods Ltd.; Central Soya of Canada Ltd. 1991. CSP Foods Ltd. and Central Soya of Canada Ltd. have signed a letter of intent to purchase the edible oils business of Canada Packers Inc. (News release). Canada. 7 p. March 27.

• **Summary:** “The purchase includes edible oil refineries in Montreal, Toronto and Wainwright, Alberta, and an oilseed crushing business at Fort Saskatchewan, Alberta, and a seed gathering station at Humboldt, Saskatchewan. A 50% ownership in Prairie Margarine Inc. of Edmonton is also part of the deal... The edible oil business of Canada Packers employs 400 people and generated consolidated sales of approximately \$250-million in the fiscal year ended March 31, 1990.

“CSP Foods Ltd. is jointly owned by Saskatchewan Wheat Pool and Manitoba Pool Elevators and is the major processor of canola and sunflower seed in western Canada. It operates crushing and refining facilities at Altona, Manitoba and Nipawin, Saskatchewan. CSP Foods has a crush plant at Harrowby, Manitoba, a refinery at Dundas, Ontario and a 50% ownership in Prairie Margarine Inc. of Edmonton, Alberta.

“CSP Foods is a leading marketer of canola oil and meal products into the North American marketplace. CSP Foods employs 290 people and generated consolidated sales of approximately \$200 million in the fiscal year ended March 31, 1991.

“Central Soya of Canada Limited operates a soya/canola crush plant at Hamilton, Ontario and is a subsidiary of Central Soya Company Inc.”

“This acquisition will combine three Canadian companies into one. On a North American basis, the new company is estimated to have three percent of the Edible Oils market. This compares to US market shares for ADM, Cargill and Bunge of 33, 20 and 12 percent, respectively...”

“Canola is Canada's major oilseed crop, accounting for 65-70 percent of Canadian oilseed production. It is second only to wheat in terms of gross farm revenue, averaging \$850-900 million per year. Japan is the predominant export market for canola seed, taking up to 90 percent of total exports and up to 60 percent of canola production. The balance of the crop is sold to the domestic crushing sector, most of which is located in Western Canada.”

“Central Soya of Canada Ltd. operates a soy/canola crush plant at Hamilton, Ontario with a soya crush of 365,000 tonnes a year (1,270 tonnes a day) and a canola crush of 227,000 tonnes a year (700 tonnes a day). The crushing canola and soya can take place simultaneously.”

Also gives details on: The agreement in principle. Canada Packers Ltd. Assets. CSP Foods Ltd. current operations. Central Soya of Canada Ltd. current operations. New company structure (CSP Foods and Central Soya will each own 50% of the new company and both will provide three Board members or partners to the new company). Rationale for the purchase and merger. The impact on the market place. The impact on producers. Chart of assets of the 3 companies. One map shows the new company's oilseed refineries in Canada, and another map shows its oilseed crushing plants.

1377. Sklar, Ronit (Mrs.). 1991. Brief history of Shefa Protein Industries, Ltd. Subsidiary of Israel Edible Products Ltd. (Interview). *SoyaScan Notes*. March 27. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Shefa Protein Industries Ltd. was founded in 1967 in Arad, Israel by Mr. Sid Katzin [Katzen] and his brother Dr. Sol Katzin [Katzen]. Arad is a town in southeastern Israel near the Dead Sea. The Hebrew adjective “Shefa” means plentiful or bountiful. The company was Israel's first manufacturer of soy products. Their first product was SVP, a structured vegetable protein made from extruded defatted soy flour, similar to TVP, but not under license from any other company. In the early days, most of the product was sold to Iran, then headed by the Shah. Only small quantities were sold in Israel, both to food manufacturers and (usually in plain small plastic bags) via retail food stores. Other early products were a Schnitzel and a Soya Hamburger.

In 1976 the company was purchased by Israel Edible Products, Ltd. (IEP), a major Israeli food manufacturer and conglomerate, whose main offices are located near Haifa.

Shefa became a subsidiary of the parent company and its products started to be sold under the Telma brand. Telma is a subsidiary of IEP that produced mayonnaise, margarine, various powdered soups, etc. At this time Shefa began to make new extruded products (such as snack foods, breakfast cereals, crisp breads, pet foods, etc.) from various other commodities in addition to soya. Moreover, new textured soy products were introduced, including textured soy concentrates and new flavors of textured soy flour. Shefa became the extrusion division of Israel Edible Products.

In 1978 Mrs. Sklar, a food technologist, began to work for Shefa. (She has not heard of Eliahu Navot and does not think he was involved in starting Shefa.) Shortly thereafter, in 1978 the conflict began with Iran, which led in Jan. 1979 to the Shah fleeing the country and the Ayatollah Khomeini coming to power. This crisis led to the end of Shefa's sales of their soy protein products to Iran. Until 1988, Shefa was the only manufacturer of soy products in Israel.

Today Shefa makes about 6 different extruded soy products, from defatted flour, soy protein concentrates, and cereal-soy blends, in various sizes and flavors. All are still sold under the Telma brand. Soy products are now a very small part of Shefa's total business; most of these textured soy products are sold to food manufacturers in Israel, including Tivall. Tivall is a customer, not a competitor. Tivall, Israel's largest seller of vegetarian protein foods, makes excellent quality products. Shefa's products are used as both meat extenders and in meatless vegetarian products. The factory has expanded, but it is still at the same location in Arad. One lady, Jenny Kozocar, has been with the company since it started. Shefa is the main producer of breakfast cereals in Israel. IEP has 5-6 subsidiaries, including Telma and Shefa.

Note: From 1972 to 1975 Stanley Scharf was employed as a chemist for Shefa Protein Industries in Arad, Israel. As of April 2012 he lives in Ithaca, New York. Address: Plant Manager, Shefa Protein Industries Ltd., P.O. Box 39, Arad 80700, Israel. Phone: 57-957860, 953555, 955286, 955416. Fax: 57-958049.

1378. *SoyaScan Notes*. 1991. Global Harvest (Overview). April 4. Compiled by William Shurtleff of Soyfoods Center. • **Summary:** Global Harvest (located at 1420 Sams Ave., Jefferson [a suburb of New Orleans], Louisiana) was started in Jan. 1991 by Tom Futch, a brilliant PhD and food scientist, who formerly worked with many large food companies and just before this with a soyfoods company in Louisiana that is now in bankruptcy [probably Manna International]. The former company was founded in 1983, but there were management problems so Tom left in early 1991 and started his own new company. Tom buys soy protein products [textured concentrates] from ADM and blends them with other ingredients to make meatless meals. Global Harvest's biggest market is to prison systems (correctional

institutions); their budgets are being cut and they want more nutrition for their dollar. The company has 10-12 soy products on the market, plus some other products (mainly beverages) that do not contain soy. They also have a soymilk product at the R&D stage. Tom has a strong personal interest in soyfoods. The company is now trying to raise new capital.

In an interview with Greg Caton of Lumen Food Corp. in Louisiana on 1 Nov. 1988, he noted: Contact Dr. Tom Futch of Manna International in New Orleans, Louisiana, for info on TVP. He is a born-again Christian of the best type. A PhD in food science, he worked with Staley in extrusion of soy protein concentrates. Phone: 504-254-3333.

1379. Yakabushi, Konrad. 1991. Ontario soybean growers crushed by plant closing. *Toronto Star (Ontario, Canada)*. April 11. p. C1, C10.

• **Summary:** Last month Victory Soya Mills, Ontario's largest soybean crusher, ceased operations and padlocked the doors of its plant on Lakeshore Blvd. East, thus closing a chapter in Toronto's history.

For almost 50 years, "convoys of trucks had converged on Queen's Quay during the dying days of Indian summer to unload" the harvest of many Ontario farms at the soybean crushing facility.

While some Toronto residents will hardly miss the mile-long traffic snarls, "the closure has left many others with a wistful sense that an annual rite of autumn and a historic Toronto landmark, are soon to be lost forever."

But for many of Ontario's 25,000 soybean farmers, whose crops were crushed by Victory Soya Mills, the plant closure raises more serious issues; where will they sell their crops in the future? Central Soya Co. Inc. (Fort Wayne, Indiana), the plant's owner blames the demise "on several factors, including high municipal taxes, traffic problems and encroaching development on the city's waterfront." Bill Campbell, vice-president of processing at Central Soya, says the basic problem was that "the plant was unable to operate profitably in that environment." The larger problem is that there is an excess of soybean crushing capacity in North America.

Soybean farmers point to federal policies aimed at promoting production of canola, a competing oilseed grown on the Prairies to the west. Even today, "Ottawa subsidizes the shipment of canola to Eastern Canada and, during the 1970s, handed out grants to encourage the construction of canola crushers in the West. Central Soya told the Ontario Soybean Growers' Marketing Board that the plant might be spared if the Board could get the government to change some of those policies.

Built in 1944 during World War II, the plant was a key factor in the birth and development of Ontario's (and Canada's) soybean industry. Production rose rapidly during the 1970s "as continent-wide health concerns sparked a move away from animal fats to vegetable oils." Soybeans

even found their way onto Canadian dining tables in the form of margarine, salad and cooking oils, soyburgers, tofu, and soy flour in baked goods. Moreover, soybeans were increasingly used in industrial applications from printing inks to paints, and soybean meal became the standard protein source in livestock and poultry feeds.

Today Ontario grows 95% of Canada's soybeans and 70% of these are grown in southwestern Ontario, which stretches further south than Detroit or Ann Arbor, Michigan.

Until last year, about 85% of Ontario's soybean crop was crushed in Canada yielding two value-added products: crude soybean oil and protein-rich soybean meal. But with the closure of Victory Soya Mills, about one-third of Canada's soybean crushing capacity and roughly 2 million bushels of soybean storage space have been eliminated, farmers will have to sell their soybeans anywhere they can.

Central Soya, which owns a smaller soybean crushing plant in Hamilton, Ontario, "says it is considering expanding that plant to make up for the lost capacity in Toronto.

The only other Canadian plant that crushes soybeans is ADM Agri-Industries, Ltd. (dba Maple Leaf Monarch), in Windsor, Ontario, owned by ADM of Decatur, Illinois.

It seems clear that the plant closure will hurt Ontario soybean farmers, in both the short and long terms. They may end up having more of their soybeans crushed in the United States and they will surely have to expand their markets overseas.

Photos show: (1) The Victory Soya Mills plant and silos. (2) Jim Allin, a soybean grower, standing next to a large sack of Pioneer brand soybean seed.

1380. Burket, Richard E. 1991. ADM, British Arkady, Dwayne Andreas, and soy protein concentrates (Interview). *SoyaScan Notes*. April 25. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** On 15 Jan. 1973 ADM acquired 50% of British Arkady Holdings Ltd. which simultaneously acquired its subsidiary British Arkady Co. Ltd. On 31 Dec. 1987 ADM acquired the rest of British Arkady Holdings Ltd. so that it now owned 100%. Arkady Holdings Ltd. is the important company because it is the parent company for all of the different Arkady companies such as the Haldane Group, etc. Dwayne Andreas is probably as true a believer in the potential of soybeans for food uses as anybody in the business. And he is willing to put his money where his mouth is. Dick worked with both Glidden and Central Soya, but they were not willing to put their money where their mouth was; they didn't really believe in it. Dwayne does. Yet it wasn't until ADM got into soy protein concentrates that the food uses really took off. Address: VP and Asst. to the Chairman, ADM, Decatur, Illinois 35022. Phone: 800-637-5843.

1381. Fehlberg, Eric C. 1991. The sale of Granose Foods

to the Haldane Foods Group and British Arkady Ltd. (Interview). *SoyaScan Notes*. April 30. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The sale of Granose took effect from 1 Jan. 1991. At the time of the sale, Granose was doing very well financially. The only year that they didn't break even or make a profit was 1990. At the beginning of 1990 they moved from their old building into the new one; the expenses connected with the move took up most of their profits. In all other recent years they have been making good money, and a portion of that money has been contributed to the church. Mr. Fehlberg cannot understand why the church would sell such a thriving company.

But the board of the directors of the British Union of the Seventh-day Adventist church got an offer (which was a little bit of back-door work) that was too good to refuse, so they looked at it in their committee meeting and decided to accept it. They have a good understanding of all aspects of the company. This is the second long-established Seventh-day Adventist food company that has been sold by the church during the last 2 years. Loma Linda Foods was sold to Worthington Foods in Jan. 1990. Most of the employees of Granose have stayed with the company after the sale. Peter Archer, the former general manager, has stayed but is no longer the general manager. He is now marketing manager. The church no longer has any involvement with Granose at all.

We cannot say that these two sales are the start of a trend, but he is quite sure that the four Scandinavian Adventist food companies (Nutana in Denmark, Sweden, Norway, and Finland) will be the next to be sold. Nutana-Sweden is in considerably better financial shape than the other three, and Nutana-Finland is in pretty good shape. Nutana in Denmark and Norway are losing money and are very much in trouble. But he thinks that can easily be corrected if they get their costing straight and price their products based on their real costs. The man who has gone in to make these changes, Jan Paulsen, has as good a chance of succeeding as anyone, but he works out of London, England and does not have a much time for the health food work. He feels that the church should not be in the business of selling healthy foods. He influenced the board of the British Union in their decision to sell of Granose.

After the Scandinavian Nutana companies, the Egypt Food Factory, run by Mokhtar Nashed in Helipolois, Cairo, Egypt may well be the next to go, probably within the next few months. They used to make soymilk but he thinks they no longer are making it. Their products are "sub-standard" but still good. Superbom in Brazil is also having a hard time because of the adverse exchange rate and the desire to borrow money from the church. Superbom Chile is also having some problems.

But many of the Adventist food companies definitely will not be sold by the church in the foreseeable future.

In fact, in the Far Eastern Division, a new food company in Hong Kong, run by Mr. Menzies, is scheduled to start selling products in early June of 1991. A new company is also starting in Thailand. Sahm Yook in Korea is also very successful, as is DE-VAU-GE in Germany and Sanitarium Foods in Australia. The food companies in Central America (Mexico, Costa Rica) and the Caribbean (Trinidad) are all doing well.

There are various administrative “Unions” within the Seventh-day Adventist Church. There are 4-5 unions in North America, 4 in Australia, many in South America, etc. The South American ones report to one central office in Brasilia, Brazil. The Central American food companies report to Miami, Florida. Sometimes a company manager and the head of the Union (a church official to whom he reports) have different ideas of what needs to be done at the company. These two men live in two different worlds, yet both have input in running the company. This can be a cause of business problems. The Mormon church owns some food companies and has the same type of problems. Address: Director, International Health Food Assoc., Seventh-day Adventist General Conference, 12501 Old Columbia Pike, Silver Spring, Maryland 20904. Phone: 301-680-6674.

1382. Harvest Direct, Inc. 1991. We couldn't keep the lid on taste this great! Introducing Midland Harvest (Ad). *Vegetarian Times*. April. Inside front cover.

• **Summary:** See next page. This full-page color ad introduces the all-new Midland Harvest Burger 'n Loaf and Taco Filling 'n Dip, both made with 100% vegetable protein. Three photos show the products used in favorite dishes. “100% Vegetable Protein.”

This ad also appeared in *East West* (July/Aug. 1991, p. 37). Address: P.O. Box 4514, Decatur, Illinois 62525. Phone: 800-835-2867.

1383. *Ontario Soybean Growers' Marketing Board Newsletter*. 1991. Victory Soya Mills closes—permanently. April. p. 1.

• **Summary:** “The cornerstone of Canada's soybean industry was shattered in mid-March when Central Soya of Canada Ltd. announced that they were permanently closing their Toronto soybean crushing plant. Built in 1944 during World War II and called ‘Victory Soy Mills’, the plant effectively established the soybean industry in this country with a massive public relations campaign to encourage Ontario farmers to grow soybeans.

“The Toronto plant was purchased by Central Soya in 1985. They invested millions of dollars to upgrade it and make it one of their most efficient soybean crushing facilities. Central Soya also owns the soybean and canola crushing facility in Hamilton, Ontario and is owned itself by Gruppo Ferruzzi SpA of Italy. Ontario has one other soy/canola crushing plant located at Windsor, which is owned by

Archer Daniels Midland [ADM Agri-Industries Ltd.].

“Several reasons have been cited for closing Victory Soya Mills including a number of federal and provincial programs which have benefited the canola industry at the expense of the soybean industry. These include grants to build canola crushing facilities during the 1970's and transportation subsidies which still help to ship canola seed and canola products to eastern Canadian markets. The plant's location on the harbourfront of Toronto was also a factor. In addition to high real estate value and high taxes, truck access has become difficult in recent years.

“Closing the plant means that Canada will lose more than one third of its soybean processing capacity, over two million bushels of storage and 80 jobs. This comes at a time when Ontario farmers are expected to plant their biggest-ever soybean crop.” Address: Box 1199, Chatham, ONT, Canada N7M 5L8. Phone: 519-352-7730.

1384. Eichberg, Joseph. 1991. The lecithin industry and market worldwide (Interview). *SoyaScan Notes*. May 23. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** There are basically two types of lecithin companies: Soybean crushing companies that produce crude lecithin from soy oil (e.g. Ferruzzi/Central Soya, ADM, Honeymead), and lecithin companies that buy crude lecithin from soybean crushers and fractionate it to make various products (e.g. Lucas Meyer, Nattermann Phospholipid GmbH). These lecithin products can be further classified into two broad types: those used in foods, and those used in pharmaceutical and cosmetic products.

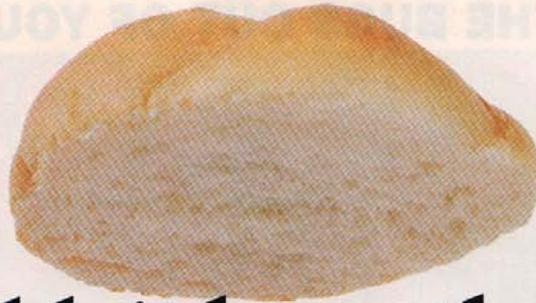
A ranking of lecithin companies worldwide by sales of lecithin products (i.e. total monetary value) would look something like this: 1. Ferruzzi/Central Soya. 2. Nattermann Phospholipid GmbH. 3. Lucas Meyer. 4. Archer Daniels Midland Co. (ADM). 5. Honeymead Products Co.

It is not clear whether Nattermann or Lucas Meyer is the second largest in sales. Lucas Meyer probably moves a larger volume by weight, but Nattermann sells mostly pharmaceutical and cosmetic products with a very high price per unit weight.

Note: This is the earliest English-language document seen (March 2016) that contains the word “fractionate” in connection with lecithin. Address: American Lecithin Co., P.O. Box 4056, Atlanta, Georgia 30302.

1385. Fischer, G. 1991. Erfahrungen ueber die akzeptanz von Tofu-Gerichten und texturierten Sojaprodukten in der Gemeinschaftsverpflegung [Experience concerning the acceptance of tofu products and textured soy products in the food service industry]. In: F. Meuser and P. Suckow, eds. 1991. *Soja in Lebensmitteln: Vortraege 2. Hamburger Soja-Tagung*. Berlin: Technische Universitaet Berlin, Institut fuer Lebensmitteltechnologie und Gaerungstechnologie—Getreidetechnologie. 171 p. See p. 71-82. [Ger]

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• **Summary:** Contents: Introduction. Remarks on the concepts of full value/high quality foods (vollertige Kost), essential or required foods (bedarfsgerechte Kost), tasty foods (schmackhafte Kost), and nourishing/wholesome foods (bekömmliche Kost). Soy products as components of the food service industry. Soy products as components of a known diet? (Bestandteile einer bewussten Ernährung). Acceptance of soy products. The supply of soy products (incl. TVP, tofu, and tofu products). Conclusion. Address: Deutsche Gesellschaft fuer Ernährung e.V., Frankfurt am Main, Germany.

1386. MacNeil/Lehrer Newshour. 1991. Dwayne Andreas, ADM, Vege Burgers, and investing in the Soviet Union. Television broadcast. PBS. July 15. Based on a report by Paul Solman. [1 ref]\*

• **Summary:** The Café Grill in Moscow, one of the hottest restaurants east of Sweden, sells 4,500 Vege Burgers a day. Both the owners and the customers are Soviet, but the burgers are shipped from America's heartland. "The fabulously successful, cholesterol-free Vege Burger. Behind it stands a huge U.S. firm that could invest hundreds of millions of dollars in the USSR. You look at the success of a Vege Burger in the Soviet Union and you can imagine Mikhail Gorbachev thinking that his could look like ours here in the U.S. some day. All he needs is some time to turn the system around and enough capital. So as Gorbachev makes the rounds at the Economic Summit in London this week he's thinking about capital and how to raise it..."

"We went to see someone whom Gorbachev has turned to for advice since his days as Agriculture Minister, the head of the \$8,000 million Archer Daniels Midland Corporation, and incidentally the man behind the Vege Burger, known as Mr. Agribusiness, Dwayne Andreas," who has built an empire on the soybean. Its cheap, plentiful, and thus (he thinks) an ideal food for a hungry Soviet Union. He is actually selling Vege Burgers in the USSR. He notes that "we have shipped enough to the Soviet Union, and most of it is already sold, to make 14 million patties." And he has noticed, contrary to what is generally believed in this country, that the Soviet people have a lot of money on their pockets and a lot of savings, partly because they have not had a lot of goods to buy. So there is a ready market for Vege Burgers and the rubles are available. To avoid getting stuck with lots of rubles that are not readily convertible to dollars, Andreas has set up a tricky bartering arrangement, essentially trading his Vege Burgers for petroleum, which will then be sold for dollars. Andreas hopes to put a patty freezing machine in literally every major Soviet city. Plus, he wants to build a processing plant like the one at corporate headquarters in Decatur, Illinois, that would be a \$100 million dollar investment all by itself. The main obstacle to Andreas is getting the Soviet Union to recognize the right of private ownership. That is the key. Once he has that right, he would

keep the money in the Soviet Union rather than taking it out. The Soviets have got to make their country as comfortable as California for investors, "then we'll all be glad to have assets there." Andreas' first small step in that direction is the Vege Burger, a staple at the ADM executive dining room in Decatur. The boss (Andreas) eats them at least 3 times a week. Solman remarks that his Vege Burger doesn't taste any different from the hamburgers sold at McDonald's, just a little smoother consistency. What does Andreas think are other main problems with the Soviet economy? It is far too centrally controlled. Fixed prices distort the market, created a black market, and cause farmers and housewives to hoard. The answer is a market economy. And the time to help the Soviets is now—while the window of opportunity is open. If it closes and things slide backwards, the West might have to wait another 70 years.

1387. Pringle, W. 1991. Soya protein, past experience & future potential. In: F. Meuser and P. Suckow, eds. 1991. Soja in Lebensmitteln: Vortraege 2. Hamburger Soja-Tagung. Berlin: Technische Universitaet Berlin, Institut fuer Lebensmitteltechnologie und Gaerungstechnologie-Getreidetechnologie. 171 p. See p. 153-59. [4 ref]

• **Summary:** Contents: Introduction. Potential uses of soya bean. Past product launches. Soya product as a foodstuff.

A certain Mr. Robert Whympier was probably the first person to show Europeans how the functional character of soya proteins could be exploited. He returned to England in 1923 after a trip to Japan with a suitcase full of soya beans and a head full of ideas. He carried out a series of experiments using soya flour as an ingredient of the dough in the breadmaking process. This work culminated in the granting of a British Patent in 1926. The patent described conditions of unusually vigorous dough mixing which allowed for the maximum inclusion of air. Very substantial improvements in the colour of the bread crumb and the volume and quality of the bread were observed. We now know that this bleaching and improving effect is a direct result of a coupled oxidation reaction involving the lipoxygenase enzyme present in the soya flour. The breadmaking industry of Europe now uses thousands of tonnes of enzyme-active soya flour every year as a bread improver.

"The work of Whympier and his associates continued and in the early 1930's a heat processed full fat soya flour appeared on the market."

Henry Ford, a man of vision, initiated the next phase in the development of soya proteins for human food. In the early 1950's [sic, mid-1930s] he put together a team to work on the isolation of pure protein from soya and the subsequent spinning of this protein into a stable fibre." After his scientific team was disbanded, the expertise was not lost, for the scientists found places in food companies and began to look at the use of isolated soya proteins in the

food industry. It is now well established that isolated soya proteins have functional uses for binding and emulsification, and for improving nutritional value. “More controversial and newsworthy was the attempt by the old Ford researchers to produce textured protein products to simulate meat and other traditional protein foods. They did this by two processes: (1) The spinning of isolate into fibres, using technology from the textile industry; (2) The extrusion of soya bean meal under conditions of high temperature and pressure... Branded food products based on these textured soya proteins were launched on the market in the late 1960s and all during the decade 1970-1980.”

During the early 1970s the future looked a little bleak due to the world population explosion, the world energy crisis (precipitated by OPEC), and the world food crisis (which was more specifically a protein crisis). The first World Soy Protein Conference, held in Munich in 1973 with over 1,000 delegates, was a very important affair. “The U.S. Secretary of Agriculture, Mr. Earl L. Butz, opened the conference. Senator Hubert Humphrey made a memorable inspirational address... I was there and I can tell you we all thought we could make a big impact on the world’s on the world’s problems by supplying textured soya protein.”

Against this background, many such products were launched in the U.K. in the mid-1970s by major food companies. All but Kesp were based on textured soya flour: 1975 Feb.–Mince Savour by Nestle; 1975 May–Country Meadow by Brooke Bond Oxo; 1976 Jan.–Soya Choice by Cadbury; 1976 April–Economince by Spillers; 1976 Sept.–Kesp by Courtaulds (made from spun soy protein fiber).

“All of the products enjoyed real success for a period of time. In particular Cadbury’s Soya Choice sold well for about three years in every area of the U.K. Sad to relate, however, all of them quietly and gradually lost sales and finally disappeared from the market. It is important to know why... People did not want a substitute food; this was a challenge to their security, a threat to the comfortable familiar world.” The consumers of today have become more “green.” “It is clear to me, the emotional conditioning that sees security in the consumption of traditional animal foods is being replaced by the more logical attitudes of a new generation. The young people of today want to find ways to preserve the environment and they have an increased perception of health problems that may be caused by the consumption of animal products, especially animal fat. These and other factors are making vegetarianism more attractive.

“A recent Gallup poll has shown, in the U.K., that 3% of the total population are vegetarians. A total of 8.5% are either totally vegetarian or avoid red meat, and 9.3% of children are vegetarian. Vegetarianism has moved from being a refuge of cranks to being fashionable.”

A new product popular among yuppies is Quorn, a textured fungal protein, marketed by ICI and RHM via Sainsburys and other selected suppliers. Address: The British

Arkady Co. Ltd., Manchester, England.

1388. Tara, Bill. 1991. Pioneering macrobiotics and soyfoods in London (Interview). *SoyaScan Notes*. Aug. 18. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Starting in the late 1960s, the pioneering work with soyfoods in London was done by Craig and Gregory Sams. They and their parents were Americans, and they had gone to college in America. Their father was employed by the U.S. armed forces as an historian; they spent a lot of their time growing up between America and England. Greg fell out of a tree while going to college in Berkeley in the late 1960s and was paralyzed from the waist down, so he was confined to a wheelchair, but was still very active and innovative. In the late 1960s they set up a macrobiotic natural foods cafe / restaurant on Portobello Road in London, then changed it into Ceres Grain Shop, a natural foods retail store. As volume increased, they began to distribute their products out of the back of their shop, and in about 1971 founded Harmony Foods Ltd. as a distribution company located in a warehouse on Ladbroke [sic, Latimer] Road. The model and evolution was similar to that of Erewhon in Boston. Harmony Foods was the first natural foods distributor in England, and probably the second in Europe after Lima Foods of Belgium. Soon they were importing macrobiotic foods from Japan, and distributing organically grown grains from England and from The Camargue (a marshy island in the delta of the Rhone River in the south of France), etc.

Among their early Japanese imports were bulk miso and “tamari” (actually shoyu), imported from Muso in wooden kegs. They repackaged the miso and shoyu in glass bottles under the Harmony Foods label in London. This was the first Japanese miso and shoyu sold in England. In about 1972, as soon as Erewhon started having miso and shoyu packed in Japan, the Sams had the same thing done with theirs, then they applied their own labels in London. But they continued to import in bulk as well. A Chinese company in London made tofu and [mung] bean sprouts, then sold the tofu to the Sams brothers; they sold it unpackaged in open trays in water. At that time, tofu was not emphasized much in macrobiotic circles so not much was sold; it was considered too yin. The Sams also sold deep-fried Rissoles filled with TVP instead of meat; as early as 1970 the Rissoles were being made by an Israeli guy (name?) who owned a shop (name?) by the Hempstead Heath. Marigold Foods also used TVP in the mid-1970s.

In 1970 Bill Tara, then a vice president at Erewhon in Boston, passed through London on his way to India. One purpose of his trip was to scout out the possibility of Erewhon setting up a distribution point or center in England. Paul Hawken was president of Erewhon at the time, and Erewhon was importing miso and tamari from both Muso and Mitoku in Japan. Bill and Paul had been roommates

in a warehouse in San Francisco, then they took over the Erewhon food store from Evan Root, Paul starting 2-3 months before Bill. In London, the Sams brothers were just opening a new natural foods restaurant in the Notting Hill area so Bill and Paul Petrofsky spent 2 weeks fixing it up. Paul later started Baldwin Hill Bakery with Hy Lerner. Bill stayed in London 2-3 months during this first visit.

In about 1972 Bill returned to London with Russel Demerais, on the Erewhon payroll, again to start an Erewhon distribution center. But Erewhon went through a cash crisis and Harmony foods had grown dramatically. So Bill and Peter Bradford (an Englishman who had come to America in about 1970 and worked for Erewhon doing organic agriculture at Erewhon Farms near Keene, New Hampshire) began to work for the Sams brothers both at Ceres Grain Shop (the retail store) and Harmony Foods (in the warehouse). Bradford, who now has a very successful natural food store in England named Clearwater Natural Grocer, has been one of the most important promoters of soyfoods in the UK. At this time, Craig Sams set up a bakery. By now, miso and tamari sales had increased; Harmony was still affixing its own label to unlabeled packs.

In 1974 Bill and Peter established Sunwheel as a natural food/macrobiotic distributor. They picked up exotic Japanese imports that Harmony found unprofitable and wanted to drop—so there was little or no competitive feeling with the Sams. By late 1974 Sunwheel Hatcho Miso, Mugi Miso, and Tamari were on the market, imported from Muso (Yuko Okada) in Japan. Sunwheel also made granola and peanut butter. Sunwheel never sold any other soyfood products; they had very limited warehouse space and no refrigeration.

Note: On 17 Aug. 1975 Renée Tara wrote William Shurtleff in California. She was living at 30 B Market St., Bradford-on-Avon, Wilts., England. She is writing a European Macrobiotic Cookbook. She requests information on miso and invites Shurtleff to visit.

In about 1977 Sunwheel acquired a retail store that had been started in and by the Community Health Foundation. By 1979 Sunwheel was very successful, but it needed to be recapitalized or sold. So the partners decided to sell it to a larger health food company; Peter kept the retail store.

In Nov. 1975 Bill established the Self Health Center which by 1976 grew into the Community Health Foundation (CHF). By 1976 CHF was offering classes in soyfoods. Paul Jones was the key man with tofu; he taught classes and started making tofu out of his home in the Highgate area. Paul Jones was definitely the first Caucasian to pioneer tofu in England. Simon Bailey, a baker who was originally with one of the first natural foods stores in England, located in Bath, taught about tempeh. These people were experimenting in the kitchen with soyfoods and taught in a sort of an apprenticeship program. Jon Sandifer, who is still with CHF, learned tempeh from Simon Bailey. CHF sold some tofu and tempeh through its own sit-down restaurant named

The Seven Sheaves, then renamed The Natural Snack and changed to a cafeteria. A few people did experiments with miso but it never got to a commercial scale in part because of persistent rumors that Lima Foods was going to start making it.

By the late 1970s soyfoods were growing in popularity in the UK. Two separate groups promoted them; the vegetarians and animal rights people (who liked TVP), and the natural foods and macrobiotic people. Marigold Foods also used TVP in the mid-1970s.

Much of important pioneering commercial work with soyfoods in Europe was done by macrobiotic groups in the Netherlands and Belgium. Bill often went there to teach in 1974-79. Tofu, and later tempeh, were emphasized by groups such as Manna in Amsterdam and De Brandnetel in Antwerp. Macrobiotics was much more active in the Lowlands than in England.

The Sams brothers later started Whole Earth as a marketing company for their jams. They sold it fairly soon. Gregory Sams (disabled) is no longer in the food business; he runs The Chaos Shop in London which sells photographic reproductions of computer-generated chaos patterns. Greg started Realeat Co. and now may be with the Haldane Foods Group. Address: Director, Nova Inst., P.O. Box 4648, Estes Park, Colorado 80517. Phone: 303-586-6265.

1389. Peterson, Greg; Barnes, Stephen. 1991. Genistein inhibition of the growth of human breast cancer cells: Independence from estrogen receptors and the multi-drug resistance gene. *Biochemical and Biophysical Research Communications* 179(1):661-67. Aug. 30. [22 ref]

• **Summary:** Genistein was found to be a potent inhibitor (in test tubes) of the growth of all 3 human breast cancer cell lines examined; biochanin A and daidzein were found to be weaker growth inhibitors. The isoflavone Beta-glucosides, genistin and daidzin, have little effect on growth.

The “soy molasses” used in this experiment was a gift of ADM. Genistin and daidzin were isolated from soy molasses by fractional crystallization and by adsorption chromatography, respectively. Their aglucones, genistein and daidzein, were prepared by hydrolysis (with hydrochloric acid) in methanol.

Note: This is the earliest soy-related document seen (May 2017) with the term “estrogen receptors” (or “estrogen receptor”) in the title. Address: Depts. of Biochemistry and Pharmacology, Univ. of Alabama at Birmingham, Birmingham, Alabama 35294.

1390. **Product Name:** Granose Vegetarian Wholefood Kitchen Vegetarian Sausages.

**Manufacturer’s Name:** Granose Foods Ltd.

**Manufacturer’s Address:** Stanborough Park, Watford, Herts., WD2 6JR, England.

**Date of Introduction:** 1991 August.

**Ingredients:** Water, textured defatted soya flour (defatted soya flour, iron, thiamin, riboflavin, vitamin B-12), hydrogenated vegetable oil, rusk, stabiliser (methyl cellulose, of plant origin), sea salt, hydrolysed vegetable protein, herbs, spices, colour (beetroot red).

**Wt/Vol., Packaging, Price:** 270 gm paperboard box.

**How Stored:** Frozen.

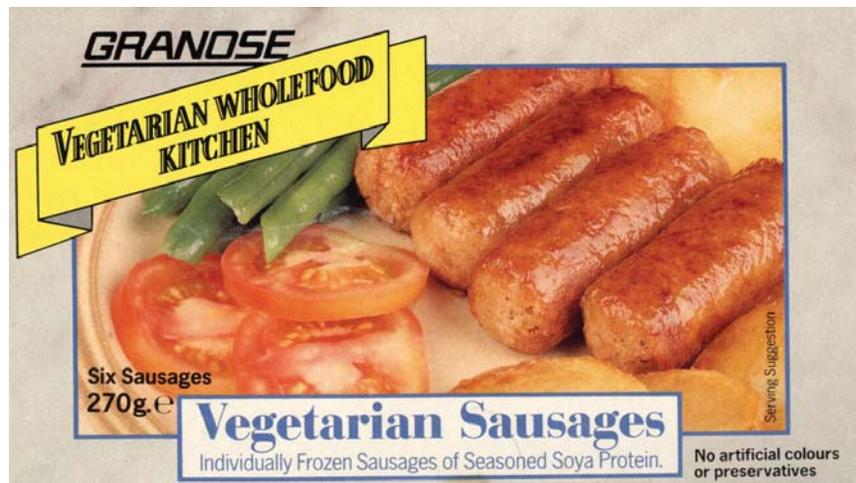
**Nutrition:** Per 100 gm.: Energy 190 kcal (calories; 790 kJ), protein 6.9 gm, carbohydrate 12 gm, fibre 4.5 gm, fat 13 gm.

**New Product–Documentation:** Part of label sent by Leah Leneman. 1992. Jan. 2. 6.5 by 3.75 by 1.12 inches. Black, blue, white, and yellow on gray. Color photo of browned sausages on a plate with sliced tomatoes, green beans, and sliced browned potatoes. “Individually frozen sausages of seasoned soya protein. Six sausages. No artificial colours or preservatives.”

1391. Rabheru, Neil. 1991. New developments with Unisoy, soymilk, and Haldane Foods in England (Interview). *SoyaScan Notes*. Sept. 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Unisoy was acquired by the Haldane Foods Group on 21 Dec. 1990. This has proved to be a very positive development for Unisoy. It is a great honor and very satisfying for Neil to be part of the same team with Dwayne Andreas and Peter Fitch, because both are very forward looking, energetic, and supportive men. The company now makes only soymilk. Other companies in the Haldane Foods Group now make the other soy products that Unisoy used to make—which is more efficient. For example, Genice Foods Ltd. makes soy margarine, yogurts, and ice creams. Unisoy plans to expand into a larger plant, probably at a new location. That phase, which will begin within 12 months, will involve an investment of £3 to £4 million. He is presently meeting with APV in connection with a new soymilk plant. Unisoy has not launched any new products since mid-1990. Neil has been too busy absorbing the Granose line into his production. Unisoy is now making all the soymilk that Granose used to buy from DE-VAU-GE [in Germany], to use in continuing the Granose line of products that contain soymilk. Thus the Unisoy/Haldane now makes the profit that DE-VAU-GE used to make.

The acquisition of Granose by the Haldane Foods group was the most brilliant move one can imagine. 90% of the products that Granose was buying from other companies can be manufactured within the Haldane Foods Group. Granose’s best products included their margarine, soymilk, ice cream, and yogurt. Peter Fitch deserves the credit for this stroke of genius.



The Haldane Foods Group now sells 4 soymilk brands, all now made by Unisoy: So Good (which used to be purchased from DE-VAU-GE; Sanitarium Foods in Australia only registered their brand in Australia and New Zealand), Granose, Unisoy, and White Wave. Neil believes that Unisoy makes the best-tasting soymilk in Europe today. Recently there was an independent magazine survey of all soymilks on the market and the Granose brand made by Unisoy won first, second, sixth, and ninth places. The UK soymilk market is extremely competitive and the prices are much lower relative to cow’s milk than they are in the USA. On average at all retail outlets, cow’s milk retails for about £0.50 per liter versus £0.59 to £0.79 per liter for soymilk. Thus soymilk in the UK retails for about 38% more than cow’s milk.

Note: In the USA, cow’s milk retails for about \$0.72/liter and soymilk retails for about \$1.86/liter or about 2.6 times as much as cow’s milk. The current exchange rate is 1.79 U.S. dollars = 1 British pound. Thus U.S. cow’s milk would sell for £0.40/liter (20% less than British cow’s milk) and soymilk would sell for £1.04/liter (about 45% more than British soymilk).

In the UK most of the soymilk is sold in the multiples (supermarkets) in half liters (500 ml) cartons, and that is where the greatest growth is. There, soymilk is only about 20% more expensive than cow’s milk. (Note: In the USA very little soymilk is sold in supermarkets.)

In the UK, Provamel (made by Alpro in Belgium) has about 42% of the total soymilk market. The four brands made by Unisoy have about 35-37%. The remaining 21-23% is divided among Sunrise, Plamil, and a few others. There is very strong soymilk brand loyalty in the UK.

Unisoy increasingly refers to itself as “the soymilk division of Haldane Foods Group.” The “Milk ‘n’ By-Products Ltd.” part of the name will be dropped very shortly.

The last part of the soyfoods market that the Haldane Foods Group will attempt to capture is tofu, since Cauldron Foods has a very big lead on Haldane in this market. The Granose line of dry mixes used to compete directly with the

Haldane Food Group's Hera line. Now all these products are made at one location.

The relationship between ADM, British Arkady, and the Haldane Foods Group has changed. The Haldane Foods Group is no longer part of British Arkady; both are now on the same level on the organization chart, and both report directly to ADM's European headquarters (ADM International Ltd. in England; John R. Mahlich, managing director). Peter Fitch used to work for British Arkady before the Haldane Foods Group was formed. Address: Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430 6329.

1392. Rabheru, Neil. 1991. The early days of the soymilk market in England, Soya Health Foods and Michael Cole (Interview). *SoyaScan Notes*. Sept. 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Michael Cole deserves full credit for getting soyamilk into supermarkets (multiples) in the UK. Vandemoortele was smart in capitalizing on his work to put themselves in their present strong position. It is sad that Soya Health Foods did not support Michael by investing in better technology to give a better quality product. In the early days, Soya Health Foods had everything in their grasp. If they had played their cards right, Unisoy would not be here today, and Vandemoortele might not even be in the UK. The principal(s) of Soya Health Foods were either too hesitant or not smart enough to take the necessary risks. He was content making money milking the cow (so to speak), never mind when the cow drops dead. Michael left the company out of frustration. Michael is an outstanding salesman.

Neil is absolutely certain that Michael Cole has never been involved with John Holt. Neil thinks that Michael Cole's first involvement with soyfoods in the UK was with Soya Health Foods (Sunrise). Neil spoke with Michael Cole 3 weeks ago; he is back in the UK trying to market some spray-dried organic tofu and soymilk. Neil does not know the source. Address: Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430 6329.

1393. Archer Daniels Midland Co. 1991. Annual report. P.O. Box 1470, Decatur, IL 62525. 33 p. Sept.

• **Summary:** Net sales and other operating income for 1991 (year ended June 30) were \$8,468 million, up 9.2% from 1990. Net earnings for 1991 were \$466.7 million, down 3.5% from 1990. Shareholders' equity (net worth) is \$3,922 million, up 9.8% from 1990.

"Foreign oilseeds operations were strengthened with the acquisition of a major softseed plant in Erith, U.K., and several plants in Canada. Soy protein facilities currently being added to the Europoort plant in The Netherlands should be in operation by year's end and a marketing

arrangement to supply Loders Croklaan, B.V., with soy protein concentrate gives the plant a good production base to begin operations."

"ADM now operates 136 U.S. processing plants and owns, or has an ownership interest in, 34 foreign plants in seven countries. The Company 149 terminal, country, and river grain elevators." A 2-page color photo (p. 2-3) shows "ADM's Europoort plant, near Rotterdam, the world's largest soybean processing facility. Construction is underway for the addition of a vegetable oil refinery, soy protein plants and a second cogeneration unit." ADM's "oilseed processing operations operated at lower profit levels. Export margins were reduced due to heavily subsidized South American and European oilseed product sales."

"The protein specialties division expanded its position as the world's largest supplier of value-added soy proteins this year. Construction began on a facility at Europoort to produce soy protein concentrates, isolated soy proteins and the specialized raw material from which these products are formulated. The facility will serve the growing demand in Europe and the USSR for food and animal feed ingredients.

"ADM will produce a line of soy protein concentrates which Loders Croklaan will market to the animal feed industry in Western Europe. The combination of ADM's production technology and Loders Croklaan's leadership position in the animal feed ingredient market will provide a major improvement in efficiency. Products will be supplied from the Europoort facility.

"Consumer acceptance of the all-vegetable protein food item, Midland Harvest's Harvest Burger, has been encouraging and exceeds expectations. This low-fat, cholesterol-free, reduced calorie product is being sold in selected U.S. markets and in several international markets, notably England and other European Community countries, the USSR, Czechoslovakia, Finland, Mexico and Canada.

"Haldane Food Groups acquired two additional companies: Granose Foods Ltd., a pioneer in the health food industry, and Unisoya [on 21 Dec. 1990], a soya milk production company. Additional bottling capacity was installed at Saucemasters Limited when the company moved operations to a larger facility shared with Snackmasters Limited, a newly formed company manufacturing snack meals. These TVP-based products are used with either noodles or rice and are sold through supermarkets and health food stores. Genice Limited added more yogurts and non-dairy ice creams to its product range. Frozen meals from both Vegetarian Cuisine Limited and Vegetarian Feasts Limited increased their market share. Production at the leased Coventry factory was transferred to the Granose factory at Newport Pagnell, where additional land is available for further expansion."

Page 32 lists the many ADM divisions worldwide. In Europe, key soyfoods-related divisions are: The British Arkady Co. Ltd. (William Pringle, Division Director),

and ADM International Ltd. (John R. Mahlich, Managing Director). Both are located in the UK. Note: The Haldane Foods Group (Peter Fitch, Managing Director), which is currently under British Arkady, will soon become an independent division. Since 1985 Peter Fitch and John Mahlich have skillfully acquired 11 of England's most important natural-, vegetarian-, and soyfood manufacturing companies to make the Haldane Foods Group unique in the world as a professional, efficient, and innovative group with a very promising future in a rapidly growing market.

Note: In Dec. 1990, ADM started making soy protein concentrates at its plant in Europoort, Netherlands. Address: Decatur, Illinois.

1394. Archer Daniels Midland Co. 1991. Introducing Midland Harvest: The great taste of good health! (Leaflet). Decatur, Illinois. 28 x 11 cm. Catalog.

• **Summary:** This full-color dome-shaped leaflet describing the Midland Harvest products comes in the shape of a vertically-oriented rectangle that is rounded at the top. It is not a mail order catalog. Color photos (p. 1) show a Harvest Burger, Taco Filling 'n Dip, and Burger 'n Loaf. At the bottom are written: Cholesterol free. Low fat. High protein. Low calories. Dietary fiber. Microwaveable.

The two inside panels show the four frozen and four shelf stable dry mix Midland Harvest products. Frozen: Harvest Burgers in Original, Italian Style, and Taco Flavors plus Breakfast Patties—Sausage style. Shelf Stable: Burger 'n Loaf in Original, Italian Style, and Herbs & Spice, plus Taco Filling 'n Dip. "Consumers are buying healthier foods: 4 out of 10 consumers have changed their eating habits because of nutritional concerns. 98 million Americans have a cholesterol count over 200." In these healthy products, less than 30% of the calories come from fat. "Complete marketing support: An \$18 million national television advertising campaign. Professional in-store demonstrations. Trade and merchandising allowances available. Colorful, eye-catching, free-standing POP pieces that sell, sell, sell! Newspaper ROP (Run of Press = newspaper ad), Sunday FSI (free standing insert), and demo coupons.

The back panel explains the products that are available in food service packs, by mail order, or for the retail trade, with phone numbers for the last two categories.

Talk with Lee Lensch of ADM. 1994. March 4. This promotional piece was developed by ADM for use as a handout at trade shows to give to supermarket and foodservice buyers who came by the ADM booth. This unrelated to Harvest Direct. Address: Decatur, Illinois. Phone: 1-800-637-5850.

1395. Bates, Dorothy R. 1991. The TVP cookbook: Using the quick-cooking meat substitute. Summertown, Tennessee: The Book Publishing Co. 96 p. Illust. Index. Sept. 22 cm.

• **Summary:** Contents: Introduction. Nutritional information.

Ingredients. Breakfast. Appetizers. Soups. Sandwiches. Main dishes. Desert.

This vegan cookbook is devoted exclusively to TVP, which is quick and easy to prepare, and has all the healthful qualities of other soyfoods—but without the fat. TVP (which stands for "textured vegetable protein") is a registered trademark of the Archer Daniels Midland Company, Decatur, Illinois. TVP comes in two textures: small granules and larger chunks. Note: The publisher got ADM's permission to use the TVP trademark, and ADM is now very excited with the book. Address: Summertown, Tennessee.

1396. Kahn, E.J., Jr. 1991. Supermarketer to the world: The story of Dwayne Andreas, CEO of Archer Daniels Midland. New York, NY: Warner Books. viii + 320 p. Illust. Index. 24 cm.

• **Summary:** The colorful, carefully researched story of Dwayne Andreas, the 73-year old CEO of the largest agricultural processor in the USA. The success he has made of ADM makes "the better-known success stories of Xerox and IBM look like kid's stuff. Andreas has multiplied revenues 25 times over (from \$323 million to \$7.9 billion) since taking the Archer Daniels Midland helm in 1965—en route converting his own \$1,500 investment into \$180 million. His sales staff produce at an annual rate of three quarters of a million each. He doubles ADM profits every five years with the regularity of a Swiss clock. And since the Bush election, he's hoisted revenues by about a billion dollars a year. All of this with long-term debt 30 percent less than cash on hand...

"But there's a lot more than numbers to Dwayne Andreas. He's known by insiders as the new Armand Hammer. When Mikhail Gorbachev met Tip O'Neill, the Soviet premier greeted him with, 'I hear you know my friend Dwayne Andreas.' He is an almost mystical guru to the power elite, yet he is little understood by professional analysts."

Page 59: "Dwayne's father and mother, Reuben Peter Andreas and Lydia Barbara Stoltz, were both born in 1882 to strict Mennonite families, a couple of months apart and in Illinois towns—he in Mideville, she in Sterling—a few miles apart. They were married in Sterling on Nov. 27, 1902, and not long afterward moved to Minnesota. She was... small in stature. The tallest of her five sons stood at five feet eight inches... While raising the boys and a single girl—Dwayne, born on March 4, 1918, was next to the last of the lot..." Lydia Andreas died in 1938 on Mother's Day [the second Sunday in May].

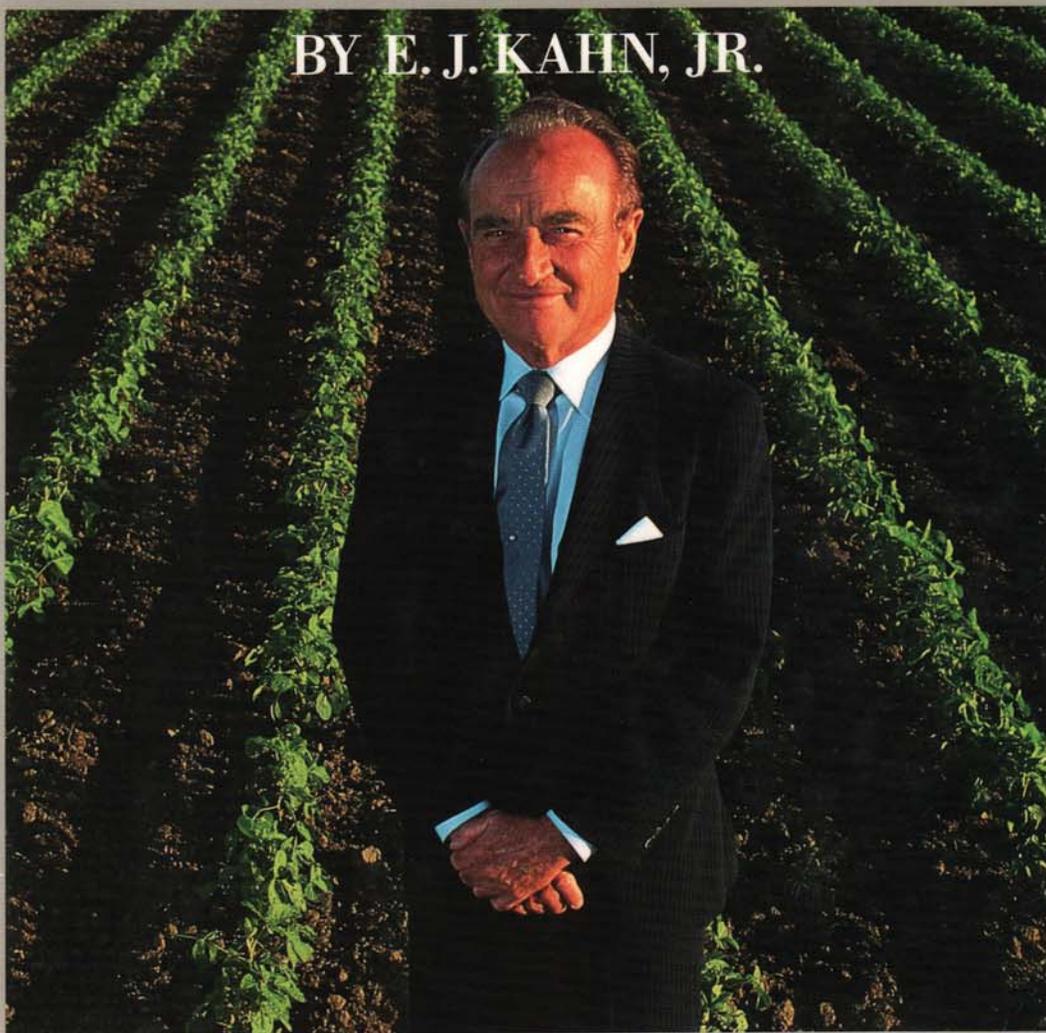
Page 70: In 1935 Dwayne entered Wheaton College in Illinois. But near the end of his sophomore year he dropped out, concluding his formal education. Moreover he got married when he was 18 [ca. 1937] and she 3 years older, to Bertha Benedict, whom he met at Wheaton. "That youthful union was short-lived and ended in divorce, but it

**“ANDREAS IS AN UNSUNG AMERICAN HERO.”—Thomas P. “Tip” O’Neill**

**THE STORY OF DWAYNE ANDREAS  
CEO OF ARCHER DANIELS MIDLAND**

# **SUPERMARKETER TO THE WORLD**

**BY E. J. KAHN, JR.**



did produce daughter Sandra, later McMurtrie and Mother Teresa's faithful acolyte." Note: Sandra first went to India in 1981 with a friend who worked for Catholic Relief Services. In Calcutta they met Mother Teresa—the celebrated Catholic nun.

Note 2. After Bertha and Dwayne Andreas were divorced, Bertha later married B.C. Kruidenier, to whom she remained married until her death—as shown by her obituary (cited elsewhere).

Page 71: Another and ultimately more important reason for dropping out of college was to go into business with his father. Since 1927 the firm's name had been "Reuben's & Son" [or "R.P. Andreas & Son" the son being Albert]. In the mid-1930s, Reuben took in 3 more sons, Osborn, Glenn and Dwayne and the company was renamed. Lowell, the youngest of the sons, who was still in high school, came in later. "Dwayne, not yet twenty, was put in charge of sales promotion," and soon annual sales reached \$1 million.

In 1936 the Andreas moved their family milling company (named R.P. Andreas & Sons) to Cedar Rapids, Iowa (from Lisbon, Iowa), and renamed it Honeymead Products Co. Dwayne "came under the tutelary spell of one of his Jewish mentors, Joseph Sinaiko, a leading soybean processor." The two became close personal friends. Joe, who was 27 years older than Dwayne, owned Iowa Milling Co. in Cedar Rapids. Years later Andreas said of Sinaiko: "A very classy guy, and the best soybean processor of that era."

In 1936, Lowell Andreas was in charge of soybean processing at Honeymead and Dwayne ran sales and transportation. But Dwayne soon became executive officer.

In Aug. 1937 the Iowa Securities Commission authorized Honeymead to do a public stock offering. The company's net worth was appraised at \$24,200. The Andreas kept most of the stock for themselves—but the value rose rapidly. Also in 1937 Dwayne got a pilot's license and bought a Ercoupe plane—so he could expand his sales territory and decrease the time it took him to cover it.

Page 78: From 1938 to 1945 Honeymead grew steadily, with Dwayne at the helm. Then in June 1945 Dwayne's draft classification was changed to 1A. In anticipation of being called into the military, he sold 60% of the family's Honeymead holdings to Cargill. Dwayne was now age 27 and his personal sale of the proceeds from the sale was about \$1.5 million. Soon the war ended and Dwayne was not drafted, so Cargill invited him to become general manager of the former Honeymead plant at Cedar Rapids, Iowa—with a salary of \$25,000 a year. Dwayne accepted the offer and ended up working for Cargill for seven years, eventually rising to vice president in charge of soybean and linseed-oil operations.

Andreas has said that "Except for nuclear war, world hunger is the world's biggest threat to peace."

Page 80: "Cargill was based in Minneapolis and, while there Andreas, by now separated from his [first] wife,

became an increasing well known bachelor about town." He met and began to court Inez Snyder, a diminutive (5'2") blonde from Earlham, Iowa. Her first marriage broke up and she had a five-year-old daughter named Terry. Before the year was out [year not given, around 1947] Dwayne was divorced and Inez and he were married.

Page 129: Michael Andreas is the only child of Dwayne and Inez, who by 1991 had been married for a little more than 40 years. By 1990 Dwayne and Inez had nine grandchildren [p. 123].

On the cover is a nice color photo of Andreas standing in front of a field of soybeans. Andreas was born in 1918. The author, Ely Jacques Kahn, was born in 1916. Portions of this book appeared, in considerably, different form, in *The New Yorker*. Address: Writer for The New Yorker.

1397. **Product Name:** Granose Tofu Paté [Tomato, Herb, or Mushroom]. Relaunched and renamed Granose Vegetarian Patés in late 1992.

**Manufacturer's Name:** Granose Foods Ltd.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire, MK16 9PY, England. Phone: (0908) 211311.

**Date of Introduction:** 1991 October.

**Ingredients:** Incl. organic tofu, vegetable oils and fats, spices and seasonings.

**Wt/Vol., Packaging, Price:** 200 gm squeezable tubes.

**How Stored:** Shelf stable; refrigerate after opening.

**New Product—Documentation:** SoyaFoods (ASA, Europe). 1991 2(2):7. "Tofu paté's from Granose." The patés have a shelf life of 9 months unopened and will keep for up to 4 weeks refrigerated after being opened.

Spot in SoyaFoods. 1992. Autumn. p. 5. "Vegetarian Cheese Spreads and Patés in a Tube." The launch of Granose's 3 new cheese spreads "coincides with the relaunch of Granose Vegetarian Patés, with improved recipes and smoother textures." Soya flour is now used in place of tofu. The name of one of the three flavors has been changed to Italian Style Tomato, and the tube has been reduced in size to 150 gm. One tube retails for £1.15.

1398. **Product Name:** Midland Harvest Sloppy Joe Fixin's.

**Manufacturer's Name:** Harvest Direct, Inc. Made in Decatur, Illinois, by Archer Daniels Midland Co.

**Manufacturer's Address:** P.O. Box 4514, Decatur, Illinois 62525. Phone: 800-637-5850.

**Date of Introduction:** 1991 October.

**Ingredients:** Soy protein concentrate [textured], vinegar powder (maltodextrin, distilled vinegar), dry onions, partially hydrogenated corn oil, modified food starch, dry red and green peppers, spices, sugar, dry worcestershire sauce, dry molasses, natural flavor, natural smoke flavor (maltodextrin, salt, natural flavors, modified food starch, corn syrup solids), garlic powder, citric acid, zinc oxide, niacinamide,

ferrous sulfate, copper gluconate, vitamin A palmitate, calcium pantothenate, thiamine mononitrate (vitamin B-1), pyridoxine hydrochloride (vitamin B-6), riboflavin (vitamin B-2), cyanocobalamin (vitamin B-12).

**Wt/Vol., Packaging, Price:** 4 oz foil pouch.

**How Stored:** Shelf stable.

**Nutrition:** Original: Per 0.8 oz dry (5 servings per packet): Calories 80, protein 8 gm, carbohydrates 8.8 gm, total dietary fiber 1 gm, fat (total) 1.7 gm (saturates 0.5 gm, monounsaturates 1.1 gm, polyunsaturates 0.1 gm), % calories from fat 19, cholesterol 0 mg, sodium 165 mg, potassium 360 mg.

**New Product–Documentation:** Talk with Lee Lensch of ADM. 1991. Dec. 16. This product is sold only through ADM's direct mail company named Harvest Direct. The company sells only ADM's dry mixes. This product was introduced in Oct. 1991. The 4 oz of dry mix makes about 16 oz (1 lb) of finished product. Add water plus 4 oz tomato sauce.

Ad in *Vegetarian Times*. 1992. Jan. p. 16. "Harvest's got it!" "Midland Harvest now comes in seven flavors: Original, Taco, Herbs and Spice, Curry, Italian, Sloppy Joe Fixin's, and Chili Fixin's. Call Harvest Direct at 1-800-835-2867 for a free 16-page catalog."

Label sent by ADM. 1991. Dec. 17. 5.25 by 3.75 inches. Self adhesive. Reddish brown on white. "Cholesterol free. Low fat. All-vegetable protein. Microwaveable. A delicious, healthy Sloppy Joe based on a savory blend of vegetable protein concentrate and traditional Sloppy Joe flavors. The only ingredients you add are water and tomato sauce. The result is a tasty 'ground meat' type Sloppy Joe."

1399. **Product Name:** Midland Harvest Chili Fixin's.

**Manufacturer's Name:** Harvest Direct, Inc. Made in Decatur, Illinois, by Archer Daniels Midland Co.

**Manufacturer's Address:** P.O. Box 4514, Decatur, Illinois 62525. Phone: 800-637-5850.

**Date of Introduction:** 1991 October.

**Ingredients:** Soy protein concentrate [textured], spices, partially hydrogenated corn oil, dry onions, masa flour, maltodextrin, hydrolyzed vegetable protein, natural flavor, paprika, salt, dry garlic, zinc oxide, niacinamide, ferrous sulfate, copper gluconate, vitamin A palmitate, calcium pantothenate, thiamine mononitrate (vitamin B-1), pyridoxine hydrochloride (vitamin B-6), riboflavin (vitamin B-2), cyanocobalamin (vitamin B-12).

**Wt/Vol., Packaging, Price:** 4 oz foil pouch.

**How Stored:** Shelf stable.

**Nutrition:** Original: Per 0.8 oz dry (5 servings per packet): Calories 88, protein 8.8 gm, carbohydrates 7.2 gm, total dietary fiber 1.6 gm, fat (total) 2.5 gm (saturates 0.8 gm, monounsaturates 1.6 gm, polyunsaturates 0.1 gm), % calories from fat 25.4, cholesterol 0 mg, sodium 225 mg, potassium 425 mg.

**New Product–Documentation:** Talk with Lee Lensch, 1991, Dec. 16. This product is sold only through ADM's direct mail company named Harvest Direct. The company sells only ADM's dry mixes. This product was introduced in Oct. 1991. To the 4 oz of dry mix, add water, 8 oz of tomato sauce, and 16 oz of kidney (or other) beans to make 2½ pounds of chili.

Label sent by ADM. 1991. Dec. 17. 5.25 by 3.75 inches. Self adhesive. Brown on white. "Cholesterol free. Low fat. All-vegetable protein. Microwaveable. A delicious, healthy Chili based on a savory blend of vegetable protein concentrate and traditional chili flavors. The only ingredients you add are water, tomato sauce, and kidney beans. The result is a tasty 'ground meat' type chili with beans."

1400. Hinman, Bobbie; Snyder, Millie. 1991. *Lean and luscious and meatless*. Prima Publishing, P.O. Box 1260, Rocklin, CA 95677. xv + 463 p. Foreword by Benjamin Caballero, MD, PhD, Director, Center for Human Nutrition, The Johns Hopkins University. Illust. by Vonnie Crist. Index. 22 cm.

• **Summary:** This is the third book by the producers of the best-selling *Lean and Luscious* series of meatless cookbooks. Each of the recipes is simple and straightforward, and accompanied by a nutritional analysis. The book's main theme is: Eat less fat and more fiber.

The section titled "Cooking legumes" (p. 144) states that after soaking whole soy beans overnight and then draining, they should be cooked for 2 to 3 hours.

The index contains 24 entries for tofu and 2 entries for miso. Tempeh and TVP (textured vegetable protein) are not mentioned. Address: 1. Pioneer in the field of low-fat cooking; 2. Helper of people with weight control problems.

1401. *SoyaFoods (ASA, Europe)*. 1991. ADM targets Europe. 2(2):3. Autumn.

• **Summary:** "The Archer Daniels Midland Company has announced the reorganisation of its European corporate headquarters to the ADM offices in Erith, Kent, near London. ADM International Ltd has been formed to coordinate the company's European sales of specialty industrial food and feed ingredients. Corporate activities will be centralised at Erith [on the River Thames just east of London] with administration activities relocating from offices in Rotterdam, Netherlands and Hamburg, Germany."

1402. *SoyaFoods (ASA, Europe)*. 1991. Changes for Haldane Foods. 2(2):2. Autumn.

• **Summary:** The Haldane Foods Group has acquired Unisoy Milk 'n By Products Ltd. of Stockport, UK, the manufacturers of soymilk, soy yogurts, and Maranellis soy ice cream. Following the Group's other recent acquisition of Granose Foods, the Haldane Group's headquarters have been moved to Granose Foods' premises at Howard Way, Newport

Pagnell, Bucks, UK. Phone: 0908 211311. The move integrates the administration, sales, and accounts functions. Production at the Haldane factory is unaffected. Note: The Haldane Foods Group had formerly been located at Barrow Upon Soar, in Leicestershire.

1403. Harvest Direct, Inc. 1991. Harvest Direct winter catalog, 1991-92: All natural products and unique gifts for the vegetarian lifestyle (Mail order catalog). Decatur, Illinois. 22 cm.

• **Summary:** The front cover shows a lady in a blue shirt against a purple background holding a plate containing a vegetarian burger with all the trimmings. Additional cover text reads: "Harvest Burgers, vegetarian gift baskets, and more! Three new flavors of Harvest Burger [Sloppy Joe Fixin's, Italian Burger 'n Loaf, and Chili Fixin's], the great taste of good health, page 3. Call 1-800-8-Flavor for home delivery! Midland Harvest, Midland Harvest Burger, Midland Harvest Burger 'n Loaf, Midland Harvest Fixin's and TVP are the registered trademarks of Archer Daniels Midland Company, and are used herein with its consent."

On the inside front cover, "A letter to our friends," from Lea Stutkins, business manager, states: "This is the first issue of a rather unconventional catalog that we hope you'll come to rely on for foods and other items that fit the health-conscious lifestyle. We specialize in gourmet vegetarian foods." Recipes for using the products are scattered throughout the catalog. Address: P.O. Box 4514, Decatur, Illinois 62525-4514. Phone: 1-800-835-2867 (1-80-8-FLAVOR).

1404. Bolduc, Bill. 1991. Current work with organic foods and soyfoods (Interview). *SoyaScan Notes*. Dec. 8. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** His company is in the process of developing an organic TVP. It is presently produced in Illinois under contract (on a test basis) and he hopes to have the product ready for sale by early 1992. He is in serious discussion with a major player in the grain industry, who he hopes will become his partner. Bill's company will do the R&D and marketing, not the manufacturing. No name for the product has yet been determined, but he generally refers to it as "Organic TSP" or "Organic Textured Soya Protein." He doesn't like the letters "TSP," which remind many people in the food industry of trisodium phosphate (a crystalline compound used especially in cleaning compositions). (Shurtleff suggests that Bolduc consider licensing the rights to call it "Organic TVP" from ADM via Richard Burket.) He is talking with Health Valley about the product and has a major player in England that will be ready by early 1992. The texture is similar to ADM's mince (granules).

His company is limiting itself to basic processing of the four major grain commodities grown organically in Ohio and neighboring states: soybeans, soft wheat, corn, and

oats. OPC which was just incorporated on 19 Sept. 1991, is already active and has products on the market. Before that, Bill was a broker. In Dec. 1990 OPC shipped its first truckload of organic wheat flour to Barbara's bakery—under the Organic Marketing label. He is now supplying Health Valley with all of the flour that is going into their fat-free products. He does not yet have any soy products on the market. But he is also looking at doing something with soymilk in Ohio.

Update: 1992 March 14. The development of organic TVP is coming along nicely. Bill has visited ADM in Decatur, and talked by phone with Roger Kilburn (who is head of Protein Specialties at ADM; a very nice man with a background similar to Bill's). He hopes to license TVP under the name "Organic TVP." They invited him to introduce the Midland Harvest line to the natural foods industry. Bill declined because of problems with ingredients but offered to help ADM improve their ingredients for the natural food market. Address: President, Organic Processing Corp., 3307 Clifton Ave., Cincinnati, Ohio 45220. Phone: 800-647-2326.

1405. **Product Name:** Berrydales Special Ices [Bitter Chocolate (Totally Vegan)].

**Manufacturer's Name:** Berrydales Ltd. (Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer's Address:** 5 Lawn Road, London NW3 2XS, England. Phone: 071-722-2866. Fax 071-722-7685.

**Date of Introduction:** 1991 December.

**Ingredients:** Soya milk, tofu, honey, apple concentrate, chocolate chips, cocoa.

**Wt/Vol., Packaging, Price:** 500 ml.

**How Stored:** Frozen.

**Nutrition:** Per 100 ml.: Energy 104 kcal (calories; 446 Kilojoules), protein 1.90 gm, total fat 2.71 gm (saturated fat 1.12 gm, polyunsaturated 0.73 gm), carbohydrate 18.4 gm including total sugar 17.19 gm.

**New Product—Documentation:** Berrydales newsletter. 1991. Dec. p. 3. "Berrydales no-cream ices—deliciously refreshing dairy free ices based on organic fresh tofu and soya milk. Low fat, low cholesterol, low calorie and vegetarian, in five exotic flavors—Honey Vanilla, Berry, Maple & Walnut, Ginger & Honey and—now totally vegan—Bitter Chocolate. Available in health food stores, delicatessens & selected Sainsburys nationwide."

Label sent by Genice Foods Ltd. 1994. Feb. 18. 3.75 inch round lid. 500 ml. Illustration of a flower against a light wood-grain background. "Lactose free. No animal products. Low cholesterol."

1406. Reeve, Stewart. 1991. Fast food delight: ADM's soy protein burger provides cholesterol-free, tasty treat. *Soybean Digest*. Dec. p. 40a.

• **Summary:** The first test market for ADM's Midland Harvest brand Harvest Burger began in April 1990 in 7

grocery stores, 2 cafeterias, 2 restaurants, and a hospital in four cities in central Illinois. The product is based on textured soy protein concentrate, to which are added various natural flavors and seasonings. The product comes in three forms: (1) Harvest Burgers are sold as frozen 3.2 oz patties in Original, Taco, Italian-style, and Sausage-Style flavors; (2) A dry mix, named Burger 'n Loaf, is sold in Original, Herb and Spice, and Italian flavors; and (3) a taco mix named Taco Filling 'n Dip. The products have the texture of ground meat. The big selling point is that all of these products are free of cholesterol. ADM then expanded its test market to Indiana, and is now expanding to Wisconsin and Minnesota. The product manager is Lee Lensch, ADM marketing specialist, who says "If the response is anything like in Illinois and Indiana, we're planning to go nationwide."

"The product has already proven itself in an export market. ADM introduced a similar product trademarked as the Veggie Burger to the Soviet Union in October 1989 at a food trade show in Moscow. Shipped as only the dry mix, Veggie Burgers are sold in Soviet grocery stores as the mix or served in restaurants as burgers. The Petina restaurant in Moscow now sells 4,500 Veggie Burgers a day, Lensch reports.

"The Veggie Burger is tailored to the tastes of Soviet consumers. 'For example, the Soviet Union product has 10% fat content rather than the 5% the U.S. has. They're looking for calories,' he explains."

1407. Hesseltine, C.W. 1991. Peoria, an international center of fermentation excellence. *Transactions of the Illinois State Academy of Science* 84(1-2):1-11. [11 ref]

• **Summary:** This paper was presented on 28 Sept. 1989 as the after-dinner address for the 50th Anniversary Celebration of the Peoria (Illinois) Branch of the American Chemical Society. Contents: First fermentations. Hiram Walker Co. (1816-1899; for many years they operated the world's largest bourbon whiskey plant in Peoria). Takamine. Northern Regional Research Center. Penicillin & Dr. Andrew Moyer. Penicillin—others (incl. Dr. Kenneth Raper). USDA's Agricultural Research Service (ARS) culture collection (which dates back to 1904). Polysaccharides. Mycotoxins. Fermented foods (especially soyfoods such as miso, shoyu, and tempeh). Fermentation in Peoria today (ADM uses the old Hiram Walker distillery to make fuel alcohol from corn). Honors and awards. References.

"Dr. Jokichi Takamine was the father of commercial enzymology and one of the pioneers of biotechnology. He was born in 1854 in Japan and received his Doctor of Pharmacology and Ph.D. in Engineering. He became very interested in Western concepts that would be useful to the Japanese but he also was interested in Japanese contributions to the West in science, industry and culture. In 1884 he married an American girl whose father helped him financially start the Takamine Ferment Company in Peoria

in 1890. This company's business was to produce 'diastase,' a mixture of glucoamylase and  $\alpha$ -amylase. This mixture of amylases was produced by the koji molds (*Aspergillus oryzae* and *A. soyae*) and it was here in Peoria that fungal amylase was first introduced to the West. In the production of alcohol from grain it is necessary to break down the starch to sugar, which is then fermented to alcohol. Up to this time the starch conversion step of grain was brought about by the use of malt produced by the germination of grains.

"In the Takamine process the malt was replaced by fungal  $\alpha$ -amylase and, therefore, was a process in direct competition with malt utilization. Apparently this new innovation was greeted with apprehension by the malt manufacturers. There was labor agitation and a propaganda campaign against Takamine. In 1894 the distillery where he worked was burned to the ground. Arson was suspected but never proven. The distillery which used fungal amylase was rebuilt, but the company dissolved the Takamine corporation and Takamine left Peoria in 1894. In 1894 Takamine obtained a U.S. patent on his enzyme diastase preparation called Taka-diastase.

"Later Takamine founded the Takamine Laboratories in the East [Clifton, New Jersey] and the Sankyo Pharmaceutical Company of Tokyo. He also isolated crystallized adrenaline at the same time that this was done by J. Abel at Johns Hopkins. Takamine obtained patents on adrenaline. He is also known for arranging for three thousand cherry trees for planting at the Tidal Basin in Washington. Recently a book on Dr. Takamine was prepared and printed by the Miles Company, which some years ago bought the Takamine Laboratories. The book contains his writings translated into English along side the original Japanese."

"The ARS Culture Collection is one of only two large culture collections in the USA, and its primary function is to find and maintain useful or potentially useful microbial and genetic taxonomic material. This collection dates back to 1904 when Charles Thom was hired by the USDA to investigate the mold cheeses. In making these studies, Thom secured several hundred strains of *Penicillium* and *Aspergillus* which became the nucleus of the ARS Culture Collection. At first Thom was at the Connecticut Agricultural Experiment Station, but in 1913 he moved to Washington, DC, taking his cultures with him. The oldest mold culture in the Collection is a strain of *Actinomucor elegans* isolated in 1892. Thom's collection had no formal recognition, and the story is told how Thom worked in the Laboratory on weekends to transfer his collection. In 1940 when the Fermentation Laboratory was established at NRRC, the Thom Collection was moved from Washington, DC, to Peoria and was formally recognized as one of the fermentation groups with Dr. K. Raper in charge. Dr. J. Wickerham joined the group to be curator of the Yeast Collection, and W.C. Haynes was selected to maintain a Bacterial Collection. Since then the number of curators has

increased from 3 to 6. Some famous private collections were added in 1940, including the Harvard Collection which had strains isolated before 1900." Address: 5407 Isabell, Peoria, Illinois 61614.

1408. Pelosi, Bruno; Christmann, Volker; Aepli, Beatrice. 1991. *Fantasievolle Sojakueche* [Imaginative soya cookery]. Kuettigen/Aarau, Switzerland: Midena Verlag. 94 p. Illust. (color photos). 21 cm. [Ger]

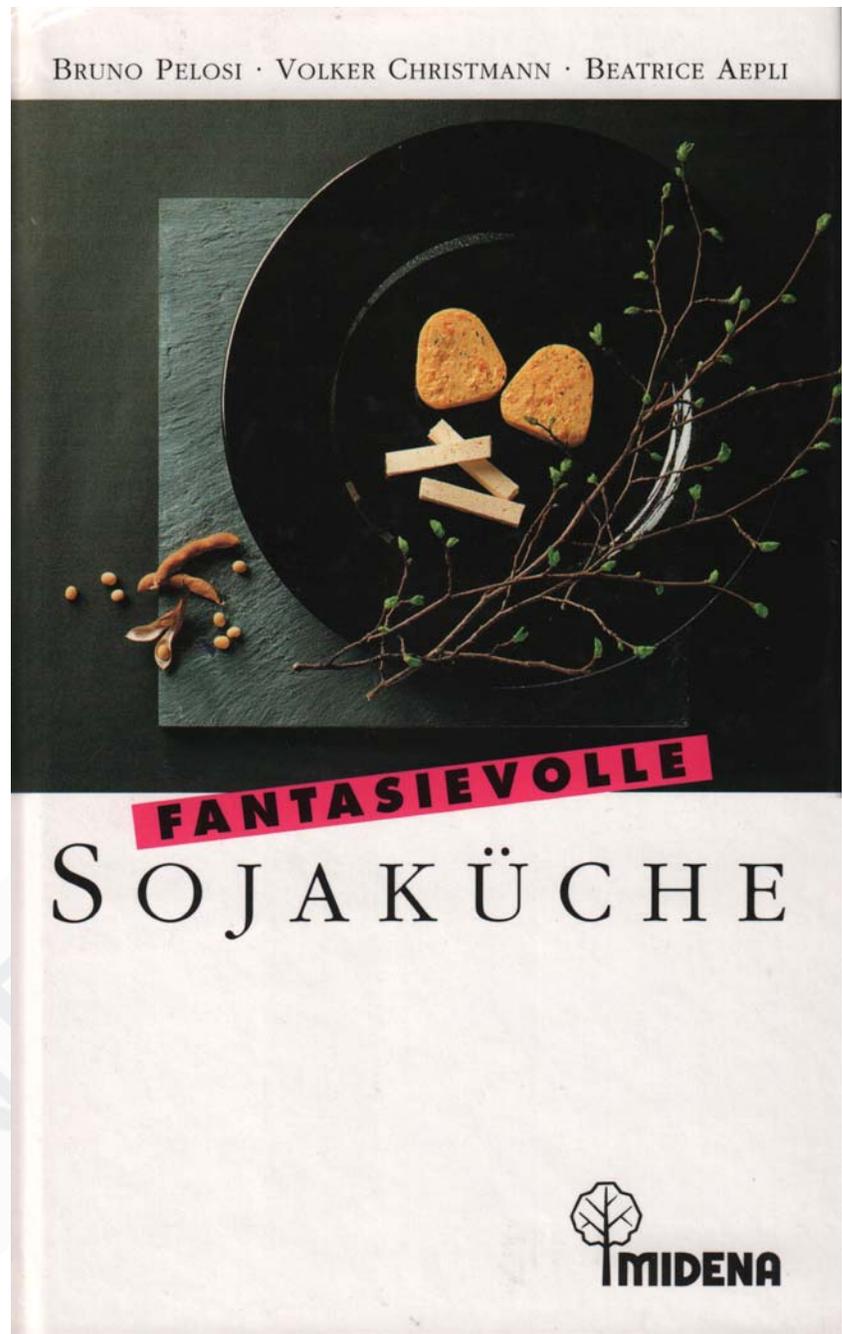
• **Summary:** This is a hardcover vegetarian cookbook. On almost every right-hand page facing a recipe is a glossy color photo of the finished dish.

Contents: What shall we eat tomorrow? Tofu and Yasoya (a sort of tofu burger developed by Baer Weichkaeserei AG in Kuessnacht am Rigi, Switzerland). Recipe table of contents: Salads, appetizers, soups, main dishes, desserts. A word about the recipes: tips and other information. Note: Each recipe is divided into ingredients, preparation, and a tip. Who dares, enjoys. Its been here for 4,983 years [the soybean has, supposedly; plus nutritional information]. Graph showing world population from 1650 to 2150; the soybean gives humans a chance. Meat or no meat; that is the definitive question. How the soybean came to the West (a history starting with Engelbert Kaempfer). A royal product: Liu An of Huainan, China. How to make tofu at home. The nutritional composition of tofu. Tofu contains practically no fat [sic]. It is easy to digest, a great diet food. The main tofu companies in Switzerland (only the company name and city are given). Tofu makers in Germany. Tofu makers in Austria. Yasoya, The tofu market. Why tofu products? Other types of soyfoods: Soy sprouts, fresh green soybeans, soy nuts, tempeh, miso, soy sauce, soymilk, soy flakes, whole soy flour, soy grits, texturized soy protein or TVP, soy oil.

Atop the rear cover: The future belongs to the soybean. Address: Switzerland.

1409. The Mail Order Catalog. Fall–winter 1991-2. Quality books. Vegetarian food products. 1991. P.O. Box 180, Summertown, TN 38483. Catalog.

• **Summary:** The book section of this mail order catalog contains listings for an excellent selection of vegetarian cookbooks, and books on animal rights, diet and nutrition, ecology, and native American cultures.



The vegetarian food products section offers TVP granules and chunks, Response textured soy protein concentrates (misleadingly called "Response TVP flakes"), soy powder (powdered soymilk), tempeh starter, nutritional yeast, and instant gluten flour. Address: Summertown, Tennessee. Phone: 800-695-2241.

1410. *Health Food Business* (London). 1992. Haldane Foods is facing a German food invasion. Jan. p. 5.

• **Summary:** Haldane Foods finds itself battling with the very church from which it purchased Granose Foods in Jan. (or Feb.) 1991. With that multi-million pound deal, Haldane

established itself overnight as Britain's major health food manufacturer. At the time, Peter Archer was managing director of Granose. "But now the German equivalent of Granose Foods [DE-VAU-GE], owned by the German branch of the Seventh Day Adventists, is launching itself in the UK against Granose with a range of similar products.

"The Germans have not only set up a UK company, but have also convinced Nigel Phillips, the Haldane Foods marketing and sales director, to become its managing director!"

A large color photo shows Graham Keen in front of the Granose offices and sign. He has joined the Haldane Foods Group as Sales and Marketing Director. For the previous 14 years he was sales director of Northumbrian Fine Foods.

1411. *Health Food Business (London)*. 1992. GranoVita launches 34 products and signs exclusive six-month deal with Brewhurst. Jan. p. 5.

• **Summary:** GranoVita UK will be launching 34 products in its first wave in Dec. 1991. In Jan. or Feb. 1992 they plan to add another dozen or so products to their line. Nigel Phillips, the company's managing director, is putting soya milk products at the forefront of GranoVita's launch. "The majority of the business Granose used to do with Germany was soya milk based. Once this was switched to the UK (after Haldane purchased Unisoy), then GranoVita felt they must compete in the UK." GranoVita has given sole distribution rights to the independent health food trade to Brewhurst for 6 months.

1412. *Health Food Business (London)*. 1992. Haldane Foods—the giant at the heart of the soya beanstalk. Jan. p. 12.

• **Summary:** "The Haldane Foods Group owes its existence to the invention of textured soya protein, which was first extruded in the United States back in the 60's.

"The patent was owned by ADM, and Haldane's present general manager Peter Fitch was their man in the UK, selling soya protein to British companies.

"Our biggest customer in those days was Direct Foods, down in Petersfield in Hampshire,' says Peter Fitch. 'When Direct Foods came up for sale in the early '80's, we bought it to develop beyond being just a supplier. We wanted to be part of not just growing the bean, but also developing healthy consumer products with it.'

"This initial purchase led to the acquisition of another company—Vegetable Feasts, who were making ready-made frozen vegetarian convenience foods.

"And then a bigger fish arrived on the market, with Haldane Foods of Loughborough. This had been set up by Brian Welsby to produce concentrated dried ready meals, again soya based.

"In Coventry, Vegetarian Cuisine were bedeviled with low sales but a skilled labour force, so this too was acquired and Vegetarian Feasts incorporated in it, as both companies

were producing similar lines.

"Thus was born the Haldane Foods Group, which now had two sites, Coventry supplying frozen foods and Loughborough dry goods.

"When Gregory Sams sold Realeat to Haldane, there was still surplus manufacturing capacity, but this quickly became less so, particularly at Coventry.

"With the acquisitions of Genice in North Wales, (producing non-dairy soy-based ices) and Kwaliti Foods in South Wales (producing Sauce and Snack Masters dishes such as pot noodles), Haldane moved into 'wet' food production.

"Shortly after this, Granose Foods, who had moved into a large new factory at Newport Pagnell, were finding trading difficult from their own premises, and so searched for one of their suppliers to acquire the business. Another, even larger, mouthful for Haldane to swallow.

"Over three-quarters of the Granose products were being made by outside suppliers, much of this abroad. By purchasing Unisoy at the same time as Granose, with a capacity of 5 million litres of soya milk a year, we were able to see that we could manufacture virtually everything ourselves,' said Peter Fitch.

"We closed Coventry and put it into Granose, and we still bus twelve staff back and forth from there each day. We now were able to concentrate all wet production at Newport Pagnell, and all dry at Loughborough, with 13,000 square feet there and 42,000 square feet at Granose.'"

"Peter Fitch admits taking on Granose caused Haldane's supply problems. 'We reeled for six months, but we are now out of our troubles. Our staff has settled in and our supply problems have been solved.'"

1413. **Product Name:** Crêpolette (Organic Pancakes) [Vegetable, Madras Curry, Leek, and Cheese].

**Manufacturer's Name:** Unisoy Milk 'n' By-Products Ltd. (Distributor).

**Manufacturer's Address:** Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire, England. Phone: 061-430 6329.

**Date of Introduction:** 1992 February.

**How Stored:** Refrigerated.

**New Product–Documentation:** SoyaFoods (ASA, Europe). 1990. 1(1):3. These products are scheduled to be launched in May 1990. Talk with Neil Rabheru of Unisoy. 1990. July 2. This product has not yet been launched. It is made by another company located in continental Europe. Unisoy has been appointed sole distributors in the U.K. It contains no Unisoy products and is not really a soya-based product, containing only 2-3% of soyamilk.

Talk with Neil Rabheru of Unisoy. 1991. Sept. 16. This product is scheduled to be launched in Feb. 1992 by the Haldane Foods Group; it is not yet ready and it is not known which brand it will bear. The artwork is ready.

1414. Whiteman-Jones, Michael. 1992. Soyfoods poised for growth: New mass-market interest, product development and consumer interest are driving sales higher than ever. *Natural Foods Merchandiser*. Feb. p. 18-19.

• **Summary:** Last year soyfoods were introduced to mass-market consumers by two of America's corporate giants. (1) Archer Daniels Midland Co. (ADM of Decatur, Illinois) introduced the vegeburger to show that a delicious food product could be made from soy. ADM marketing specialist Lee Lensch says the soy burger is doing very well in test markets in Indiana, Illinois, and Minnesota. Versions of the product are being advertised nationally in corporate TV spots and on local TV in test markets. Buyers who gave the products shelf space at chains such as Kroger, SuperValue and Cub Foods now report brisk sales. (2) Protein Technologies International in St. Louis, Missouri, a subsidiary of Ralston Purina, is test marketing a soy-based beverage named First Alternative in Phoenix, Arizona.

Peter Golbitz, president of Soyatech Inc., a consulting company in Bar Harbor, Maine, notes that since the 1980s, Japanese companies (such as Nichii Co.) have invested at least \$50 million in soyfoods manufacturing plants in the U.S.

"Retail sales of soyfoods are growing in America by about 5 to 7 percent a year, increasing to about \$657 million in 1990, Golbitz says. The most rapid expansion is for soy milk, which is growing at a rate of about 20% a year, and second-generation soyfoods which are growing at a rate of about 15%... Soy milk consumption in Australia, where it is sold in grocery stores like milk, is about 10 times what it is in this country."

Worldwide, consumption of soyfoods now averages about 1.7 kg/person/year, and is expected to rise to 2 kg or more by the year 2000. Taiwan is the world leader with 15.5 kg/capita/year of soy, followed by Japan at 11.1 kg. A world map and table (largely compiled from FAO Food Balance Sheets) shows "Soyfood consumption: Yearly average per capita (Amount of change from 1979 to 1988)." The following countries are listed in descending order of consumption in kg/capita: Korea 17.1 kg (2.4%). Taiwan 13.0 (37.0%). Japan 10.8 (6.7%). Indonesia 6.3 (57.4%). Hong Kong 3.8 (-22.0%). Saudi Arabia 3.6 (342.9%). China 3.4 (-5.6%). Paraguay 2.8 (50.0%). Malaysia 2.3 (102.2%). Thailand 1.6 (162.5%). Zimbabwe 1.6 (22.2%). United States 1.4 (33.3%).

1415. Associated Press (AP). 1992. Proposed Cargill plant with compete with AGP operation. *Sioux City Journal (Iowa)*. March 12. p. A14.

• **Summary:** Cargill's corn-milling division plans to build a corn processing plant (its 5th) in western Iowa or Eastern Nebraska. It would produce high fructose corn syrup and polymers used in biodegradable products. AGP of Omaha,

Nebraska, is considering building a \$300 million corn wet-milling plant in extreme southeastern South Dakota. Cargill and ADM are the two biggest U.S. corn processors.

1416. Nebraska Soybean Development, Utilization and Marketing Board. 1992. Meeting agenda. Jefferson City, Missouri. 2 + 4 p. March.

• **Summary:** This meeting took place on March 17-18, 1992 at the Cornhusker Hotel, Lincoln, Nebraska. Soy Diesel was on the agenda in four sessions. Present at dinner on March 17 were: John Campbell, AGP; Marc Berg, South Dakota, American Soybean Association Board of Directors; Scott Frederickson, ADM.

Attached is the following 4-page document (which see): Requested report to United Soybean Board on Soy Diesel, by Kenlon Johannes (March 1992). Address: Jefferson City, Missouri.

1417. Weissman, John. 1992. Pioneering work with seitan, Wheatmeal, and Tan Pops in America, 1974 to mid-1976 (Interview). *SoyaScan Notes*. March 31. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** John was probably the second person to make seitan commercially in the USA. He was working in a health food store named Panacea in the middle of Manhattan in New York City. He and his girlfriend baked homemade buckwheat-crust pies, and they could see that homemade foods sold very quickly at the store. He saw freshly made, unique foods as a potential market. On 13 June 1974 John turned 26 years old. That fall he moved to Boston and began to live with a macrobiotic couple who were his friends, Sakee (or Ronald) Israel and his wife, Fern Ross-Israel. John recalls that Fern was pregnant. [Note: Fern and Sakee had been married on 19 Oct. 1974 in West Roxbury, Massachusetts. Their first child, Kate, was born at home on 3 May 1975.] Sakee was a musician, who drove a taxi cab to make money. John was a dabbler with macrobiotics—and still is. Several months after John arrived in Boston, Fern told him that several people from the Erewhon retail store had told her that if someone were to make seitan, they thought it would sell well at the store. Fern had learned to make seitan either in a macrobiotic cooking class or from another woman in a study house. She knew seitan was hard to make, so she taught John and her husband how to make it in the form of little salty, gingery meatball-like chunks.

At the time, John had never heard of seitan before, but he does recall that an early seitan product named Tan Pops (seitan skewered on a bamboo stick and deep-fried in a breaded tempura batter) had been on the market in Boston, but was no longer; they were probably America's first commercial seitan product. John does not know who made Tan Pops nor when they were introduced. [Note: Tan Pops were introduced in March 1972 by Nik and Joanne Amartseff in Brookline, Massachusetts.] They had been sold

at the Erewhon retail store on Newbury St., but had been on the market for only about 6 months. John recalls hearing that the maker moved to Maine or New Hampshire after discontinuing Tan Pups in Boston.

John was a blues musician at the time, painting houses as a source of income. John had just been let go from a house painting job and he was desperate for money. Soon in late 1974 he and Sakee, as business partners, began making seitan in their apartment at 17 Dent Street in West Roxbury, and selling it in bulk (5-10 lb of chunks) to one macrobiotic study house where Pat Murray lived. She bought 5-10 pounds at a time. (She later owned a health food store in Newburyport, Massachusetts.) For fun, as a sort of joke, they named their fledgling business Gimme Some Food Co. but after a month or two, when their products began to sell, they changed the name to the Wheatmeat Company—since in late 1974 John coined the term “Wheatmeat” to refer to their seitan. His trademark registration says he first made seitan in May 1976, but he was making it commercially before that. Within a few weeks, in late 1974, he and Sakee began selling Wheatmeat in bulk to the Erewhon retail store and then to other health food stores (such as Organic Food Cellar). It was sold refrigerated, in the form of rather salty little gingery meatball-like chunks in a large glass jar. A customer or the store clerk would lift out the chunks with tongs. By early 1975 the Wheatmeat Co. introduced “Wheatmeat Sandwiches,” stuffed in pita bread in two flavors—one with homemade cole slaw (but no mayonnaise, using grapefruit juice instead of vinegar; Fern showed them how), another with tomatoes and lettuce; each had a sauce and was Saran-wrapped with a little paper label. John felt the sandwiches would have a broader appeal than plain macrobiotic Wheatmeat (seitan), but their main drawback was a short shelf life—only several days. Fairly soon they also began to sell Wheatmeat Cutlets in about 8-ounce polyethylene bags. Each piece was rolled flat. Later (about 1979) he introduced an unflavored, unsalted slab of wheat gluten, also labeled Wheatmeat, but with a different label and appearance (it was light tan instead of dark brown). It wasn't on the market for long because the shelf life was too short.

Next, in the spring of 1975, came Solar Burgers (although the name was not introduced until 1976). Based on information about protein combining in *Diet for a Small Planet* by Frances Moore Lappé, John began grinding cooked soybeans into the wheat gluten and selling the burger-like patties.

Then came Tan Pops, pieces of seitan that were skewered, breaded and deep-fried. In the spring of 1975, several months after they introduced the Wheatmeat Sandwiches to Erewhon, Fern recalls John and Sakee began to make Tan Pops in their home kitchen at 17 Dent Street and sell them in Boston. John only vaguely recalls making Tan Pops at Dent Street. Concerning the name of this product, John Weissman recalls (he is more than 50% sure) that he

coined the name Tan Pops (based on Tan Pups, a similar earlier product, of which John had tasted one or two) after he separated from Sakee Israel, had met the owners of Baby Watson Cheesecake Co., and was working with Robert Allen. The “Tan” came from sei-tan (*tan* means “protein” in Japanese), and the “Pop” referred to something on a stick, like a Popsicle. He also recalls that many people did not like the name Tan Pops, which they said reminded them of Tampons (the female hygiene product). But he does not recall what this deep-fried skewered seitan product was named while it was made at 17 Dent St. before he named it Tan Pops. [Fern Israel is not sure when this product was first named Tan Pops, but she thinks it may have been so named from the day it was introduced; this is the only name she can recall that it had.]

In the spring of 1975, at about the time of the birth of Fern's first child, John moved out of Fern and Sakee's home, and he and Sakee went their separate ways in terms of their business; it was a very amicable separation. John had moved in with his girlfriend at 51 Oak Ave. in West Newton. At that time there was a company named Baby Watson Cheesecake Co., owned by two men named Peter and Kenny. One of the owners of Baby Watson had tasted a Tan Pup formerly sold at Erewhon (but no longer available) and liked it very much. He talked to John and suggested that, since he was already making seitan, he start deep-frying it to make a product like the Tan Pup. Baby Watson was already carrying the Wheatmeat Sandwiches, but they thought a product like the Tan Pup would sell even better. At this point, John either developed or renamed the Tan Pop. He recalls that the Tan Pup was breaded with a typical (soggy and thin) tempura batter based on wheat flour. John developed a thick batter using coarse corn meal and sesame seeds; it became delightfully crunchy after deep frying. John and a friend, Rob Allen, were soon making the seitan and deep-frying the rectangular Tan Pops out of John's home. The Tan Pops were sold first at Erewhon and then at Baby Watson; They were incredibly successful, in part because of the innovation of dipping the seitan in the corn batter before it was fried. To make the Tan Pops, slab or steaks of seitan were cut to size (approximately 3 inches wide, 4 inches long, and 3/4 inch thick) and placed on a tray. Each was dusted with a dry mixture of wheat and coarse corn flour, then an 8-inch long stick was pushed into one end so that it looked like the famous old New England Corn Dog. Then he dipped the skewered cylinder into a seasoned batter (with cinnamon, basil, powdered garlic and onion, plus sesame seeds) and deep-fried it. He put each store's order of Tan Pops in a brown paper bag. At the store he would line one or more wooden bowls with paper towels, arrange the hot Tan Pops in the bowl like spokes on a wheel, then place them near the cash register. He was soon selling to 3 Erewhon stores, Baby Watson, and 1-2 organic food sellers, plus a few others totaling 10-12 outlets for the Tan Pops.

In the spring of 1976 John moved the kitchen to a location behind a bar in Waltham, Massachusetts. With friend Robert Allen, they introduced a new line of smaller seitan sandwiches, in hamburger-sized pita pockets. They were named after people he knew, like the “Billy Biggins,” a Wheatmeat sandwich with grated carrots and tahini sauce, etc. Billy Biggins owned the bar. Then they rented space in a basement “mall” in Central Square, Cambridge, to begin a restaurant featuring Wheatmeat, Tan Pops and waffles. The developers ran away after somehow failing. John named another pee-wee sandwich the “Weymouth Whitney,” after the construction manager. It contained Wheatmeat, sauerkraut, caraway seeds, and Russian dressing made with Hain eggless mayo. These little sandwiches didn’t sell very well.

He also named the burger “Solar Burger” and reformulated it with TVP. Robert Allen suggested that their company might sell the Solar Burger to other, competing sandwich makers—which they did. Shortly thereafter they stopped making their own sandwiches. John also sold wheatmeat in bulk to other sandwich-makers. While at Waltham, John conceived a new company name—Vegetable Protein Company. Continued... Address: VegPro Co., 133 Nottinghill Rd., Brighton, Massachusetts 02135.

1418. Weissman, John. 1992. Pioneering work with seitan, Wheatmeat, and Tan Pops in America, mid-1976 to 1992 (Interview). *SoyaScan Notes*. March 31. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: In the fall of 1976 John formally founded the Vegetable Protein Company, registered with the city of Cambridge, and moved his operation out of his home into a commercial shop in Central Square at 140 River St. in Cambridge. Robert Allen left the company to begin a new career in the field of men’s clothing. In 1976-77 John tried to get a trademark for Wheatmeat but was unable to because I.T.T. (Wonderbread) owned the trademark for a bread product. With Tan Pops as the main cash product from 1976-1978, the business became a real commercial business and began to grow. Selling as many as 85 Tan Pops a day at Erewhon alone, he began to earn a modest living. For the first time, John began to use machines to help him in making his products. In 1977 he developed a portion-control method for the Tan Pops, running the seitan through a meat grinder, and forming them into cylinders, like a fat sausage, rather than the former slabs. John also began to experiment with new ingredients in the Wheatmeat and Tan Pops—such as vital wheat gluten, which he purchased from Ogilvie Ltd. in Montreal, Quebec, Canada. Other ingredients used included oat bran and oat flour mixed with wheat, whole toasted soy flour. The formula was constantly changing. At one point the main ingredients in the Tan Pop were vital wheat gluten and whole wheat flour. Neither Wheatmeat or Tan Pops were ever made entirely from vital wheat gluten.

In addition to the Wheatmeat Tan Pop, John developed and made a Tofu Pop, introducing it in the spring of 1977. He bought squares of plain pressed tofu (3 inches on a side and 3/4 inch thick) from a Chinese retail food store in Boston’s Chinatown—he does not recall the company’s name and he is not sure if they made the tofu or bought it from elsewhere. Later he bought tofu from Yah Kee, a Chinese tofu maker. He skewered the pressed tofu squares, coated them with his dry flour mix and corn batter, and deep-fried them. He first sold these at the very first Bread & Circus natural food store purchased by Anthony Harnett in Brookline. The product was introduced just after Anthony bought the store—but it was discontinued after a month or so, because it sold slowly; the unflavored tofu was too bland.

One day in the spring of 1979 he realized that deep-frying was unhealthy, and that day he and an employee moved his Pitco deep-fryer down to the basement, thus starting the “Vegetable Protein Museum of Natural History”—and stopped making Tan Pops. At that point he reformulated the Solar Burgers by adding TVP (they were made from a mixture of seitan and soy in various forms, incl. soynuts and TVP). He also made a TVP chili, which he thinks was called Vegetarian Chili.

In about 1978-79 John introduced another new product to salad bars around Boston. Named Smoky Soy Bits, it was a combination of TVP and gluten (produced by Ogilvie Ltd. in Canada) made into bacon-like bits, but without hydrogenated oils or salt (he used tamari instead). It was an “all natural” product—to the extent that TVP is natural.

In Nov. 1980 John introduced Weissman’s Original Tofu Sausage, which tasted like bologna. A 6-ounce mixture of spices and tofu in a cellulose casing, it was cooked in a smokehouse. His company made it for the first 4 years and it eventually became his best-selling item. As its popularity increased, he phased out retail sales of Wheatmeat and Solar Burgers, and sold these Tofu Sausages to restaurants in bulk. After this period he invented only tofu products.

In 1983 John invented Pasta Pals, a tofu-gluten meatball. He discontinued it when Lipton Tea Inc. brought the trademark from him in late 1984. Lipton still owns the registered trademark.

In May 1984 John had to leave his food plant at 140 River Street in Cambridge. So he arranged with Michael Cohen to make the Tofu Sausage at his plant in Greenfield, Massachusetts. This was disastrous for John, since the product’s new poor quality almost ended any reputation it had left in the marketplace. But it was quite an education for John. In January 1985 he took back the product and began making it for himself again.

In the fall of 1984 John arranged with Ademar Reis, owner of Season’s Harvest (a sandwich maker who was John’s first customer for bulk-packed Solar Burgers in 1976) to have the Solar Burger made at Ademar’s shop. John also wanted him to make Smoky Soy Bits and showed him

how. Reis made the products for John briefly in late 1984, however this situation did not work out for John either. But it did for Ademar, who to this day makes soy “bacon” after the manner John showed him, using textured soy flour or concentrate, and flavorings similar to or the same as those from raw material sources which John supplied to him. Reis now also makes a tofu meatball.

In 1985 John changed the company name to VegPro. He continued to make Solar Burgers and Wheatmeat, but from then on he only invented and worked on tofu products. In about 1986, based on the success of his Weissman’s Original Tofu Sausage (6 oz), he introduced a new Tofu Savvy line of products (starting with a 3-lb Boloney), each in a 2-3 lb loaf shape like a meatloaf, and sold to delis. He buys his tofu from a tofu maker in Massachusetts. With names like Tofu Salsa Savvy (bulgur and tofu), Curry (with brown rice and veggies), Spice-Seed, and Boloney, these are offshoots of the tofu sausage, but they involve a highly proprietary process that John has developed. Delis sell the sliced loaves for use in sandwiches.

In 1990 he began to test market (in one Bread & Circus store) two new types of tofu franks: Good Dogs, and Bad Good Dogs (hot & spicy), each with a registered trademark. They were only on the market for 1-2 months because they didn’t keep well—but he still feels they are excellent products. He made them himself because he doesn’t like to have them made on meat processing machines.

Today John works as a very creative solo craftsman and a chef, still making a line of food products himself, including the Weissman’s Original Tofu Sausage (6 oz), and the Tofu Savvy line. His products are sold at about 10 outlets, including five Bread & Circus stores, plus some co-ops, restaurants, and health-food stores.

He no longer makes Solar Burgers, but someone from California is making another product with that name.

On 19 April 1988 John received federal trademark #1,485,401 for Wheatmeat. He knows of people in Utah and Pennsylvania who are using his registered trademark, Wheatmeat, illegally.

John, now age 43, is a musician, selling foods he has developed, and writing a novel. He is almost a vegetarian, but he eats some fish. Address: VegPro Co., 133 Nottinghill Rd., Brighton, Massachusetts 02135.

1419. ADM–Archer Daniels Midland Co. 1992. Look where soybeans go. Box 1470, Decatur, IL 62525. 8 p. Catalog. 28 cm.

• **Summary:** This an updated and condensed version of a 1987, 18-page ADM products catalog. Contents: Soybeans—A rich source of protein. Soybean processing. Soy protein isolates (Ardex and Pro-Fam for food use, and Apro industrial isolates). Soy protein concentrates (Arcon S, G, F, VF, and T for food use, and Calf-Pro and Pig-Pro for calves and baby pigs). Soy flour and grits (Nutrisoy 74, Baker’s

Nutrisoy, Soylec, Toasted Nutrisoy grits, and Nutrisoy MR). Soy fibers (Arbran, Superb Fiber, and Nutrifiber) Soybean oil. Lecithin phospholipids (Yelkin, Thermolec, Breakin, Griddle E-Z, Stablec). Along the bottom of four pages are shown about 100 supermarket products containing soy ingredients.

Talk with Lee Lensch of ADM. 1994. March 4. This brochure was introduced about 2 years ago. Address: Decatur, Illinois.

1420. Bounds, Sarah. 1992. The subject of soya. *BBC Vegetarian Good Food (England)*. Spring. p. 28-29, 31-32.

• **Summary:** An introduction, with many color photos, to soyfoods, including TVP, tofu, soya milk, soya flour, soya oil, soy sauce, miso, tempeh, fresh soya [green vegetable soybeans; “soya beans can be eaten fresh straight from the pod, served green and tender...”], and whole dry soybeans. Contains considerable incorrect information.

1421. Johnson, Lawrence A.; Myers, D.J.; Burden, D.J. 1992. Early uses of soy protein in the Far East, U.S. *INFORM (AOCS)* 3(3):282-88, 290. March. [54 ref]

• **Summary:** A nice history of the subject based on a review of the literature. Contents: Introduction. China—birthplace of the soybean (industrial uses, chiang and miso, natto, tempeh, soymilk, tofu, shoyu). Emergence of U.S. soybeans (early soybean mills, ADM, Glidden). Chemical understanding of soybean protein (major components/fractions). First industrial applications (oil and meal, paints). Soy protein-based plastics (Henry Ford). Chemurgic movement (U.S. Regional Soybean Industrial Products Laboratory, Northern Regional Research Center, Glidden). Soy protein adhesives (I.F. Laucks). Paper coatings and sizings (Glidden). Soy fiber spinning (Ford, Azlon, Drackett). Other industrial uses (fertilizers, soy foam for fire fighting, Spraysoy “sticker and spreader”). Address: Center for Crops Utilization Research, Iowa State Univ., Ames, Iowa 50111.

1422. Boysen, Hans-Juergen. 1992. Soja [Soya]. *Schrot & Korn (Germany)*. April. p. 16-20. [Ger]

• **Summary:** An introduction to soybeans and soyfoods, including whole dry soybeans, soy oil, soymilk, soya meat (Sojafleisch, TVP), Whole soy flour, tempeh, and soy sprouts.

Note: This magazine is sold in German natural food stores (Naturkost-Laden).

1423. **Product Name:** Granose Soya Creem: Non-Dairy Cream Alternative.

**Manufacturer’s Name:** Granose Foods Ltd. Div. of Haldane Foods Ltd.

**Manufacturer’s Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England.

**Date of Introduction:** 1992 April.



**Ingredients:** Soya milk, vegetable oils, corn syrup, emulsifiers (vegetable mono-diglycerides), stabilisers (xanthan gum, locust bean gum, guar gum), natural color (beta-carotene).

**Wt/Vol., Packaging, Price:** 225 gm Combibloc Aseptic carton. Retail for 69 pence (7/92).

**How Stored:** Shelf stable; refrigerate after opening.

**Nutrition:** Per 100 gm.: Energy 1827 Kjoules / 437 Kcal (calories), protein 3 gm, carbohydrate 12 gm (of which sugar 5 gm), fat 36 gm (of which polyunsaturates 47%, and saturates 23%), sodium 0.1%.

**New Product–Documentation:** Spot in SoyaFoods. 1992. Spring. p. 4, 5. Ad in Health Food Business (England). 1992. July. p. 5. “Put Creem on top of Granose soya milk sales.” A color photo shows the carton and label. The Granose logo now reads: “Granose: A history of good health.”

Label (carton) sent by Leah Leneman of Scotland, purchased at Real Foods. 1992. July. 3 by 3 by 1.9 inches. Combibloc carton. Red, dark blue, and light blue on white. Front panel: “High in polyunsaturates. Low in saturates. Cholesterol free.” Other panels: V logo. “Suitable for vegetarians and vegans. Enjoy Soya Creem poured over your favorite fruits or desserts... Made without animal fats and milk derivatives. (Not recommended for use in coffee.)” Note: This product is basically identical to So Good Soycream (1991).

Label sent by Genice Foods Ltd. 1994. Feb. 18. Same product name but in a 225 Tetra Brik Aseptic pack, and the first ingredient is now Organic soya milk.

1424. **Product Name:** Granose Light Soya Milk (Less than 1% Fat).

**Manufacturer’s Name:** Granose Foods Ltd. Div. of Haldane Foods Ltd.

**Manufacturer’s Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England.

**Date of Introduction:** 1992 April.

**Wt/Vol., Packaging, Price:** 1 liter. Retail for 91 pence (5/92).

**How Stored:** Shelf stable; refrigerate after opening.

**New Product–Documentation:** Spot in SoyaFoods. 1992. Spring. p. 4, 5. “New Low Fat Soya Milk.” “With less than half the fat of ordinary soya milk, it has a lower fat content than any other low-fat soya milk. In the UK it is estimated that 48% of all dairy milk sales are low-fat (skimmed or semi-skimmed).” A photo shows the package and label.

1425. **Product Name:** Protoveg Burgamix with Onion and Chives.

**Manufacturer’s Name:** Haldane Foods Group.

**Manufacturer’s Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: 0908 211311.

**Date of Introduction:** 1992 April.

**Wt/Vol., Packaging, Price:** 330 gm foil packets. Retail for £1.69 (5/92).

**How Stored:** Shelf stable.

**New Product–Documentation:** Spot in SoyaFoods. 1992. Spring. p. 4. “New Flavors for Burgamix and Sosmix.” Note: Burgamix was originally developed by Direct Foods.

1426. **Product Name:** Protoveg Sosmix [With Country Herbs, or With Cheese and Onion].

**Manufacturer’s Name:** Haldane Foods Group.

**Manufacturer’s Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: 0908 211311.

**Date of Introduction:** 1992 April.

**Wt/Vol., Packaging, Price:** 330 gm foil packets. Retail for £1.59 (5/92).

**How Stored:** Shelf stable.

**New Product–Documentation:** Spot in SoyaFoods. 1992. Spring. p. 4. “New Flavors for Burgamix and Sosmix.” “Also new from Haldane is Protoveg Sosmix with Cheese and Onion which joins the existing range of Sosmix, and Sosmix with Country Herbs as a complete premix requiring only the addition of water. The meat-free sausages are made from textured vegetable protein.” Note: Burgamix was originally developed by Direct Foods Ltd.

1427. Johnson, Lawrence A.; Meyers, D.J.; Burden, D.J. 1992. Soy protein’s history, prospects in food, feed. *INFORM (AOCS)* 3(4):429-30, 432, 434, 437, 438, 440, 442-44. April. [54 ref]

• **Summary:** “This is the second part of a review that chronicles the individuals and the historical and economic factors noteworthy in the development of soy protein as food and feed ingredients.” Contents: Introduction. Early Western food uses (whole and defatted soy flour, enzyme-modified isolated soy proteins as whipping agents, whipped

toppings, cereal-soy blends). Soy flour and grits. Protein concentrates and isolates (Griffith Laboratories, Central Soya Co., Mead Johnson and Co., Central Soya). Dairy analogs (Dr. Harry W. Miller, Loma Linda Foods, Mull-Soy and Borden, Vitasoy, Edensoy, Worthington Foods and Soyamel, Prosoabee and Mead Johnson, Rich Products and Chill-Zert, Tofutti). Spun fibers (Robert Boyer and the Ford Motor Co., Temptein, Worthington Foods, Bontrae, Bac\*O's, Bac-O-Bits, Miles Laboratories, Morningstar Farms). Textured soy protein and meat analogs (W. Atkinson, ADM and TVP, General Mills and frozen Bontrae, the U.S. School Lunch Program). Nutritional advances in soy products. Today's world soybean and soy protein production (consolidation among manufacturers of modern soy protein ingredients: ADM, Cargill, Central Soya Co., Protein Technologies International, A.E. Staley Mfg. Co.). Future of soy protein products.

Tables show: (1) Soy meal consumption in the USA by type of animal: Poultry 41.1% of total 18.9 million metric tons, swine 27.4%, beef cattle 9.0%, dairy cattle 9.0%, other livestock 9.5%, human food 3.2%, industrial 0.5%. Thus, industrial (nonfood, nonfeed) uses for soybeans presently comprise no more than 0.5% of the protein produced from soybeans grown in the United States. (3) U.S. companies supplying protein in 1948-50 versus 1990 (industrial and edible flours, concentrates, and isolates). 23 companies then vs. 5 in 1990.

Note: Talk with Ed Milligan of EMI by phone. 1992. May 5. This article contains some misleading information. It refers to an article by Ken Becker written in 1971. In 1958-59 USDA developed a laboratory prototype of flash desolventizing. In 1959 they contacted EMI corporation in Des Plaines to commercialize the flash desolventizing system for production of light-colored, edible soybean flakes, for soy flour and grits, with a maximum PDI (protein dispersibility index). At that time Ed Milligan was just a newly hired member EMI, which undertook the project. Ed designed and installed the world's first commercial flash desolventizing system for Honeyamead Products Corp. in Mankato, Minnesota, in 1960. Note that this system was used to make food, rather than feed. All but 2 systems have been used exclusively to make foods. All such systems produce a flake with a very light color and controlled PDI, whereas a DT (desolventizer-toaster) produces a golden colored flake. He is leaving for India in a few weeks to commission EMI's 22nd such unit. He has designed, installed, and started every one of the 22. Address: Center for Crops Utilization Research, Iowa State Univ., Ames, Iowa 50111.

1428. Muir, Karen. 1992. Forbes & Walker establishes a subsidiary in Sri Lanka named Soyfoods Ltd. to manufacture textured soy flour (Interview). *SoyaScan Notes*. May 19. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Up until now, Forbes & Walker has imported

TVP to Sri Lanka; now they want to manufacture it in Sri Lanka. Address: International Executive Service Corps. (IESC).

1429. Hall, Trish. 1992. Turkey, tuna or soy: The post-modern burger. *New York Times*. May 20. p. C1, C6. Living section.

• **Summary:** "Vegetable burgers," which are becoming more popular, have a dual audience: those who have health concerns and those who avoid meat for other reasons. ADM has begun selling a Harvest Burger, both in frozen ready-made form and as a dry mix; 29% if its calories come from fat, about half the fat content of a regular hamburger. The burger has become so popular that Harvest Direct, a small mail order company, has begun selling it in dried form. The company has had to expand its staff to 15 people, up from only 2 people when it began 18 months ago. Surveys by ADM show that only 20% of the customers are vegetarians.

1430. Archer Daniels Midland Co. 1992. Third quarter report to shareholders. 8 p.

• **Summary:** One section titled "Mr. and Mrs. Dwayne Andreas host Mikhail Gorbachev family in Decatur" notes: "On Tuesday, May 5, Mr. and Mrs. Dwayne Andreas hosted a visit to Decatur, Illinois by former Soviet leader Mikhail Gorbachev, his wife Raisa, and daughter, Irina. Mr. Andreas and Mr. Gorbachev have been friends since they met about eight years ago in the Soviet Union. The Gorbachev's had dinner, reminisced about old times and spent the night in the Andreas' home."

"The main purpose of Mr. Gorbachev's ADM visit, which was arranged by Mr. Andreas for the following day, focused on the production of ADM's brand of vegetable burgers. Already, more than 10,000 soybean-based vegetable burgers a day are being sold in Moscow. Mr. Gorbachev will return home with hopes ADM will build a vegetable burger plant in Russia, much like the one he saw in Decatur."

Five color photos show Gorbachev at ADM; one of these shows him and his wife, Illinois governor Jim Edgar, and Mrs. Nelson Rockefeller watching as frozen patties are being made in the vegetable burger plant. Address: Decatur, Illinois.

1431. Frost & Sullivan Inc. 1992. The European market for protein ingredients. New York, NY: F&S. 383 p. #E1712/P. 98 tables. 6 figures.

• **Summary:** "Sales of protein ingredients to the food industry in Western Europe in 1991 amounted to \$1.3 billion. This is expected to increase to \$1.5 billion by 1996." Contents: Executive summary. 1. Introduction, scope and methodology. 2. Protein ingredients—Technology, economics and trends: Introduction, vegetable proteins (soy flour and grits, soy protein concentrates, soy protein isolates, textured soy proteins, wheat gluten), animal proteins (milk-

based, egg-based, other, single cell proteins incl. yeast and mycoproteins). 3. End-user markets for protein ingredients—Industry requirements, historical and future developments: Introduction, nutrition claims, the food industry (meat and meat products, dairy products and desserts, bakery and cereal products, specialty infant and health food, pet foods, miscellaneous foods). 4. The markets for protein ingredients in Western Europe: Germany (For each country is given: The food industry, protein ingredients off-take by the food industry, sales of protein ingredients to the food industry, volume off-take of protein ingredients by the food industry, sales of protein ingredients by type), United Kingdom, France, Italy, The Benelux countries, Spain and Portugal, other EC countries, other Western European countries. 5. Profiles of major suppliers of protein ingredients in Western Europe: Includes Aarhus Oliefabrik, Archer Daniels Midland Co., British Arkady Co., BSN, Cargill, Central Soya, Dalgety, Danmark Protein, Eridania/Beghin-Sey [sic, Say], Loders Croklaan, Lucas Meyer, Nattermann Phospholipid, Nestle, Protein Technologies, International, RHM Ingredients Ltd., Solnuts BV, Unilever Group. Appendices. A. Names and addresses of suppliers of protein ingredients in Western Europe. B. Company index. Address: 106 Fulton St., New York, NY 10038. Phone: 212-233-1080.

1432. *Hm News (Honeymead Newsletter)*. 1992.

Honeymead's history dates back to 1938. No. 26. Spring, p. 1.

• **Summary:** An excellent 1-page history of Honeymead Products Co.

1939—Mankato Soybean Products Inc. is formed on the site of the abandoned Minnesota Pipe and Tile Co. The key man is William Blethen, a young lawyer. The principal piece of equipment was a single expeller. Riley Lewis was the first plant manager.

1942—Washington Egg and Poultry Association, a cooperative, purchased the company and operated it until...

1949—The company is purchased by the Andreas family, which had feed mills in Iowa under the name Honeymead. As a result, Mankato Soybean Products Co. became known as Honeymead Products Co. Lowell Andreas, Honeymead's chief officer, soon introduced solvent extraction equipment from Europe.

1960—Honeymead is sold to the Farmers Union Grain Terminal Association (GTA), a grain marketing terminal based in St. Paul.

1963—Honeymead expands into hydrogenating soybean oil.

1968—Lowell Rasmussen is named president; he continues the growth initiated by the Andreas family.

1984—Rasmussen retires as president and is succeeded by Merrit Peterson.

1992—Today Honeymead Products Company has 200 employees. Its present capacity is 80,000 bushels, 12 railroad

tank cars of refined oil, and 18 cars of hydrogenated oil.

An aerial photo shows the huge plant, next to a river, next to a freeway. Address: [Mankato, Minnesota].

1433. *SoyaFoods (ASA, Europe)*. 1992. Helfex '92. 3(2):4. Spring.

• **Summary:** "The International Health Food Exhibition, Helfex '92, was held at Wembley, London on 26 and 27 April. Over 160 companies concerned with health, diet, fitness and nutrition exhibited and several new soya products were launched.

"The Haldane Foods Group displayed their new range including a new Light Soya Milk, a new Soya Creem, a vegetarian cheese spread, burger and sausage mixes, and 6 new varieties of tinned products. JRJ Trading (The Redwood Company) had an interesting and tasty range of tempeh-based products including dips, spreads, patés and vegetarian rashers. Soya milks and desserts from Granovita, Haldane, Sojasun (Triballat), Vitasoy were also on display. Berrydales' No Cream Ices, made from fresh organic tofu and soya milk, introduced their new 4-pack which will allow consumers to purchase four different ices in one pack. Plamil Foods launched a new non-dairy chocolate bar, *Martello* and Marigold Health Food, manufacturers of canned braised tofu and other delicacies, also had a stand."

1434. *SoyaFoods (ASA, Europe)*. 1992. Soy protein burgers in Russia. 3(2):3. Spring.

• **Summary:** "The Archer Daniels Midland Co. (ADM) has been successfully marketing a soya protein concentrate patty in the Soviet Union for nearly two years and a similar product, the Harvest Burger is on test market in the US... It is estimated that one restaurant in Moscow now sells 4500 of these burgers a day."

1435. Chajuss, Daniel. 1992. Re: History of Hayes Ashdod Ltd., Israel. Letter to Drs. L.A. Johnson, D.J. Myers and Daniel J. Burden, Center for Crops Utilization Research, Iowa State University, Ames, Iowa, June 23. 1 p. Typed, with signature on letterhead.

• **Summary:** Daniel read with interest the article on titled "Soy protein's history, prospects in food, feed," by Johnson, Myers and Burden, published in *INFORM* 3(4):429 (1992). Since the article focused mainly on the production of soy protein concentrates, Chajuss would like to add some information.

In 1963 Chajuss established and owned the first soy protein concentrate factory (Hayes Ashdod Ltd., Ashdod, Israel) which was using a counter current aqueous alcohol extraction system. A system of aqueous alcohol immersion extraction was already in use commercially by Central Soya Company (and is still used by Central Soya in the USA).

In 1966 Hayes Ashdod Ltd. introduced texturized soya protein concentrates under the brand names Hayprotex and

Contex.

In 1968 Hayes started producing a special soy protein concentrate, free of trypsin inhibition and free of antigenicity, for use in calf milk replacers as a substitute of milk proteins.

In 1969 Hayes started to produce more functional and soluble soy protein concentrates, by further treatment of the aqueous alcohol extracted soy protein concentrate, for use as substitutes for soy protein isolates and for sodium caseinates in various food systems, especially in the meat processing industries.

In 1973 Chajuss sold know-how and complete engineering designs to Aarhus Oliefabrik A/S, Aarhus, Denmark, to make powdered and textured soy protein concentrates for human consumption, pet foods and calves milk replacers.

All the soy protein concentrate facilities worldwide, which were established since 1973 and which are still in operation today (including ADM {USA}, Bunge-SOGIP {France}, etc., with the exception of Central Soya's USA plants) employ Chajuss' technology and engineering designs, and are mainly based on the know-how and technology developed by Chajuss.

About 90% of the total world production of soy protein concentrates today is made by aqueous alcohol extraction. Most of the protein concentrates are used in the form of powder or grits, some are further texturized, and some are further treated to provide various "functionalities."

"A few years ago we sold Hayes Ashdod Ltd., which was renamed 'Solbar Hatzor Ltd.,' being a joint venture of the German Soya Mainz Company and Kibutz Hatzor of Israel."—Best Regards, Daniel Chajuss. Address: Managing Director, Hayes General Technology Company Ltd., Misgav Dov 19, Mobile Post Emek Sorek, 76867 Israel. Phone: (972) 8 592925.

1436. Bergh, Barbara. 1992. The Canadian oilseed processing sector: A profile. In: Statistics Canada. 1992. Grain Trade of Canada 1990-91. Ottawa, ONT, Canada: Statistics Canada. See p. 23-32. [Eng; Fre]

• **Summary:** Contents: Oilseed situation. Crushing industry. Vegetable oils. Vegetable oilmeals. Economic value of the industry. Policy issues and recommendations by the Canola Marketing Task Force. "The main oilseed crops produced in Canada are [in descending order of the amount produced], canola, soybeans, flaxseed and sunflower seed. There has been an almost continuous increase in the production of oilseeds since 1950, with the largest increase being in canola production which will reach a record 4.3 million tonnes in 1988/89. There was a record 1.3 million tonnes of soybeans produced in 1990/91. A bar chart shows the amount of Canada's four major oilseeds produced every 5 years from 1950 to 1990. "Only small amounts of oilseeds are imported into Canada, but significant amounts are

exported. In 1990/91, 99% of canola exports went to Japan, while soybean exports were destined mainly for the U.S., Netherlands, Portugal, Hong Kong, Japan and Singapore."

One of Canada's three soybean crushing plants closed in 1991 causing a drop in soybean crush capacity from 3,700 to 2,500 tonnes per day. Of this, CanAmera Foods in Hamilton, Ontario, has 1,270 tonnes, and ADM Agri-Industries Ltd. [in Windsor, Ontario] has 1,250.

"The two major oilseeds processed in Canada are canola and soybeans, with small amounts of sunflower seed and flaxseed also being crushed. Canola is crushed mainly for its oil as its seed yields about 40% oil and 60% meal. Soybeans are crushed more for the meal since they yield about 78% meal and only 17.5% oil. Sunflower seed yields 42% oil and 35.5% meal, while flaxseed yields 34% oil and 63% meal..."

"In 1990/91, 44% of the domestic canola crop was crushed, compared with 72% for soybeans, 70% for sunflower seed and 1% for flaxseed."

"In 1990/91, 0.8 million tons of crude vegetable oils were produced in Canada... Canola oil accounted for 74% of total vegetable oil production in Canada, followed by soybean oil at 21%, sunflower oil at 4% and linseed oil at 1%. In addition, approximately 25.0 thousand tonnes of corn oil are produced annually."

"Soybean meal is the major vegetable oilmeal used in Canada, accounting for 76% of the total oilmeal consumption in 1990/91. Canola meal is next, accounting for 22% of total domestic use, followed by sunflower and linseed meals which accounted for 1% or less." Soybean meal contains 48% protein, whereas canola meal contains only 36-37% protein; it contains more fiber than soybean meal and has less digestible energy.

As of 1 Jan. 1992, Canadian soybeans, crude soybean oil, soybean meal, canola seed, crude and refined canola oil and meal all have tariff-free access to the USA. Refined soybean oil will be duty free as of 1 Jan. 1995. Address: Market Analyst, Canadian Oilseed Processors Assoc., 1010-360 Main St., Winnipeg, Manitoba R3C 3Z3, Canada. Phone: 204-942-3408.

1437. Weissman, John. 1992. Natural foods sandwich companies in and around Boston, Massachusetts (Interview). *SoyaScan Notes*. July 4. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The two main sandwich companies are Season's Harvest (in Somerville, Massachusetts; owned by Ademar Reis, pronounced REES) and New World Natural Foods (in Brighton, Massachusetts; owned by Emily Merghart; Phone: 617-232-5973). Emily started the company herself under the name New World Enterprises in 1979, and has since run it herself. Her husband, Errol, was a dancer. The idea for the business came from a previous business that Paul Duchesne had started and left. Season's Harvest products are distributed widely, down to New York and Connecticut,

and possibly up into New Hampshire. New World sells only locally. Both use tofu and seitan in their sandwiches. New World uses seitan made by The Bridge in their sandwiches. They sell tofu burgers made by 21st Century, etc. Admar makes Bacon Bits out of TVP, a process he learned from John; then he waited 5 years and did it on his own. He also makes vegetarian burgers out of chickpeas and rice, etc. When stores such as Bread & Circus installed their own delis, it greatly hurt both of these sandwich companies. Address: VegPro Co., 133 Nottinghill Rd., Brighton, MA 02135.

1438. Horgan, Karin. 1992. Brits aren't necessarily beefeaters. *Vegetarian Times*. July. p. 11. [1 ref]  
 • **Summary:** Currently 28,000 British adults are becoming vegetarians each week, according to a 1991 survey that the Vegetarian Society of the UK commissioned from the University of Bradford, plus earlier Realeat surveys which are annual Gallup Polls conducted since 1984. "The Bradford study found that 3.1 million British adults, or 7 percent of the adult population, described themselves as vegetarians, a 94 percent increase over figures from the 1990 Realeat survey. Figures for children are even higher, with 8 percent of 11- to 18-year-olds reporting they are vegetarians..."

"Ten percent of British women and 4 percent of British men say they don't eat meat. The Bradford survey found that people in the middle class were twice as likely to be vegetarian than those in the upper class."

1439. Eichberg, Joseph. 1992. Re: History of American Lecithin Co. Letter to Mr. Randall E. Zigmont, President, American Lecithin Co., 33 Turner Rd., Danbury, CT 06810, Aug. 3. 3 p. Typed, with signature on letterhead.

• **Summary:** This typewritten document consists of a 1 page cover letter (on Amico, inc. letterhead) followed by a 2-page history.

"Dear Randy, With further reference to your fax of July 24th concerning the history of American Lecithin Company, for use in a brochure you plan to prepare, I am enclosing herewith material which I trust will be helpful.

"Let me know if I can be of further assistance. With kindest regards,..."

"Historical data on American Lecithin Company, for Randy Zigmont.

"In 1923 little was being done with soybeans in the United States. Soybeans from Manchuria were going to Europe in considerable quantities where Hausa Muehle in Germany, Aarhus Oliefabrik and Dansk Soyakage Fabrik [Dansk Sojakagefabrik] in Denmark were the principle processors. Hausa Muehle had a patented process developed by Hermann Bollmann whereby instead of simple extraction of the beans with alcohol, a combination of alcohol with a small amount of benzol was used for better recovery. The oil, and especially the lecithin recovered, exhibited a bitter

taste, and in 1935, American Lecithin Company was granted a patent covering essentially the use of hexane to obtain phosphatides substantially free from bitter taste.

"As early as 1923, our group [AAC = American Associated Companies] in Atlanta learned of Hausa Muehle's activities, and in 1927, we first visited them in Hamburg with a view to obtaining information and their representation in the U.S.A. where no commercial lecithin was available. In 1928 [sic, late 1929], Dr. Bruno Rewald, who handled much of the laboratory and applications research on lecithin, and Mr. Adolph Schneider on the business end, came to this country for joint discussions on development, and Dr. Rewald and the writer visited Staley and others in an attempt to encourage their interest in lecithin, and provide a base for domestic production. Subsequently, with participation of Hausa Muehle, American Lecithin Company (Delaware) was formed in 1930.

Note: In 1929 American Lecithin Company was first incorporated in Atlanta, Georgia (See brochure "First in Lecithin since 1929).

"The three European producers mentioned had a cartel arrangement among themselves, and while they had large inventories of lecithin on hand, prices to us were maintained making introductory work difficult. Lecithin in Europe was being mainly used in the production of margarine. Margarine production, at the time in the U.S., was being hampered by the power of the dairy industry, and margarine was regulated by three government agencies—F.D.A., U.S.D.A., and the Treasury for collection of a tax. The sale of margarine in colored form (yellow) was not permitted. American Lecithin's work on lecithin in chocolate, in 1929, opened a new and important market for lecithin in this country and abroad. Since chocolate had to be made with cocoa butter, and since commercial lecithin contained soybean oil, we arranged with Hausa Muehle for the production of 'cocoa butter lecithin,' in which acetone extraction was used to remove the soybean oil, after which cocoa butter was added as the carrier, and use of the acetone purification process later resulted in the development of granular and powdered lecithin.

"At that stage, soybean cultivation in the U.S.A. was rapidly increasing, and domestic processing of soybean oil was in prospect, and we approached the Glidden Company who were becoming increasingly interested in the processing of soybeans, planning for the solvent extraction of soybeans at a plant in Chicago [Illinois]. It so happened that at about the same time, ADM was scheduling construction and operation of a soybean processing plant in Chicago to use hexane as the extraction solvent. ADM were in touch with Aarhus Oliefabrik through Fries Bros. / Ross & Rowe, and in order to facilitate the introduction of commercial lecithin on a large scale and simplify a complicated patent situation, it was deemed advisable to concentrate efforts, and the American Lecithin Company, an Ohio Corporation, was

formed in 1934, with joint stock ownership by the principals, and with Ross & Rowe functioning as a selling agent to augment the new company's own efforts.

"Patented in 1940 and licensed to the industry, American Lecithin Company's research came up with an improvement in lecithin production and use, an important step forward, by using a simple method to convert the variable non-uniform soybean lecithin oil-containing plastic consistency material to a uniform, much more easily handled fluid consistency, by the use of a small percentage of free fatty acid. There has been virtually universal use of this method.

"Some years later, the Justice Department objected to the concentration of promotion in a small group and the parties separated, and it was at that time that American Lecithin Company, Inc. was incorporated in Georgia, and continued its independent operations until acquired by Nattermann" [in 1989].

Note 1. With this original history, Eichberg encloses photocopies of pages 483-88 from: Wittcoff, H. 1951. *The Phosphatides*. American Lecithin Co. is discussed at length on these pages.

Note 2. Amico apparently also has an office in New York, for at the top right of their letter is printed: 32-34 61st Street, Woodside, L.I. [Long Island], N.Y. 11377. Telephone: (718) 274-4350. Address: Amico, Inc., P.O. Box 4056, Atlanta, Georgia 30302 U.S.A. Phone: (404) 522-7060. Fax (404) 581-0116.

1440. Brieser, Carla. 1992. Pizza chain extols benefits of soy flour. *Illinois Agri-News (La Salle, Illinois)*. Aug. 28.

• **Summary:** Ralph Senn and Joe Ream, otherwise known as the Flying Tomato Brothers from Garcia's Pizza in a Pan, fortified their pizza crust with 12% soy flour during a weekend-long pilot program at their store in Champaign, Illinois. "It was all a part of a weekend-long pilot program with the University of Illinois / INTSOY, Land of Lincoln Soybean Association and Archer Daniels Midland Co. to show the benefits of soy flour," a press release said.

"Soy flour greatly increases the nutritional benefits of pizza. By blending soy flour into the dough, the protein content of one slice increases by 50 percent and dietary fiber increases 400 percent. And, being made from soybeans, its use will help the local farm economy."

A photo shows Ralph Senn and Joe Ream at their store.

1441. Archer Daniels Midland Co. 1992. Annual report. P.O. Box 1470, Decatur, IL 62525. 41 p. Sept.

• **Summary:** A cover photo shows three men and a woman seated around a table that looks like a map of the world. Across the bottom is written (for the first time in its annual report): "Supermarket to the World."

Net sales and other operating income for 1992 (year ended June 30) were \$9,232 million, up 9.0% from 1991. Net earnings for 1992 were \$503.8 million, up 7.9% from 1991.

Shareholders' equity (net worth) is \$4,492 million, up 14.5% from 1991. Net earnings per common share: \$1.54. Number of shareholders: 32,377.

"The last two fiscal year have been years of rapid growth and a broadening of the Company's profit base. During this period investment in plant and equipment amounted to \$1.5 billion, consisting of \$1 billion of capital expenditures for new plants and equipment, using mostly new technology, and acquisitions of \$500 million...

"ADM takes seriously its commitment as the 'supermarket to the world.' With millions of starving people in Asia and Africa, the Company has the technology, through soy milk, Harvest Burger and wheat gluten, to provide an individual with a proper level of healthy protein for as little as 12.5¢ per day."

A 2-page foldout between pages 4 and 5 shows ADM's international corporate structure. In Europe, under ADM International Holdings, are British Arkady Company UK, Haldane Granose Food Group UK, and Arkady Feeds Ireland. Under British Arkady Company UK are S.I.O. France, InaNahrmittel Germany, and Happidog Petfoods UK. Under Haldane Granose Food Group UK are Genice UK, Vegetarian Feasts & Cuisine UK, Snackmasters UK, Direct Foods UK, and Saucemasters UK.

British Arkady Company-England: Manufactures, markets and distributes full fat soya flours, TVP, bakery ingredients, frozen dough products. S.I.O.-France: Manufactures and markets specialty oils and fats for food and pharmaceutical use. Soya flour millers.

Haldane Granose Food Group-England: Factories at Barrow and Newport Pagnell, manufacture and marketing health foods, dry mixers, TVP mixers, burger mixes, dry mix and frozen vegeburgers, canned vegetarian products, spreads, soya milk. Genice Ltd.-Wales: Manufactures non-dairy ice cream, soya yogurt, yogice soya cream and specialty margarines. Direct Foods Ltd.-England: Protoveg range of TVP mixers, including Sosmix and Burgamix, marketed and distributed by Haldane/Granose. Snackmasters Ltd.-Wales: Manufactures and markets a range of snackmeals. Saucemasters Ltd.-Wales: Manufactures and markets sauces, dips, spreads and relishes packed in glass jars or sachets. Vegetarian Feasts & Vegetarian Cuisine-England: Manufactures and markets frozen vegetarian meals, retailed through food shops and supermarkets.

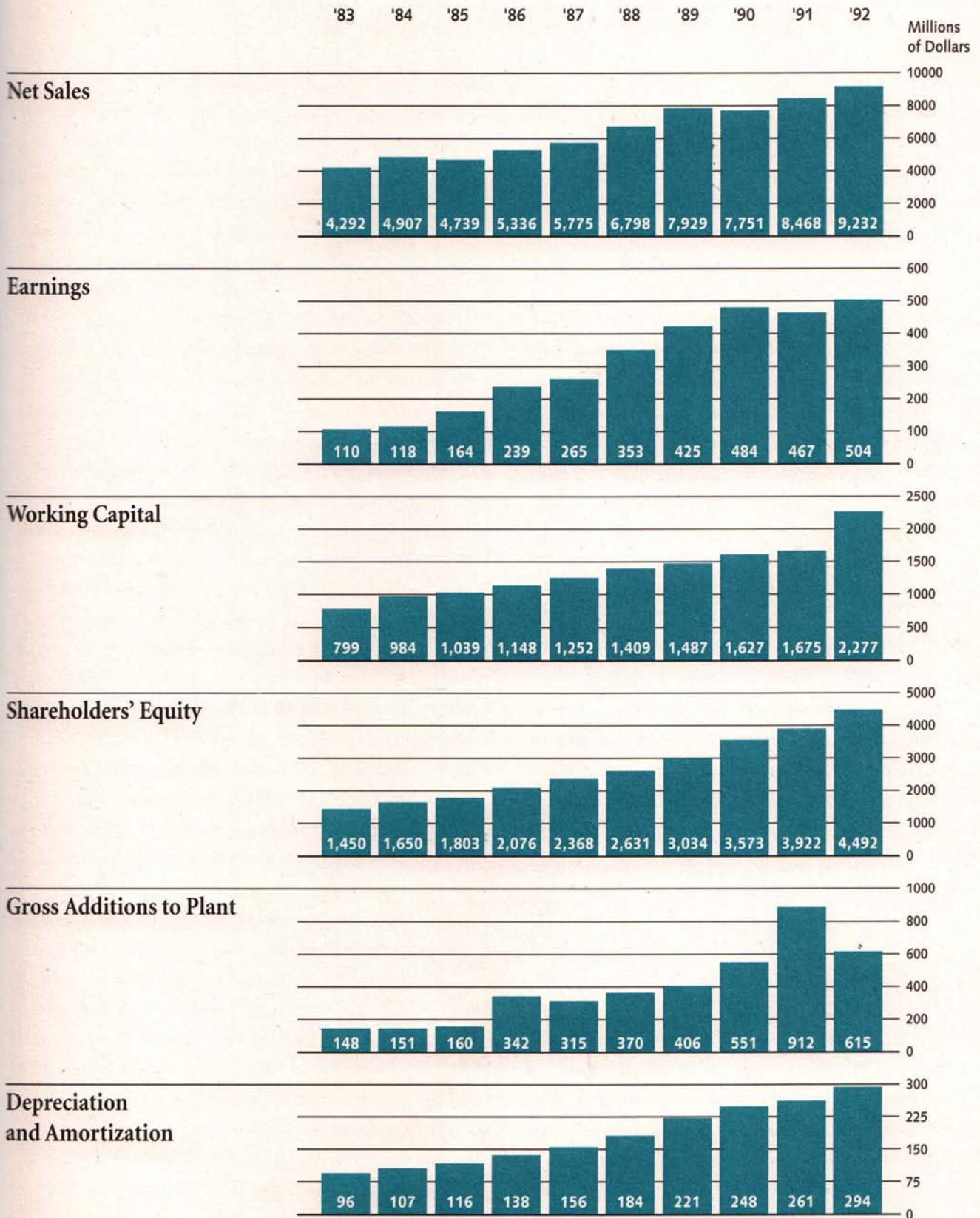
"Haldane Foods Group is now well established as the leading supplier to the U.K. health food industry. Nineteen products were added to an already extensive sales list. Snackmasters, Ltd. experienced rapid growth in snackmeals and increased efficiency by installing fully automatic process equipment. Two products that capitalized on the growing trend toward good health were the low-fat Granose 'Light' soya milk and the high-polyunsaturate cholesterol-free Granose Soya Cream.

"Vegeburgers remain a market leader and three new

ARCHER DANIELS MIDLAND COMPANY  
ANNUAL REPORT 1992



*SUPERMARKET  
TO THE WORLD*



relishes were introduced under that brand name. Granose Foods is rapidly building market share with both vegetable and TVP-based vegetarian sausages. Genice Ltd. continued to innovate with the introduction of low-fat yogice.”

Pages 20-21: A bar chart shows ten-year statistics for net sales, earnings, working capital shareholders equity, gross additions to plant, depreciation and amortization. Net earnings grew from \$110 million in 1983 to \$504 million in 1992. Address: Decatur, Illinois.

**1442. Product Name:** Vegetable Ravioli–With Whole Grains [With Carrot Pasta, With Spinach Pasta].

**Manufacturer’s Name:** D’Alterio Foods.

**Manufacturer’s Address:** 109-18 Northern Blvd., Corona, NY 11368. Phone: 718-779-4770..

**Date of Introduction:** 1992 September.

**Ingredients:** Ravioli: Certified organically grown: Whole wheat durum flour, whole wheat flour, carrots, spinach, tomatoes, tofu, cooked wild rice, cooked brown rice, onion, peas, corn, canola oil, garlic, oat bran, wheat bran, amaranth. Natural: Filtered water, sea salt, herbs and spices.

**Wt/Vol., Packaging, Price:** 9 oz. (225 gm) tray.

**How Stored:** Frozen.

**New Product–Documentation:** Article in *Food Business* (Chicago, Illinois–Putman). 1992. Nov. 23. “Pasta with a heart–D’Alterio Vegetable Ravioli.” “Joe D’Alterio’s story is reminiscent of ConAgra chairman Mike Harper’s bout with heart problems that inspired Healthy Choice. Five years ago, D’Alterio, owner of D’Alterio Pasta, Corona, New York, had chest pains. Instead of going through with the angiogram his doctor recommended, D’Alterio decided to follow Dr. Dean Ornish’s program and, as he recalls, ‘I went cold turkey.’ He changed his diet, eliminated meat, meditated and exercised.

“Two months later, he said, his cholesterol level dropped from 250 to 165. ‘My doctor couldn’t believe it,’ said D’Alterio.

“The results inspired D’Alterio to begin work on a line of vegetarian pastas. Today, the line he has come up with tastes as good as–if not better than–its meat-laden counterparts.

“D’Alterio’s whole-wheat pastas are vegetarian as well as organic. Spinach ravioli, for instance, includes carrots, tomatoes, tofu, rice, onions, peas, corn, oat bran, wheat bran and amaranth. End result: Fifteen percent of calories from fat, 9.3 grams of protein, 7.5 grams of fiber and no cholesterol.”

A large photo shows the label, with ingredients.

Ad (half page, color) in *Vegetarian Times*. 1993. April. p. 21. “Premium Organic Pastas: Delicious tasting pasta has never been this healthy before.” Shows a large color photo of the label, with a 50¢ off coupon. Send it to: P.O. Box 880145, El Paso, Texas 88588-0145 (The address of a coupon redemption company).

Talk with Alberto Olavarria of D’Alterio. 1998. Feb. 17.

In 1992 the company began making meatless products for the natural foods industry. Their first product that contained soy (tofu) was the Vegetable Ravioli, introduced in Sept. 1992 at the Natural Products Expo in Baltimore, Maryland. In 1992 they started making products for the natural foods industry, started using organic ingredients, and introduced their first two meatless products: Vegetable Ravioli (with tofu), and Vegetable Tortellini (without soy). Also in 1992 they introduced Beef Cannelloni and Beef Empanada (like a meat turnover); both contained a mixture of TVP and beef. The company started in 1972. The Healthy Cuisine name started to be used in about 1995. The address has always been 109-18 Northern Blvd., Corona, New York 11368. Phone: 718-779-4770.

1443. Davis, Susan. 1992. Tank up with SoyDiesel: Clean Air Act pumps interest in alternative fuel. *Soybean Digest*. Aug/Sept. p. 10-11.

• **Summary:** Leon Schumacher of the University of Missouri–Columbia, tests and drives a Dodge pickup with “Powered by Soybean Oil” printed on the tailgate. It turns plenty of heads and evokes the “thumbs up” sign. What started as a simple research project has exploded into a national campaign. “SoyDiesel is made by esterifying degummed soybean oil. As requirements of the Clean Air Act of 1990 start to take effect, “everything from boats to buses will be required to reduce emissions.” Tests have shown that SoyDiesel can cut pollution by up to 86%.

Bill Ayres, vice president of Interchem Industries, has a pilot plant manufacturing SoyDiesel at Leawood, Kansas. It sells for \$2.50/gallon compared to \$1 for regular diesel. “Interchem has 15 million gallons of SoyDiesel available and plans to build a new plant for additional production. Cargill, ADM, and Ag Processing [AGP] are exploring building esterification plants near soybean processing plants.”

One problem with SoyDiesel is that it jells at 28 degrees F, according to Bill Ayres.

Ferruzzi-Montedison is building a plant in Livorno, Italy, to make 18 million gallons a year of Diesel-Bi.

A sidebar, titled “Projects hit the road,” discusses: Sunrider: United Soybean Board is “providing 17,500 gallons of 100% SoyDiesel and funding a \$60,000 educational program.” Ferruzzi-Montedison is testing two buses in Sioux Falls, South Dakota. During the summer Olympics in Barcelona, Spain, vehicles will use Diesel-Bi. Bi-State Industries fuels 60 buses in the greater St. Louis, Missouri, area with a blend of 25% soy and 75% diesel. MSMC is funding a project with five tractors. “More than 100 maintenance vehicles at Lambert International Airport in St. Louis, Missouri, run on a 30% methyl soyate blend. Missouri, Ohio, Michigan, and Nebraska use SoyDiesel in demonstration vehicles.”

A photo shows Kenlon Johannes standing by the rear of a Ford pickup truck. The license plate reads “Soy-Oil.”

1444. AGP–Ag Processing Inc a cooperative. 1992. Annual report: Partners in food production. 12700 West Dodge Road, P.O. Box 2047, Omaha, Nebraska 68103-2047. 24 p. 28 cm.

- **Summary:** Net sales for 1992 (year ended Aug. 31) were \$1,126.667 million, up 30.0% from \$864.675 million in 1991. Earnings before income taxes: \$43.236 million, up 0.5% from the \$43.016 million in 1991. Contains a 9-year summary of consolidated operating and financial statistics.

AGP is the largest cooperative soybean processing company in the world. “On December 2, 1991 AGP entered into a partnership agreement with Archer Daniels Midland [ADM] to purchase International Multifoods’ North American Ag Operations which included Supersweet Feeds, Supersweet Agri Centers, the Supersweet Research Farms, a Grain Division, and Masterfeeds in Canada. In conjunction with this came the acquisition of ADM Feed Corp. with its formula feed mills and pet food operations. The two U.S. feed divisions have been merged into one under Supersweet Feeds... Pet Foods was set up as a separate division in 1991.” AGP manages all these operations for the partnership [of which it is the majority partner] under the name AGP, L.P.; it “operates 19 feed manufacturing plants, 3 pet food plants and 29 Agri Centers located throughout the midwest.” The Agri Centers are “retail stores selling feed and other farm supplies.”

AGP tells the story of its origins in the book *Soybeans, Cooperatives, and Ag Processing Inc.*, by Margaret Finnerty, which is published in 1992. Address: Omaha, Nebraska.

1445. **Product Name:** Granose Hi Fruit Soya Yogert (Soymilk Yoghurt) [Nectarine & Pineapple, Fruits of the Forest, or Kiwi & Passionfruit].

**Manufacturer’s Name:** Haldane Foods Group Ltd. (Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer’s Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 908 211311.

**Date of Introduction:** 1992 October.

**Ingredients:** Nectarine & Pineapple: Soya milk, raw cane sugar, kiwi fruit, passion fruit, vegetable oil, emulsifier (vegetable mono-diglycerides), stabiliser (pectin), Bulgarian cultures, natural flavouring, natural colour (beta carotene).

**Wt/Vol., Packaging, Price:** 160 gm plastic pot. Retail for £0.49.

**How Stored:** Shelf stable, 4-month shelf life at room temperature. Refrigerate after opening.

**Nutrition:** Per 100 gm.: Energy 340 Kjoules / 81 Kcal (calories), protein 3.0 gm, carbohydrate 14.4 gm, fat 1.9 gm.

**New Product–Documentation:** Spot in SoyaFoods. 1993. Winter. p. 5. Granose, whose Soya Yogerts are brand leaders in the UK, has extended their line with 3 products containing 20% fruit and thicker, chunkier pieces. The 3 flavors are low in fat, cholesterol-free, and 100% non-dairy. They are

approved by the Vegetarian Society.

Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 4 and 8. Granose Hi-Fruit Premium Yogert, made by Genice, was launched in late 1992, with double the fruit content, 20%, in 3 flavors—kiwi & passionfruit, nectarine and pineapple, and fruits of the forest.

Labels (cups for Kiwi & Passionfruit, and Nectarine & Pineapple) sent by Genice Foods Ltd. 1994. Feb. 18. Kiwi is purple, green, and yellow on white cup. UPC indicia. Circled V logo. “Approved by the Vegetarian Society.”

1446. *Food Business (Chicago, Illinois)*. 1992. Meatless goes mainstream. Nov. 23. \*

- **Summary:** This cover story discusses the trend toward vegetarianism among mainstream Americans. It notes that: Morningstar Farms Grillers, a meatless burger made by Worthington Foods, are sold in 95% of U.S. grocery stores and supermarkets. Sales of soyfoods are expected to top \$1.4 billion by the year 2000. In a survey of what is “in” among teens, 28% of respondents said that vegetarianism is “in,” compared with 22% a year ago. A National Restaurant Association study found that the trend toward reducing meat consumption peaked in the over-65 age group. In a 1992 poll, 12.4 million adult Americans considered themselves vegetarians, almost double the number in 1985. One in five restaurant patrons won’t even go to a restaurant unless there is a vegetarian option on the menu. One British company [Haldane Foods] sells 70 million packaged soyburgers a year in the U.K.

1447. Archer Daniels Midland Co. 1992. First quarter report to shareholders, and a report on the 69th annual shareholders meeting. Decatur, Illinois. 8 p.

- **Summary:** “Your company continues to build for the future. Last year our capital expenditures exceeded \$900 million; this year we spent an additional \$600 million. In the last three years our capital expenditures exceeded two billion dollars, and that was still well below our cash flow for the same period...”

“Ogilvie Mills of Canada was acquired, along with a joint venture partnership to operate Pillsbury’s four U.S. mills. The Ogilvie acquisition also made ADM one of the largest producers of wheat starch and vital wheat gluten, a major product for the baking industry...”

“Our oilseed crushing division purchased a canola crushing plant in western Canada, further consolidating our position as the world’s leading crusher of canola... Our crushing division now operates 45 plants, crushing soybeans, cottonseed, corn germ, flax, canola, and sunflower seed, and refines the oil in 14 refineries.

“Our edible soy protein business continues to grow. A large, ultra-modern soy protein concentrate plant was commissioned at Rotterdam [Netherlands]. Our edible soy protein business—concentrate, isolate, and soy flour products—



increased 25 percent for the year. Production of Harvest Burger, our soy concentrate-based meat substitute, is selling at record levels in the U.S., Russia, and England...

“We are in a growth industry. Feeding people is our business. Each year there are nearly 100 million more people to feed on the face of the earth...

“We consistently lead the charts in sales per employee in our industry. People often ask me how we do so much business with so few people. My answer is that it’s our culture, central to everything we do. Every company has a personality, just like every person. The basis of our culture, or personality, is very simple: we stay in the business we know. We concentrate on one major objective, and that is the return to our stockholders. We remain entrepreneurial, concentrating on only those matters essential to running a successful business... We keep meetings, memos, policies, and procedures to a minimum. We treat everyone as an individual, giving him or her the tools and the authority to do the job. We don’t second-guess, and we don’t criticize for honest mistakes.”

“ADM is a company with no fixed management committees, no organizational charts, no bells, no whistles, and no gimmicks—just good pay and hard work.” Address: Decatur, Illinois.

1448. **Product Name:** [Alisana Soya Yogert (Peach & Passion Fruit, Black Cherry, Strawberry, Orange, or Natural)].

**Manufacturer’s Name:** Arkady ADM Iberica S.A. Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer’s Address:** Carretera de Hosplatalet 42, Cornellà de Llobregat, Barcelona, Spain. Phone: 050981-6611.

**Date of Introduction:** 1992 November.

**Ingredients:** Black cherry: Habas de soya descascarillada, starter *Bulgarius*, pulpa de cerezas, y zumo de fruta.

**Wt/Vol., Packaging, Price:** 4 x 120 gm cups packed under

a long paperboard sleeve.

**How Stored:** Shelf stable, 4-month shelf life at room temperature. Refrigerate after opening.

**New Product–Documentation:** Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 4 and 8. Starting in 1992 Genice started to sell its soy yogurts outside the UK. First in 1992 the So Good line of soy yogurts was launched in Spain (for Arkady Iberica, an ADM-owned company located in Barcelona) with the addition of two new flavors—orange and natural. In late 1992 the Spaniards requested their own brand, so So Good was changed to Alisana; Four Soya Yogerts (120 gm each) were sold in each pack.

Label (sleeve and cup for cherry flavor) sent by Ray Pierce. 1994. Feb. 18. This colorful sleeve is 11.25 by 4.5 inches. A color illustration in orange, red, purple, green and peach on white shows scattered fruits on a white background. The lettering, which is blue and black, reads “Alisana: 4 Soya Yogerts.” The cup is cherry red and blue on white.

1449. **Product Name:** Granose {Canned Vegetarian Entrees} [Bolognese, Curry, Chilli, Bourgignonne, Italienne].

**Manufacturer’s Name:** Granose Foods Ltd. Div. of Haldane Foods Ltd.

**Manufacturer’s Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: 0908 211311.

**Date of Introduction:** 1992 November.

**Wt/Vol., Packaging, Price:** 420 gm cans. Retail for £1.39 each (11/92).

**How Stored:** Shelf stable; refrigerate after opening.

**New Product–Documentation:** Spot in SoyaFoods.

1992. Autumn. p. 5. “New Vegetarian Canned Products.”

“Produced from soya chunks or mince in sauces made from traditional recipes.” A photo shows the 6 cans. Note: Several products with names similar to these were introduced by Granose years ago. For example: Granose Curry Sauce (1978). Granose Bolognese Sauce (1980).

1450. **Product Name:** Granose {Vegetarian Cheese Spreads} [Cheese Spread, Cheese Spread with Chives, Cheese Spread with Tomato and Bacon Flavour].

**Manufacturer's Name:** Granose Foods Ltd. Div. of Haldane Foods Ltd.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: 0908 211311.

**Date of Introduction:** 1992 November.

**Wt/Vol., Packaging, Price:** 150 gm tubes. Retail for £1.15 per tube.

**How Stored:** Shelf stable; refrigerate after opening.

**New Product–Documentation:** Spot in SoyaFoods. 1992. Autumn. p. 5. “Vegetarian Cheese Spreads and Patés in a Tube.” These products are “all made from vegetarian cheese [probably cheese made with cow’s milk but without rennet], reconstituted skimmed milk/whey powder, butter, textured vegetable protein and other natural ingredients... This launch coincides with the relaunch of Granose Vegetarian Patés.”

1451. **Product Name:** Cajun Burrito.

**Manufacturer's Name:** Season's Harvest.

**Manufacturer's Address:** 52 Broadway, Somerville, MA 02145. Phone: 617-628-1182.

**Date of Introduction:** 1992 November.

**New Product–Documentation:** Talk with Ademar Reis. 1993. Nov. 29. He introduced this consumer retail product in Nov. 1992. He makes a whole line of vegetarian burritos, but this is the only type that contains soy. He uses TVP from ADM.

1452. **Product Name:** Realeat Vegebangers (Frozen Frankfurters) [Meaty Style, or Vegetable Style].

**Manufacturer's Name:** Haldane Foods Group.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 908 211311.

**Date of Introduction:** 1992 December.

**Wt/Vol., Packaging, Price:** 1 lb and 1½ lb bags. Retail for £1.39 and £1.99 respectively.

**How Stored:** Frozen.

**New Product–Documentation:** Spot in SoyaFoods. 1993. Winter. p. 5. “More Vegebangers from Realeat.” Two new varieties of frozen Vegebangers were launched in Dec. 1992 by Haldane Foods. Both contain no meat, but the Meaty Style products have a more meaty flavor, being made from a seasoned blend of vegetable proteins.

1453. **Product Name:** [So Good Soya Frutty {Soy Yogurt} (Peach & Passion Fruit, Strawberry, Black Cherry)].

**Manufacturer's Name:** Genice Foods Ltd.

**Manufacturer's Address:** Made in Clywd, Wales, UK. Distributed in Sweden, Norway, and Denmark (see below).

**Date of Introduction:** 1992.

**Wt/Vol., Packaging, Price:** 120 gm plastic cup.

**How Stored:** Shelf stable, 4-month shelf life at room temperature. Refrigerate after opening.

**New Product–Documentation:** Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 10. In late 1992 the So Good line was launched in Sweden, Norway, and Denmark using, in part, the pre-existing Granose distribution network. One product, named So Good Soya Frutty, was sold to all 3 Scandinavian countries. The label was in Swedish and the names of all 3 distributors were on it. The distributors are: (1) Kung Markatta AB, Hjalmsberg, S-705 95 Orero, Sweden (this is Genice’s second largest export market); (2) Alternative Mat A/S, AVD Import, Kubben, 2150 Arnes, Norway; (3) Grön Distribution, Hoje Gladsaxe Torv 2, 2860 Soborg, Denmark (Genice has not dealt with Grön since 1992).

1454. Barnard, Neal D. 1992. A physician’s slimming guide: for permanent weight control. Summertown, Tennessee: The Book Publishing Co. 79 Illust. Index. 22 cm. [4 ref]

• **Summary:** This is a plant-based (vegan) program for weight loss and increased energy. It calls for as little salt, oil, and sugar (SOS) as possible. One should eat plenty of complex carbohydrates (which are found only in plants) and a moderate amount of protein. Oils and fats contain twice as many calories per gram as carbohydrates or protein (9 vs. 4). Examples of complex carbohydrates are brown rice, whole-grain bread or toast, oatmeal, kernels of corn, black beans, potatoes, etc.

“The rate at which your body burns calories is called *the metabolic rate*.” Different people have different metabolic rates. Dieting slows down your metabolism and makes it harder to lose weight. Therefore dieting is not a good approach to losing weight. A better way is to have a good diet and get plenty of exercise. One should also aim to loose excess weight slowly—which helps to keep it off.

This is not a cookbook; it contains only two recipes. The only soyfoods called for in this book are soymilk and TVP®. Address: M.D., President, Physicians Committee for Responsible Medicine, Washington, DC.

1455. Broehl, Wayne G., Jr. 1992. Cargill: Trading the world’s grain. Hanover, New Hampshire, and London: University Press of New England (Dartmouth College). xx + 1007 p. Illust. Index. 24 cm. [500+\* ref]

• **Summary:** Cargill, one of the world’s great multinational commodity trading companies, is one of the largest corporations in the USA, with annual sales of over \$44 billion. It is the largest privately owned U.S. company, with almost all ownership in the hands of the Cargill and MacMillan families. In descending order of size in this industry are Cargill, Continental Grain, Louis Dreyfus, and Bunge y Born. All are privately owned, each by a dominant

family. Only Cargill has been in the USA from its birth. Though it is now 125 years old, Cargill has had only five CEOs (p. xvii).

The soybean arrives: Cargill purchased and stored some soybeans in 1935 and continued the same small transactions in 1936, though none remained in inventory at the year's end. Cargill began to take notice of soybeans in mid-1936 when the Chicago Board of Trade initiated a soybean futures contract as a new source of revenue. Cargill leadership expressed little interest in soybean processing, which was already in the hands of "big fellows" like ADM, Staley, Allied Mills, Glidden, and Spencer Kellogg & Sons (p. 447).

Cargill's work with soybeans is discussed extensively, starting with Chapter 15, "Cargill in World War II" (p. 617+). In 1942 President Roosevelt persuaded Congress to pass price-control legislation, creating the powerful OPA, the Office of Price Administration. It had a dramatic effect on U.S. agriculture. Meat and poultry were increasingly in short supply, so feed grains took priority over food grains. Corn and even surplus wheat was used as feed. Labor shortages in agriculture led to more mechanization and fertilizer use rose dramatically (p. 618). Soybeans became a key ingredient in animal feeds, and Cargill began purchasing in larger quantities. The OPA ceilings on soybean meal were so low that it was much more profitable for crushers to put their meal into their own feeds, rather than sell it. Against this background, in Jan. 1943, Cargill announced the purchase (for \$300,000) of a soybean mill and feed plant, the Iowa Milling Co., in Cedar Rapids, Iowa [from Joe Sinaiko]; the initial push came from Julius Hendel.

Then in Oct. 1943 additional soybean crushing capacity was acquired through the purchase of the Plymouth Processing Mills (capacity: 75 tons/day of soybean meal) of Fort Dodge, Iowa.

Later that same month another soybean crushing plant was purchased—the Illinois Soy Products Company (soybean crushing capacity: 3,900 bushels/day) of Springfield, Illinois. These were small facilities and none used solvent extraction, but they represented a beginning; soybean crushing soon became a major part of for Cargill as the company worked to diversify (p. 665-66).

In May 1945, again with Hendel's leadership, Cargill purchased the Honeymead Products Co. in Cedar Rapids, Iowa. It had a feed plant with a capacity of 300 tons/day and a soybean solvent extraction plant (designed by Allis-Chalmers Co.) which initially had a capacity of 50 tons/day, expanded to 130 tons/day. Cargill called Honeymead their "West Side Plant"—but they forgot to buy the Honeymead name. The Andreas family sold the company because Dwayne Andreas had been classified 1-A in the draft (the highest priority for being drafted). The Andreas family owned the property and Dwayne agreed to join Cargill. Cargill asked the draft board for and received a 3-month deferment. At the end of that time the Pacific war was

over. Andreas soon became a vice president of Cargill, the youngest in the company's history. "He thought like an owner" (p. 682, 687). Later, other Andreas family members resurrected the Honeymead name for their new oilseed crushing plant at Mankato, Minnesota (p. 683).

Rocky reconversion after World War II. During World War II there was a major increase in scientific livestock feeding, using nutritionally balanced feeds—in response to the shortage of all feeds. Cargill already owned the profitable Blue Square feed operation, but they wanted to expand it. So in Oct. 1945 Cargill purchased (for \$1.6 million) the entire capital stock of Nutrena Mills Inc., a leading Midwest feed manufacturer with three mills (Kansas City and Coffeeyville [Coffeyville], Kansas; and Sioux City, Iowa) and a combined capacity of 23,000 tons/month. Nutrena, now 25 years old, was one of the industry pioneers in both feeds and feed sacks (p. 688).

During World War II, the all-out agricultural production in the USA led to record output. Total production of soybeans increased from 78 million bushels in 1943 to 193 million bushels in 1945. Yet Cargill and others had great difficulty in obtaining the soybeans they needed. Gilbert C. Fite describes the agricultural revolution that took place during the war (p. 695-96). There was great pressure on government price administrators to loosen or remove controls; when they finally started to do, in May 1946, inflation followed. Julius Hendel wisely remarked: "The cure for high prices is high prices." The ceiling price on soybeans was not removed until 17 Oct. 1946 (p. 703).

Dwayne Andreas has a good idea and receives a \$10,000 bonus (p. 704). Nutrena and Honeymead cause organizational problems. Centralization vs. decentralization. Tension between the Grain Division and the Oil Division—especially over soybean purchasing. The Alfred P. Sloan model of decentralized management at General Motors is widely imitated. By the early 1950s Cargill was decentralized (p. 707-712).

Chapter 17, "Korean War and Tradax beginnings." After World War II came the cold war, Truman Doctrine, NATO, and the Korean War. In agriculture, the New Deal policies of the 1930s continued essentially unchanged (p. 737-38). In 1950 Cargill purchased a new oilseed / soybean processing plant (capacity: 700 tons/day) in Chicago for more than \$2 million. By 1951 the Oil Division was renamed the Vegetable Oil Division (p. 745). The Cargill Oats Case of May 1954. In Oct. 1954 ADM pleads guilty to CCC allegations. Selling oat futures vs. soybean futures (p. 761). 1952—Dwayne Andreas "resignation" after his unauthorized trip to Russia in April. He went on to an outstanding career, first with his family's company, then as an executive with the company that bought it, the Grain Terminal Association (later called Farmers Union Grain Terminal Association), and finally as CEO and a major owner of ADM. He was replaced by M.D. "Pete" McVay as head of the Oil Division (p. 762-

64).

1954—Cargill begins international trading with the move to Montreal of Kerrgill, a subsidiary of Cargill Internacional. It was soon renamed Tradax Canada Ltd. Cargill's headquarters on Lake Wayzata, Minnetonka, Minnesota (p. 774-75).

1953 Jan.—Dwight D. Eisenhower is inaugurated as president. In July 1953 he settled the Korean war. Ezra Taft Benson advocates a new farm policy, a return to a free market economy and flexible price supports (p. 776-77). 1955 Sept.—Julius Hendel retires. He was considered the “dean of grain trading.” He had pioneered Cargill's grain laboratory in the 1920s, introduced scientific mixed feeds in the 1940s, and designed Cargill's renowned training program. (p. 782-85).

Eisenhower's second term in office (1956-60) is an era of farm surpluses. The P.L. 480 or “Food for Peace” shipments were an “heroic attempt to insulate some of this production from commercial channels.” They totaled over \$1 billion each year from 1956 into the 1960s. In 1959 Cargill had sales of \$1.089 billion, making it the 34th largest company in the USA (p. 786-87). The Chase Manhattan Bank's consulting report and analysis of Cargill is blunt, credible, very positive but with many important suggestions for change; the soybean was the star of the Oil Division (p. 868-71). Summary of Cargill, 1963-1991 (p. 874-75).

Photos show: (1) Dwayne Andreas ca. 1950 (p. 682). Address: Dartmouth College, Hanover, New Hampshire.

1456. Cardenas, Danilo C.; Legaspi, Benjamin M. 1992. The status of soybean production and utilization in the Philippines. In: Increasing Soybean Production in Asia: Proceedings of a Workshop. 1992. Bogor, Indonesia: CGPRT Centre. 187 p. See p. 119-35. Held 21-24 Aug. 1990 at Phitsanulok, Thailand. [8 ref]

• **Summary:** Contents: Introduction. Production situation: Production trends, economics of soybean production, price trends, marketing of soybean. Philippine foreign trade situation: Soybean imports, soybean exports. Soybean utilization. Government policies/programs affecting the industry: Policies, programs. Major problems besetting the local soybean industry. Conclusions.

The soybean, also known locally as “utao,” has become an increasingly important economic crop in the Philippines. Yet in 1987 (the latest year for which figures are given) only 5,698 tonnes (metric tons) were harvested from 6,490 hectares, having a value of 45,169,000 pesos. This represented only 0.02% of the total Philippine quantity of agricultural production, and only 0.05% of total farm area and value. Philippine soybean production peaked at 11,466 tonnes in 1982. Most of the country's soybeans are grown in the southern Mindanao region (72.1%), followed by northern Mindanao (10.0%) and central Mindanao (9.4%). Imports of soybeans and products have steadily increased

since Philippine farmers do not produce enough soybeans to meet local demands; the value (FOB US\$) rising from \$61,989,000 in 1980 to \$127,981,000 in 1988. The main imports are soybean meal (accounting for 86.87% of total import value), refined soybean oil (5.19%), soybeans (4.18%), and crude soybean oil (22.3%). Before March 1986 the National Food Authority (NFA) had the sole authority to import soybeans, but with the introduction of the trade liberalization program, importation has reverted to private firms. In 1989 the country's major sources of imported soybeans were China (which supplied 42% of total imports), Brazil (34%), and the USA (15%). Exports, which are negligible, have grown from \$136,000 to 1,123,000 during the same period. The main exports are soy sauce (accounting for 91.03% of total value), salted and fermented soybeans [fermented black soybeans] (*tausi*, 3.34%), and soybeans (2.65%).

Table 7 lists and describes “Soybean-based food products popularly used in the Philippines.” Fermented products include soy sauce, salted and fermented soybean (*tausi*), tempe (tempeh), soybean paste (miso), and soybean curd (fermented tofu cubes; a soft cheese-type product with a salty but mild flavor, eaten as a relish or cooked with meat and vegetables). Non-fermented products include soybean sprouts (*toge*), soybean cheese (*tokwa* [tofu]), Geerlings cheese (taho, soymilk curds; a sweet dessert or snack food for children), soybean milk, and roasted soybean (soy coffee).

“In terms of food usage, Filipinos, unlike other Asians, have not developed a taste for soya-based products... Most of the soy products available in the market are either made at home or in family-operated shops.

“It is interesting to note from the report of Co (1987) that small scale food processors engaged in manufacture of taho and tokwa preferred locally grown beans to imported ones. They claimed that local soybeans have a distinctive ‘fresh’ quality which imparts a finer and smoother texture to their finished products providing a longer shelf life than that produced from imported beans.

“Recently, several developments in the local economy have signaled a revival of interest in the use of soybean as food. In 1980 Nestle Philippines Incorporated began commercial production of powdered soymilk products and later a baby soya-cereal food formulation and a soya-based meat extender which is produced primarily for export to other Asian countries. Today Nestle Philippines, in co-operation with the Land Bank of the Philippines, the Regional Offices of the Department of Agriculture and PCARRD is encouraging local production of soybean and had adopted a no importation policy.

“Some years ago, the use of TVP also gained a permanent foothold in the local processing industry. It is used in the manufacture of ground meat products and as a meat extender. Almost all TVP used in the country is

imported except for the locally manufactured full-fat TVP which is being produced by the Vitarich Corporation, one of the biggest feed millers in the country. The company has built a full-fat soya processing plant capable of utilizing 900 MT [metric tons] of soybean per month. Unfortunately, all its raw soybean requirements are imported from the U.S. and China.

“Soybean flour, protein concentrate and protein isolates are the newest soya-based products and are now used extensively in the country for the formulation of meat emulsion products. All raw materials are imported and there is no local manufacturing capability at present.”

“Programmes: As early as the 1970s, the government tried to involve itself to some degree in boosting national soybean output, despite the low priority it accorded to soybean in general. It was an involvement borne out of an urgent need to meet the growing requirements of the local feed milling and livestock industry, rather than of a need to address the high incidence of malnutrition among Filipinos. Accordingly, the government launched a number of programmes to improve soybean production, most of which failed to achieve their goals. At present, only the PCARRD-coordinated Soybean Pilot Production Programme continues to function. This programme was initiated in late 1983.” Address: 1. Supervising Science Research Specialist, Philippine Council for Agriculture, Forestry, and Natural Resources Research and Development (PCARRD); 2. Dep. of Agriculture Bureau of Plant Industry, Los Baños National Crop Research and Development Centre. Both: The Philippines.

1457. Cox, Peter. 1992. Why you don't need meat. Revised ed. London: Bloomsbury Publishing Ltd. [ix] + 278 p. Foreword by Linda McCartney. Illust. Index. 24 cm. [373\* ref]

• **Summary:** A convincing argument against meat after the advent of Mad Cow Disease in the UK.

Contents: Acknowledgements. Foreword by Linda McCartney. 1. Everything you're not supposed to know. 2. Apocalypse cow! 3. Pigtales. 4. The A to Z of good health. 5. Greener cuisine. 6. Everything you really need to know. 7. The composition of vegetarian foods.

Table of food groups for a vegan diet (p. 171), designed by Dr. Michael Klaper; the section on Legumes in this table mentions “Soy products (milk, tofu, tempeh, Textured Vegetable Protein, etc.). Recipes include: Scrambled tofu (with “1 x 297 gm {10½ oz} carton tofu, drained,” p. 189). Tempeh marinade (p. 190). Tofu marinade (p. 191-92).

In Chapter 6, the subsection on beans states that they “are a marvelous source of protein, fibre, iron, the B vitamins and, when sprouted, vitamin C... beans can either look like beans or they can be transformed into one of the many delicious and nutritious bean products which supply the food value but not the same beany experience. Among these are

soya milk, tofu, TVP (textured vegetable protein), tempeh, soya yogurt and ice cream, marinated tofu and soya cheeses of every description.

“Second, beans can be a musical vegetable if you don't follow the three golden rules of cooking them:” (1) Let them soak overnight in water. (2) “Don't cook beans in the soaking water, and never cook them without rinsing them.” (3) Don't under-cook beans. They should be soft enough to squash against the roof of your mouth using normal pressure from your tongue. Address: First Chief Executive of the Vegetarian Society of the UK, England.

1458. Brandenburg, Fred. 1993. Update on soybean crushing in Canada (Interview). *SoyaScan Notes*. Jan. 13. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In recent years, Canada's crushing industry has undergone an extensive rationalization and American companies have become major players. ADM has a crush plant in Ontario which crushes canola and soybeans, and a crushing plant in Alberta which crushes canola. Central Soya is now a partner in CanAmera, which has crush plants on Ontario, Manitoba, and several other places.

In Aug. 1984 Central Soya Co. bought Victory Soya Mills (built in 1944) in Toronto, then shut it down in March 1991. The buildings have been standing inactive for several years on the Toronto waterfront. Central Soya would like to have the property rezoned as residential, tear down the mill buildings, then sell the property and make a lot of money. They would use that money to upgrade their plant in Hamilton, Ontario, which has both a soybean crushing line and separate canola crushing line.

What used to be the CVOP soybean crushing plant in Hamilton (formerly owned by Canada Packers, Inc.) was sold to Central Soya Co., Inc. in Sept. 1989. The plant came to be named Central Soya of Canada Ltd. In March 1992 Central Soya of Canada Ltd. and CSP Foods formed CanAmera Foods, a joint venture, combining their crushing and refining operations, and together bought all the crushing and refining interests of Maple Leaf Foods (formerly Canada Packers Inc., including refineries in Toronto and Montreal, and a crush plant and refinery in western Canada). CSP had several crush plants. Address: Secretary/Manager, Ontario Soybean Growers' Marketing Board, Box 1199, 175 Keil Dr., S., Chatham, ONT, N7M 5L8, Canada. Phone: 519-352-7730.

1459. **Product Name:** Organic Textured Soy Flour [Chunks, Pieces, or Bits].

**Manufacturer's Name:** Great Lakes Organics. Renamed Organic Processing Corporation.

**Manufacturer's Address:** 1430 Clifton Rd., Xenia, OH 45835. Phone: 1-800-647-2326.

**Date of Introduction:** 1993 February.

**Ingredients:** Organically grown soybeans.

**Wt/Vol., Packaging, Price:** 25 lb bags.

**New Product–Documentation:** Talk with Stuart Sapadin of Atlanta, Georgia. 1992. Sept. 18. This company (whose ad he saw in *Vegetarian Times*) makes a TVP-like product from expeller pressed, organically grown soybeans. No solvents are used in the extraction process. Note: This is the same phone number as that owned by Bill Bolduc of Organic Processing Corp., 1430 Clifton Rd., Xenia, OH 45385.

Talk with Jim Leuba who grows soybeans organically near Dayton, Ohio. 1993. Feb. 12. He sells some of his soybeans to Bill Bolduc for his organic TVP—which is on the market. Bolduc also brokers some of Jim’s organic soybeans to ADM; they are used to make tofu in England by a company owned by ADM.

Talk with Bill Bolduc, president of Organic Processing Corporation, 305 N. Walnut St., Yellow Springs, Ohio 45387. 1993. Aug. 16. Bill just returned from visiting with his cousin David Bolduc, who owns a bookstore in Boulder, Colorado. Bill’s business is going well. Originally he wanted to call his product “Organic TVP” but ADM (which owns the TVP trademark) would not agree to let him use or license this term. So he has decided to call his product Organic Textured Soy Flour. The term “hexane free” appears on the label. Bill thinks (and Soyfoods Center agrees) that this is the first commercial organic textured soy flour made without hexane solvent processing. Another company makes the product for him; the first production run was on 15 Jan. 1993, yielding 20,000 pounds. At his warehouse, his company does the screening into 3 sizes: chunks (the biggest, thumb-nail size), pieces (the size of a kernel of corn), and bits (the smallest, granules). He will be sharing a booth with several other Midwest natural foods at the NFM show on the East Coast this fall. The product is on the market and interest in the product has been outstanding. He has not been able to produce enough to supply some of the larger accounts that want to handle the product. But he expects to be able to have sufficient capacity in September/October. He is waiting for a twin-screw extrusion cooker right now. Most of the product is sold retail. Stow Mills (in Chesterfield, New Hampshire) is the product’s largest distributor. They sell it in bulk to natural- and health food stores in the northeast. Some is also sold wholesale to Little Bear / Westbrae, which uses it in their new burritos-brand Vegetarian Chili; they label it as Textured Organic Soy Flour.

1460. Murphy, Patricia A.; Wang, Huei-ju. 1993. Total genistein and daidzein content of soy foods. *FASEB Journal* 7(4, Part II):A742 (Abst. #4283).

• **Summary:** “The major soy isoflavones, genistein and daidzein, inhibit tyrosine protein kinase, are weakly estrogenic, have moderate antioxidant activity and may have an anticarcinogenic effect by preventing oxidative damage.” Heat processing changes the distribution of glucosides but not the total isoflavone content. Twenty commercial soyfoods

and 10 institutionally prepared foods were evaluated for isoflavone content by HPLC photodiode array detection. Total genistein and daidzein ranged from 20 to 1,550 ppm and 0 to 750 ppm (dry weight basis), respectively. High protein soyfoods, such as whole dry soybeans, textured soy flour (TVP), tempeh, and soymilk yielded total isoflavone contents that may provide an anticarcinogenic dose (0.7 to 2.0 mg per gm of food). Address: Food Science and Human Nutrition, 2312 Food Sciences Building, Iowa State Univ., Ames, Iowa 50011.

1461. Shurtleff, William; Aoyagi, Akiko. comps. 1993. *Soya in Canada—Bibliography and sourcebook 1855-1993: Detailed information on 780 published documents (extensively annotated bibliography), 221 commercial soy products, 115 original interviews (many full text) and overviews, 93 unpublished archival documents.* Lafayette, California: Soyfoods Center. 305 p. Subject/geographical index. Author/company index. Language index. Printed March 9. 28 cm. [1098 ref]

• **Summary:** This is the most comprehensive book ever published about soybeans and soyfoods in Canada. Its scope includes all aspects of the subject from 1855 to the present. It is also the single most current and useful source of information on this subject, since 90% of all records contain a summary/abstract averaging 164 words in length.

This is one of more than 40 books on soybeans and soyfoods being compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyfoods Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features: 39 different document types, both published and unpublished; every known publication on the subject in every language—including many in French; 115 original Soyfoods Center interviews and overviews never before published. Thus, it is a powerful tool for understanding the development of soybeans and soyfoods in Canada from their earliest beginnings to the present.

Compiled one record at a time over a period of 17 years, the bibliographic records in this book feature (in addition to the typical author, date, title, volume and pages information) the author’s address, number of references cited, original title of all non-English publications together with an English translation of the title, month and issue of publication, and the first author’s first name (if given).

It also includes details on 221 commercial soy products, including the product name, date of introduction, manufacturer’s name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to use the bibliography, a complete

subject and geographical index, an author/company index, a language index, and a bibliometric analysis of the composition of the book (by decade, document type, language, leading periodicals or patents, leading countries, states, and related subjects, plus a histogram by year) are also included. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

1462. *SoyaFoods (ASA, Europe)*. 1993. Profile of Haldane Foods. 4(1):6-7. Winter.

• **Summary:** “The Haldane Foods Group is the largest specialist health food manufacturer in the UK and Europe and has a long history of producing soya foods. With 12 companies in the Group, Haldane has grown steadily over the past 10 years, acquiring new companies to complement its product range.

“Its parent company, Archer Daniel Midlands of Decatur, Illinois, is the world’s largest soya processor and was the first company to patent the process for producing textured soya protein. Seven years ago, ADM’s British arm, British Arkady bought its biggest customer, Direct Foods of Petersfield, Hampshire, known for its Protoveg brand. It then went on to acquire Haldane Foods of Leicester, which produced dry mixes and burger mixes and from which it took its name.

“More acquisitions followed including Vegetarian Feasts, Vegetarian Cuisine, Realeat Foods, Genice Foods, Saucemasters, Snackmasters, Granose Foods, Regular Tofu, Unisoy Milk ‘n’ By-Products, and The Dietburger Company.

“The company’s headquarters is now in Newport Pagnell the site of Granose Foods, but there are five factories in all. The site at Leicester continues to produce dry goods, soya milk is produced at Stockport, vegetarian margarines, ices and yogurts are produced at Wrexham, North Wales, snack meals and sauces in Newport, South Wales, and frozen and canned products at the Granose Factory in Newport Pagnell.

“However, it was the acquisition of Granose Foods which had a major impact on the business. Granose, or the London Health Company as it was then called, was founded 100 years ago by a group of businessmen who were members of the 7th Day Adventist Church. The main products were wheat cereals, health biscuits and nut-based foods. Even today many of the staff at Newport Pagnell are still committed 7th Day Adventists and the factory still works to a pattern to accommodate their Sabbath, which is a Saturday.

“A total of 200 people work for Haldane. All the factories are animal free and many products are Vegetarian Society approved. The company has recently attained BS 5750, the British Standards Institution Certificate of Quality Assurance (ISO 9000). Stock control is fully computerised with all incoming raw materials, factory production and dispatches from warehouses carefully recorded and controlled using hand-held ‘Psion’ units to read bar codes.

“As a result of its acquisitions Haldane’s product range is extensive with over 200 products. But the core of the business is vegetarian with soya products featuring high on the list. One of the company’s best selling product is Sosmix, a dry sausage mix based on textured vegetable protein, which is suitable for vegetarians. Sosmix contains no cholesterol and is free from artificial colours and preservatives and is available in three varieties, plain, Country Herb, Cheese and Onion. Over 1 tonne of Sosmix is sold every day, equivalent to over 12 million sausages per year.

“Last year Haldane launched over 50 new products, including two new Realeat frozen VegeBangers® Meaty and Vegetable Style. The Meaty Style VegeBanger® is a seasoned blend of vegetable proteins whilst Vegetable Style is a blend of fresh vegetables. These products meet the needs of different vegetarians. Both are completely meat free and carry the Vegetarian Society seal of approval.

“The new VegeBangers® owe part of their success to the installation, at the Newport Pagnell site, of a new sausage making machine capable of producing up to 50 million vegetarian sausages per year. This machine, of which there are only 10 in the world and only two in the UK, can produce skinless sausages which have the body and texture of a normal sausages. Normally, skinless sausages are made in a skin or casing, which can be animal based or synthetic, and which is then removed after cooking, but this machine does not need skins or casings. The sausages are moulded into shape under pressure and are then forced out of the machine before freezing. Up to 8000 sausages can be produced per hour. Peter Fitch, who has been Haldane’s General Manager and guiding force since the very beginning is proud of the company’s achievements and sees a bright future.

“Some time ago we recognised that there are two types of vegetarians—the moral and ethical ones and those concerned with healthy eating. The purists prefer products which do not mimic meat, whilst others want a tasty alternative to traditional meat meals. Fears about BSE [bovine spongiform encephalopathy = mad cow disease] and other aspects of animal farming mean that the trend to vegetarian alternatives is likely to continue. We hope to meet that need and we are keen to expand more into the mainstream grocery market, without compromising our principles’

“Haldane appears to have no shortage of ideas for new products. Last year also saw the launch of a new Light Soya Milk and Soya Creem and Hi-Fruit Soya Yogerts. About two thirds of its products are sold in specialist health food shops as branded products, and the remaining one third, often own label, in supermarkets. In Europe, Haldane has a limited presence at the moment, selling soya yogurts in Spain, and a small range in Scandinavia, France and Holland.

“For further information please contact Mr Peter Fitch or Sarah Batten, Haldane Foods Group, Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, UK, tel: (+44) 0908

**HALDANE FOODS GROUP - SOYA PRODUCT RANGE****DIRECT FOODS**

**Protoveg dry mixes:** Beef Style Chunky, Beef Style, Mince, Natural Mince Unflavoured, Smokey Mince Snaps

**Protoveg Menu:** Sosmix\* (3 varieties), Burgermix\*

(2 varieties), Sizzles (smokey bacon flavour), Minced Soya and Onion Mix, Soya Bolognese Mix, Soya Mince with Vegetables, 5 Grain Burgermix\*, Jumbo Grills, Chicken Style Savoury Bake, Nut & Grain Bake, Lentil & Bean Bake, Mushroom Bake, Nutburger

**Healthy Snax, Wholemeals (3 varieties)**

**UNISOY**

Soya Milk (2 varieties), Soya Yogart (3 varieties)

**HERA**

**Meals (10 varieties eg vegetable curry, Vegetable Chilli)**

**Soups (Farmhouse Vegetable and Goulash)**

**REALEAT**

**Dry mix:** VegeBurgers® (3 varieties), VegeBangers® (2 varieties)

**Frozen foods:** VegeGrills®, VegeBangers® Economy, VegeBangers® (Meaty Style and Vegetable Style)

**GRANOSE**

Soya Margarine, Soya Milk (4 varieties including Light and Calcium Enriched), Soya Creem, Soya Yogert (4 varieties), Hi-Fruit Yogert (3 varieties).

**Frozen foods:** Nut & Sesame Burger, Soya Frankies, Vegetable Grills, Vegetarian Sausages, Sweet Sensation Ice Cream (4 varieties), Vegetable Chilli, Toad in the Hole

**Dry mixes:** Nut Roast Mix\* and Cashew Roast Mix\*, Lentil Roast Mix, Brazil Roast Mix, Sausfry.

**Canned products:** Bologna, Mock Duck, Sausalats, Goulash, Ravioli, Soyapro (Beef, Chicken and Weiners), Dinner Balls, Mexican Bean Stew, Chinese Tofu, Bolognese, Chilli, Curry, Parisienne, Italienne, Bourguignonne.

**Spreads:** Hazelnut Paté, Soya Bean Paste, Cheese Spread (tomato and bacon flavour)

**SO GOOD**

**Yogarts (4 varieties)**

**Frozen desserts:** Tofu Dessert (2 varieties), Strawberry Bombes, Tofu Delight Bars.

\* Also available in catering packs

211311, fax: (+44) 0908 210514.

“Haldane Foods Group–Soya Product Range

“Direct Foods: Protoveg dry mixes: Beef Style Chunky, Beef Style, Mince, Natural Mince Unflavoured, Smokey Mince Snaps

“Protoveg Menu: Sosmix\* (3 varieties), Burgermix\* (2 varieties), Sizzles (smokey bacon flavour), Minced Soya and Onion Mix, Soya Bolognese Mix, Soya Mince with Vegetables, 5 Grain Burgermix\*, Jumbo Grills, Chicken Style Savoury Bake, Nut & Grain Bake, Lentil & Bean Bake, Mushroom Bake, Nutburger Healthy Snax, Wholemeals 13 varieties.

“UnisoY: Soya Milk (2 varieties), Soya Yogart (3 varieties) -

“Hera:

“Meals (10 varieties, e.g. vegetable curry, Vegetable Chilli)

“Soups (Farmhouse Vegetable and Goulash)

“Realeat:

“Dry mix: VegeBurgers® (3 varieties), VegeBangers® (2 varieties)

“Frozen foods: VegeGrills, VegeBangers® Economy, VegeBangers® (Meaty Style and Vegetable Style)

“Granose: Soya Margarine, Soya Milk (4 varieties including Light and Calcium Enriched), Soya Creem, Soya Yogert (4 varieties), Hi-Fruit Yogert (3 varieties).

“Frozen foods: Nut & Sesame Burger, Soya Frankies, Vegetable Grills, Vegetarian Sausages, Sweet Sensation Ice Cream (4 varieties), Vegetable Chilli, Toad in the Hole

“Dry mixes: Nut Roast Mix® and Cashew Roast Mix®, Lentil Roast Mix, Brazil Roast Mix, Sausfry.

“Canned products: Bologna, Mock Duck, Sausalats, Goulash, Ravioli, Soyapro (Beef, Chicken and Weiners), Dinner Balls, Mexican Bean Stew, Chinese Tofu, Bolognese, Chilli, Curry, Parisienne, Italienne, Bourguignonne.

“Spreads: Hazelnut Paté, Soya Bean Paste, Cheese

Spread (tomato and bacon flavour)

“So Good: Yogarts (4 varieties)

“Frozen desserts: Tofu Dessert (2 varieties), Strawberry Bombes, Tofu Delight Bars.

“\* Also available in catering packs.”

1463. *SoyaFoods (ASA, Europe)*. 1993. Exhibition report [SIAL in Paris]. 4(1):7. Winter.

• **Summary:** “SIAL in Paris is always one of the biggest and best attended food product exhibitions and 1992 was no exception. Soya foods were well represented and some new products were launched including Celia’s new *Biostar Blinis* pancake mix; a new soya and rice dessert from Laiterie Ladhuie, frozen soya based meat analogues from Phytikos, Germasoja from Abbaye de Sept-Fons (see p. 5 for details of these products).

“Other companies presenting soya foods included: Sojinal, France—a range of soya products including soya paste, milks, desserts, meals; Zonnatura, Netherlands—soya milks, desserts and vegetarian meal replacements; Tonputs, Netherlands—frozen Soyaschnitzel, Soyaburger and Soyasausage; Bakker Lekkerkerk, Netherlands—the *Vivera* range of chilled and frozen meat alternatives; l’Abbé Bisson, France—biscuits with soya, raisins or chocolate; Vitagermine, France—Soya bars and biscuits; Yeo Hiap Seng Ltd. Singapore—Soyasauce, soya drinks and salted soya beans; Minerve SA, France—*Soja Plaisir* range of soya based sauces, bean sprouts and bean sprout salads; Céréral, Wander, France—Soya based drinks, desserts, pastas, sauces, Pains Grillé, biscuits; FPS, France—vegetable protein ingredients; Distriborg—soya drinks, desserts, sauces, meals, biscuits and pastes; and Tivall Vegetarian Food Products, Israel—vegetarian meat alternatives.

“Dusseldorf, Germany was the venue for FIE 92. Of the 451 international companies present several major soya protein companies exhibited including: Solnuts, Netherlands—showing their new range of custom-made food ingredients; Worlée GmbH, a German company, specialising in dried ingredients and soya products; Edelsoja, Germany—soya protein ingredients; Dutch Proteins and Services, Netherlands—soya protein products; Protein Technologies International, Germany—isolated soya proteins; A.E. Staley Manufacturing Co., US—Gunther range of soya ingredients; Mandarin Soy Sauce, Inc., US—liquid and dried soyasaues; ADM Ingredients Ltd., UK—flours, flakes, grits, concentrates, isolates and textured products; Solbar Hatzor, Germany—*Contex* textured soya concentrates; Celia Technologies, France—dehydrated soya milk; GMB Proteins, UK—Bontrae textured soya proteins; Central Soya Aarhus, Denmark—soya protein concentrates; Cargill, Netherlands—defatted soya flours, grits and textured soya proteins; Alternative Food Ingredients (AFI), France—soya proteins and fibres; Sogip, France—soya flours, concentrates and textured soya products; Stern, Germany—full fat soya flours, grits, concentrates,

isolates, textured proteins, soya bran, full fat soybean snacks (expanded with hulls) and *Sternpur* lecithin.”

1464. Pinault, Pascal. 1993. Re: Work with tofu and tofu products in Martinique. Update on soyfoods in the Caribbean. Letters to William Shurtleff at Soyfoods Center, April 2 and 27. 4 p. and 5 p. Handwritten, with signature. Plus list of his products and prices, resumé, and photos of his home, equipment, and Morne-Vert.

• **Summary:** Pascal saw and ate tofu for the first time in May 1980 when he was living in India, while visiting some friends in Poona (Maharashtra). He bought 1 pound of tofu at a tofu shop but he is not sure if they were making the tofu in a back room of the shop or at some other place. “I suppose this tofu manufacturing plant in Poona was an offshoot of the Rajneesh Ashram, which was very active at that time and place.” Pascal lived in Goa, south of Bombay, from 1976-1980; there he baked bread leavened with palm wine. He learned most of what he knows about soyfoods while living and working, mostly in health food stores or health farms (see attached resume), in the Catskill Mountains area of New York from 1981 to 1987. There he learned to make tofu for his personal use (not for sale) by adding lemon juice to hot soymilk then pressing it in a cloth. During two other trips to India in 1982-83 and 1986 he found and bought chunks of a dry soy protein product resembling TVP which must be cooked in water. He found this soy protein product very interesting for a country like India which has such a shortage of protein, however the price was high—about 10 rupees/kg compared with 2½ rupees/kg for wheat.

In Jan. 1988 he and his family moved to Martinique. “I was compelled to make tofu for myself and my family because there was no other vegetable protein available in Martinique, except for this chunky TVP. I was still using lemon juice instead of nigari and making 2 pounds of tofu at a time. Then in 1991, as I started to import Japanese food products from France (umeboshi, seaweeds, amasaké, etc.), I ordered a small booklet on making tofu using nigari. Plus I had an excellent book (*Les Aliments Fermentés Traditionnels*, by Claude Aubert [1985]) in which I found recipes and nutritional details on many foods like tofu, okara, sufu, tempeh, amasaké, and, in general, all the foods subjected to lactic acid fermentation. In Martinique he has been making an average of 12 to 20 pounds of tofu every week since Oct. 1991 when he moved with his family to mountainous Morne Vert. Occasionally he makes larger amounts for a health food store that sells it or when he caters for groups. His main work is to introduce and popular tofu and soyfoods in Martinique. He would like to expand his tofu and vegetarian “traiteur” (catering) business; his main problem is lack of funds, so he plans to apply for financial aid.

The water he uses to make his tofu comes straight from a spring a mile up in a beautiful mahogany forest. He

also makes sprouts—mostly alfalfa, mung bean, and clover, but sometimes wheat grass. He uses most of the tofu he makes to produce second generation products such as tofu mayonnaise, hot squash pies with miso-tofu topping, tofu & cocoa (or carob) sweet pie, tofu salad, spring rolls (*Nems*).

“I know of two vegetarian restaurants in town (Fort-de-France) that make their own tofu and serve it to customers, but no one in Martinique uses tofu as extensively as I do, thanks to my 7 years’ stay in the Catskill Mountains. In fact, it takes a long time to get people used to tofu in an island where Creole culinary habits are still well-established.”

One of the restaurants that makes tofu is Le Second Souffle, owned by Mr. Gerard Sainte-Rose (27 Rue Blenac, 97200 Fort-de-France, Martinique, FWI 0033. Phone (596) 63-44-11). He has owned this vegetarian restaurant for quite a while now and is mostly interested in reviving the consumption of local fruits and vegetables. “Gerard is the only person in Martinique that I actually saw growing and harvesting soy beans. That was 2 years ago. He had grown soybeans on a piece of agricultural land in Ducos, a town near Le Lamentin, which is not far from the capital city of Fort-de-France (Martinique). He got the soybean seeds from a friend in St. Lucia (a Caribbean island just south of Martinique). Mr. Sainte-Rose harvested only a few soybeans; they were small but healthy looking. He is an organic gardener who sells his products out of his restaurant. He presently has a 6 hectare farm where he grows organic vegetables for his restaurant. Two years ago we had an agreement to set up a tofu plant together in his restaurant. He promised me a job (that’s when I gave him my recipes), and he even started to acquire some material for making tofu. But he never followed through. That’s when I started making tofu by myself, even without the proper material setting. He even bought some of my tofu. I think he would probably be interested in growing more soy, if approached very tactfully, and if he sees financial interest without having to pay a counterpart. He is an interesting person with a lot of good ideas,” but he tends to be hard to work with as a partner.

On St. Lucia one can find the “Soy Place” in Castries, the main town in St. Lucia. They make tofu there, sell it, and cook it for the food-counter [take-out] part of the shop. People grow soy beans on St. Lucia and on Dominica, maybe with help from Canadians. They make tofu and cook it. One “Ital” rastafarian restaurant in Roseau, Dominica, serves tofu pâté and deep-fried, plus “accras” (fried okara dumplings). “In Dominica I heard of two other places where they make and serve tofu. Ital food, which has absolutely nothing to do with Italian food, is the name that the Rastafarians give to the main dish of their mostly vegetarian diet (except for fish). In this main dish, chunky textured vegetable protein is sometimes used in place of fish. “In the Caribbean, including Martinique, Ital food is available in quite a few Rastafarian places, which they call their ‘ghetto.’ These are restaurants open day and night that include reggae ‘sound systems. The

chunky TVP remains the main vegetable protein they use; they also use it in other dishes such as vegetarian cous-cous, etc. They are, in my experience, a bit hostile to tofu, seitan, or other such new foods, at least in Martinique; maybe when it comes from a white person they presume it is not vegetarian.” He has heard of (but has not seen or tasted) smoked tofu dried over a fire using green banana leaves.

Pascal is interested in vegetarianism and macrobiotics. He likes tempeh and would like to start now to make and introduce it to Martinique, where it is totally unknown.

Concerning seitan: “I first started to make seitan in Martinique under the same circumstances as tofu—lack of vegetable proteins other than beans. Not having ready-made gluten, I first made it by washing white-flour wheat dough. That was a very long and messy process but was well worth it. Then I found wheat gluten in the Tama catalogue—the company I mentioned that specializes in Japanese products. That’s when I started to sell seitan—though there is not much demand for it. I learned to make seitan while living in the Catskill mountains of New York from a macrobiotic British girl friend who also taught me how to make amazake.

Update of April 27, 1993. “Since my family sent me tempeh starter (thanks for giving them the address), I have started small-scale production.”

Update of July 17, 1993. “I first made amazaké, in Martinique, in 1992. Even though I gave samples to quite a few people, nobody has seemed to be interested in this product, or to realize the versatility of it! So, I keep ordering it from Tama, packed in glass jars, and make my own once in a while, using ‘Cold Mountain’ starter. I’ve been a bit disappointed by this non-reaction. Amasaké being one of my favorite sweeteners, which I value more than any breakfast or desert cereal. My youngest daughter ate it as a first ‘solid’ food when she was only 5 months old, along with bananas.”

“If you allow me a personal remark about my work in Martinique, I find it extremely ungratifying. The public here is highly suspicious of anything new and foreign. My little business doesn’t allow me to assume my financial obligations, and I sometimes consider going back to the U.S. But I still want to try harder, at least for a few months.”

Note: This is the earliest English-language document seen (Oct. 2010) that uses the term “amasaké” to refer to amazake. Address: “Caplet,” 97226 Morne Vert, Martinique, French West Indies 0033. Phone: 596 55-56-57.

1465. *Grocer (The) (London)*. 1993. Mince alternative to beef up veggie sales—Haldane Foods. April 3. p. 33. \*

1466. Meyer, Edwin W. 1993. Development of the world’s first food-grade soy protein concentrate, Dr. Sidney Circle, and textured soy flour (Interview). *SoyaScan Notes*. April 7. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The first two commercial food-grade soy protein concentrates were Promax and Promosoy. Promax

was developed by Lou Sair at Griffith Laboratories. Promosoy was developed mainly by Sidney Circle, first noncommercially at the Glidden Co., where it was called Protein 70, since it contained 70% protein on a moisture free basis, and then commercially at Central Soya. Promax and Promosoy were made by different processes. Promax was made by the acidulated water leach process (also called water leach or aqueous acid leach), whereas Promosoy was made by the aqueous alcohol leach process (also called aqueous ethanol leach), which takes out the low molecular weight materials. The latter process, which is only used for making concentrates, was developed at the Northern Regional Research Laboratory by Dr. Allan K. Smith's group after Dr. Circle left the group. Today, virtually all concentrates are still made by one of these two processes. To the best of Ed's knowledge, Promax was on the market 6-12 months before Promosoy. Sid Circle was head of all protein research at Glidden and at Central Soya during the 1950s. Promosoy was introduced on a small commercial basis in about 1960-61; it was first made at a large pilot plant on Laramie Avenue in Chicago, then by 1962-63 at a real food plant at Gibson City, Illinois.

Glidden's uncommercialized concentrate was always called either Protein-70 or Pro-70. That name may have also been used by Circle at Central Soya until shortly before it was commercialized as Promosoy. Circle was at Central Soya at the time the product was commercialized. At the time, Ed was director of Research at Central Soya and Circle was Assistant Director of Research in charge of all research on proteins.

Circle left Central Soya in 1967 to go to Anderson Clayton Foods in Richardson, Texas, where he was Director of Protein Research from 1967-75. Anderson Clayton recruited Dr. Circle with a very attractive offer because they wanted to get into the soy protein business; they wanted a casein replacer to make imitation cheese, but the latter never worked out largely because they could never figure out how to make soy protein melt. Kraft tried to do the same thing. In 1972 Dr. Ralph Sand went to work at Anderson Clayton on the same imitation cheese project.

But there was another reason Circle left Central Soya. Ed had hired a very brilliant and rather independent young protein chemist, Nicholas Catsimpoolas. "If you knew Sidney, you had to be with him for a while to love him. He was a guy who would take your report and dot the i's, cross the t's, and that kind of stuff. He and Nicholas did not get along too well." So Circle (who is no longer living) left of his own volition.

Concerning textured soy protein concentrate: William Atkinson at ADM had developed a good process for texturing soy flour, so Central Soya decided to try texturing their soy protein concentrate, Promosoy. This research was done under Ed's direction because in 1968, Central Soya changed the laboratory over to corporate research and Ed

became director of protein research; prior to that he had been director of all research reporting to a vice president of the Chemurgy Division. L.D. Williams now became director of all research, and he reported to Dr. Windsor W. Cravens, a vice president. Promosoy was successfully texturized using a Wenger extrusion cooker and the resulting product, Response, was launched in 1975. Response went on to become one of Central Soya's two most important soy protein products—the other being textured soy flour. Ed does not feel that textured soy flour will gradually loose ground to and be replaced by textured soy protein concentrates—because of economic factors. The main market for textured soy flour now is as an extender for ground beef; it is also used in chicken products and pizza toppings. It is most widely used in places where you have to eat what you are served—such as school lunch programs and the military. It is not used in retail products.

ADM also makes a textured soy protein concentrate named Arcon T. It is used in their veggie burgers, which Ed has seen promoted on TV.

Ed talked with Walter Wolf recently and he verified that Danny Chajuss was at the NRRL in Peoria, working in Allen Smith's group on soy protein concentrates, for about 3-4 months. Address: 1701 N. Sayre Ave., Chicago, Illinois 60635. Phone: 312-637-0936.

1467. Meyer, Edwin W. 1993. The soy protein isolate industry and market (Interview). *SoyaScan Notes*. April 7. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Dr. Meyer, who has been a leading soy protein researcher for The Glidden Co. and Central Soya for about 50 years, would estimate that Protein Technologies International (PTI) manufactures about 60% of the soy protein isolates in the USA and ADM makes the remaining 40%. There are no other significant manufacturers of soy isolates in the USA.

Bob Boyer and Frank Calvert played a major role in convincing Ralston Purina to get heavily involved with soy protein isolates. Before Boyer and Calvert arrived in 1962, Central Soya was America's only manufacturer of edible isolates with their Promine—which was launched in late 1959.

In mid-1980 ADM entered the soy protein isolate business when they bought the Central Soya chemurgy plant at Chicago. They operated it for a few years, then found out that it wasn't profitable to operate in Chicago. So they moved the equipment down to Decatur, Illinois. He has heard that half the equipment was in mothballs. Address: 1701 N. Sayre Ave., Chicago, Illinois 60635. Phone: 312-637-0936.

1468. Meyer, Edwin W. 1993. The declining role of research at Central Soya and ADM (Interview). *SoyaScan Notes*. April 7. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Central Soya has downsized their staff a bit, rearranged their research staff, and has become much more

oriented toward sales and much less interested in research. It almost looks as if Ferruzzi and the younger “figure-pushing types” are looking at the company for what cash it can bring in now. It is a very short-term approach, with little thought for the future. Ed’s contract with Central Soya ends on 31 April 1993.

A researcher with decades of experience, Ed feels that ADM has also de-emphasized research; he would not be at all interested in working for them. “They have run roughshod over their research operation until it no longer amounts to much.” The man who heads up their research department, Edward Campbell, is really an oil marketing man—and a very good one. They had a good research at ADM until Frank Horan retired as director of research; William Atkinson was also there during that period. Address: 1701 N. Sayre Ave., Chicago, Illinois 60635. Phone: 312-637-0936.

1469. McDermott, Ron. 1993. Increasing use of wheat gluten in foods in America (Interview). *SoyaScan Notes*. April 13. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ron sees the use of wheat gluten increasing in the USA. Steve Demos of White Wave is starting to use more gluten. [Note: In June 1989 White Wave launched Meatless Healthy Franks, a tofu hot dog which had wheat gluten as the third ingredient. In Sept. 1990 White Wave introduced Meatless Healthy Bologna, a tofu-based product which also had wheat gluten as the third ingredient. In Feb. 1993 White Wave launched Traditional Style Seitan, in which wheat gluten was the main ingredient.] Ivy Foods also makes some nice gluten products. There are a number of advantages of using wheat gluten and soya together. The wheat gluten often improves the texture and flavor in meat alternatives, while sometimes lowering the fat content of the combination. The soya generally reduces the cost of the combination.

About a year ago ADM (Archer Daniels Midland Co.) purchased Ogilvie (pronounced OH-gul-vee) Mills in Keokuk, Iowa. So now ADM is one of the world’s largest manufacturers of wheat gluten, but most of this gluten is going into the bread baking industry. Address: Vice President Research & Technology, Worthington Foods, 900 Proprietors Rd., Worthington, Ohio 43085-3194. Phone: 614-885-9511.

1470. Perkins, Dave. 1993. Update on The Drackett Co. (Interview). *SoyaScan Notes*. April 14. Conducted by William Shurtleff of Soyfoods Center. Followed by a letter of April 16.

• **Summary:** The Drackett Co. was organized in 1910; its founder and first president was Philip Drackett. The second president was Harry R. Drackett, who died in March 1948. His son, Philip, became the third president shortly after H.R.’s death. Drackett has a number of significant “firsts” to its credit. Drano was America’s first commercially successful drain opener. Windex created the glass cleaner business. Drackett commercialized the first textile fiber (named

Drackett Soybean Azlon) made from plant proteins. The Azlon Research Facility was probably closed in about 1949. In the “Notes to Financial Statements” section of the 1950 Annual Report, there is confirmation that the Azlon Research Equipment was idle for a year.

The Drackett Co. still exists in Cincinnati, Ohio (as a subsidiary of S.C. Johnson Wax) at 2 locations. The original 5020 Spring Grove Ave. location is an R&D and administrative facility. Dave is located at 201 East 4th St. in downtown Cincinnati, at executive headquarters. The company was sold to Bristol-Myers in Nov. 1965. On 31 Dec. 1992 it was sold to its present owner S.C. Johnson & Son, Inc. (Racine, Wisconsin), whose products include Johnson’s Wax, Pledge furniture polish, Glade air fresheners, and Gel shaving cream. People who would know more about The Drackett Company’s work with soya are Fred Wilson (who came from the Ford Motor Co., was manufacturing vice president for many years, and is now retired in Florida), and Chuck Butke (in R&D, retired in Cincinnati).

Perkins notes that one main reason that Drackett sold its agricultural operations to ADM in 1957 is that they were making a major push to advertise their consumer products (especially Windex and Drano) on television. In 1957 they sponsored a show that became Wagon Train, then after that Maverick. Some of the funds that came from their sale to ADM were invested in this TV advertising program.

The Drackett Co. has both annual reports and a periodical titled “The Drackett Dotted Line” for the period 1936-1957 during which Drackett was involved with soybeans.

Presently S.C. Johnson & Son, Inc. is shutting down all Drackett operations in Cincinnati; before the end of the summer of 1993 there won’t be any Drackett people left in Cincinnati, but about 70 of those people will be “hired” by Johnson to move up to Racine. There haven’t been any Drackett manufacturing operations in Cincinnati since the late 1970s or early 1980s. They had plants at Urbana, Ohio and Franklin, Kentucky—both of which are also being phased out. The name Drackett will cease to exist by about the end of 1993.

Concerning Sharonville and Evendale, Evendale became a city in 1951. When Drackett originally moved into this area in the 1940s, they moved onto property in Hamilton County that was very near Sharonville—the nearest local post office. In reality, it was probably just unincorporated property that officially became the city of Evendale in 1951. Address: Director, Public Relations, 201 East 4th St., Cincinnati, Ohio 45202-4178. Phone: 513-632-1800.

1471. Butke, Charles “Chuck.” 1993. The Drackett Company’s work with soy proteins (Interview). *SoyaScan Notes*. April 15 and May 7. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** When the Ford Motor Co. sold its soy protein

operations to The Drackett Co. in Nov. 1943, Robert Boyer, Frank Calvert, William Atkinson, and Charles Robinette went to Drackett as part of the deal. Charles (now age 71) started working for Drackett in 1946 in the R&D lab at Cincinnati as a chemist and chemical engineer; he had never worked for the Ford Motor Co. For the first 6 months, Fred Wilson from Ford worked in the same lab with him; then Fred moved out to production. His work was to try to increase the amount of protein extracted from the defatted soybean meal.

There was a man named J.F. Johnson who was a very well educated and competent man. He was one of the first graduates of MIT [Massachusetts Institute of Technology, Cambridge, Massachusetts]. From Procter & Gamble, he came to work for Mr. H.R. Drackett, the company's president. He designed Drackett's original soybean crushing and protein extraction plant on Spring Grove Ave. in Cincinnati. His design and process was different from that used previously by Ford. At this plant Drackett processed soybean oil meal, oil, and Drackett Soybean Lecithin (in 55 gallon drums by 1945). Johnson designed a system whereby the oil was extracted from the soybeans using hexane solvent, and the crude soy oil was run into huge tanks and allowed to settle for 7 days. The good oil was decanted off the top and the foots on the bottom were reprocessed and yielded lecithin. Johnson's good soy oil was good enough to use in home cooking; it was used in consumer sampling but it was never sold commercially.

When Ford's soy protein operations went up for sale, H.R. Drackett thought that his soybean crushing operations and Ford's technology for spinning soy proteins would make a perfect marriage.

First Drackett set up an experimental soy protein plant at Spring Grove, then they made it into a commercial plant next to their soybean extraction plant at Sharonville, Ohio, which was crushing about 55,000 bushels/day of soybeans. This plant was later said to be at Evendale (even though it never moved) either for tax purposes or because city boundaries moved.

Charles had a spiral-bound catalog titled "Drackett Proteins" (which he sent to Bob Griffin at Drackett about 6 weeks ago in response to an enquiry related to Drackett company history) that described the three types of industrial isolated soy proteins made and sold by Drackett when he arrived in 1945—Protein 110, Protein 112, and Protein 220. The first two were low-viscosity proteins of low molecular weight used in paper coatings and sizings. The Protein 220 was used very widely in water-based paints. The names of these proteins were later changed to Ortho Protein—of which there may have been different types. A man named Sam Wise (now deceased) held one of the original patents for making water-based paints. Mr. Drackett sold that patent to a big paint company so that they could get into the water-based paint business.

Drackett made and sold Soybean Azlon (spun soy protein fibers) from about 1946 to 1949. Their main customer was the American Hat Corporation (in Connecticut), which used it in felt hats. Chuck is absolutely certain that the Azlon was sold commercially because he was in charge of approving the shipments to go out. It had very good felting properties. Drackett made about 1,000 to 1,500 lb/day of Soybean Azlon, cut the fibers into lengths of about 2½-3½ inches as desired by the hatter, tied them into loose uncovered bales with cord, and shipped them. There were also two other smaller companies that used Azlon. At the time, H.R. Drackett had suits and hats made for his sales force that contained Azlon.

Drackett also had a small operation that made plastics, and he is sure that they received 1-2 orders for these in the form of 3-foot diameter bases for large industrial fans. Not much of the plastic was sold and Butke thinks this was the only application for which it was sold commercially. He does not recall which company ordered the plastic bases.

In 1949 Drackett shut down its plant that was manufacturing Azlon, quit making isolated soy protein, and also shut down some of its soy protein research. Charles was moved out of soybean research into the laboratory doing research on soybean oil. Bob Boyer left Drackett, then rewrote the patents for making Azlon to make them suitable for production of edible soy protein fibers. When Boyer left, Frank Calvert became director of research for Drackett.

Drackett did considerable work on edible soy protein products—a fact that is not well known. Bill Atkinson's TVP grew out of this work. It started when a group of Seventh-day Adventists from Worthington Foods of Worthington, Ohio (located just north of Columbus, Ohio) came to Drackett (in Cincinnati, Ohio) and asked if Drackett could develop an edible soy protein—because they didn't eat meat. They even gave Drackett some seed money to work on the project. Bill Atkinson took charge of the project in about 1956; he worked with Ed Lankheit (pronounced LANG-kite, he is now age 76 and lives in Park Hills, Kentucky) and a lady researcher. Drackett sold granules all the time. To make these granules they took the flakes from the solvent extraction plant, ran them through an alkali extraction process to extract the protein, which is then precipitated with an acid. It is filtered and dried to make small and hard granules of isolated soy protein. They then used a hot water or steam extraction on the granules to try to get rid of their raw beany flavor—to no avail. So they mixed the granules with beans and chili sauce to mask the beany flavor. The texture of the cooked granules closely resembled that of ground meat, but the flavor was pretty poor. This product was never commercialized, but it did evolve into the TVP developed later by Atkinson at ADM.

In mid-1957 Drackett sold its soybean operations to ADM. ADM wanted Drackett's two industrial soy protein products, Atkinson's work with edible textured soy proteins,

and the other people and expertise in the edible area. ADM also bought Drackett's library, laboratory notebooks, etc. Roger Drackett had hired a group from Ohio State University survey the future potential of soy proteins. They concluded that another 25 years of R&D would be needed to make the soy protein operations financially successful. Drackett took the money from the sale to ADM and invested it in TV ads for consumer products like Windex and Drano.

Charles went to ADM as part of the deal—along with about 9 other researchers, including William Atkinson. Charles worked for ADM at the plant in Evendale from 1957 to 1960. The soybean crushing and soy protein operations were continued as before except that ADM added a new Ortho Protein product—which was less expensive because it was not bleached as much with hydrogen peroxide. Bleaching was one of the most expensive steps in the process. In 1960 Charles left ADM and went back to work for Drackett at their plant in Spring Grove, where they made Windex, Drano, etc. At some point ADM moved the soybean crushing and protein equipment out of the plant in Evendale but he does not know where they took it. They sold the soybean and grain storage facilities to Central Soya, and they sold the many empty buildings to other small industries. Address: 9541 Flick Rd., Cincinnati, Ohio 45247. Phone: 513-741-4289.

1472. Wilson, Fred. 1993. Work with the Ford Motor Company and The Drackett Company on soy proteins (Interview). *SoyaScan Notes*. April 16 and 28. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Fred started working for Henry Ford in 1933; he was a guide in Greenfield Village and museum, while he was in high school. In 1935 he went to work as a research chemist for Robert Boyer at the research lab. in Dearborn, Michigan. They were extracting oil on a small scale from soybeans, breaking it down into various derivatives, converting it to stearic acid, and also extracting the protein. He also did some work in the soybean fields. He worked on the “plastic car” whose body was made from phenolic resin (made from carbolic acid) plus some soy protein and fiber. In late 1941, Mr. Ford gave Boyer's group part of an air-frame building (about 120 by 250 feet, located opposite the Ford airport) to use as a pilot plant, they expanded their work on spun soy protein fibers. Mr. Ford bought the group some Saca Lowell spinning equipment (pilot plant size), carding mills and frames, felting machines, even looms so they could make carpets and upholstery, mixing the fiber with rayon (mostly) and some cotton. Then he supervised the production of the spun soy protein fibers. Bill Atkinson, an excellent chemist, worked with him, mixed the spinning solution that was run through spinnerettes. Charles Robinette handled the spinning lines. Walter Jenks was a research chemist, who later went to Drackett. But Boyer was the man most responsible for developing the spun soy protein fibers. Ford's

main use of soybeans was for oil. Much of the remaining defatted soybean meal was sold for use in feeds, mostly to the poultry industry.

The group produced about 1,000 lb/day of soy fiber and all of it was used experimentally. Fred does not recall any of this fiber ever being used in any automobiles sold by the Ford Motor Co. But the fiber was used in “service cars” owned by the Ford Motor Co. for its own use. The soy fiber was mixed with sisal (a coarse fiber), then the mixture was formed into a pad and sprayed with latex to hold the pad's form. This material was used as padding under the seats of the service cars. Fred does not recall that this fiber was ever used in any type of upholstery for any cars. During World War II, the spun soy fiber was mixed with rabbit fur and made into experimental hats by some hat company. They did some work with Munsing, which blended the soy fiber with other materials to make underwear. Henry Ford and Bob Boyer each had some of this underwear.

In 1943 The Drackett Co. purchased all of Ford's soy protein operations and Fred went to Drackett at that time. He started as technical supervisor in the soy protein plant at Sharonville (the correct city name; not Evendale) making Ortho Protein, whereas Chuck Butke and Robert Boyer worked at the lab in Cincinnati. The protein was coagulated, drum dried and oven dried, then ground to a fine powder and bagged in 100-lb bags. Some of the Ortho Protein was sold to Sherwin Williams for use in water-based paints. Eventually Fred became superintendent of the entire Sharonville facility (both solvent extraction and protein).

Fred does not recall any of the soy protein fiber (Azlon) ever being sold by Drackett for use in commercial products. Specifically he does not recall its ever being used in commercial felt hats by the Hat Company of America—but he admits that Chuck Butke (who is younger and has a better memory) may well be correct in his recollection that it was sold for use in hats. The problem with the fiber was that it had poor tensile strength, was brittle, and had no elasticity. A large amount of the soy oil that Drackett produced was sold to Procter & Gamble for use in margarine.

Concerning the plastic molding compound and preforms, they were made from phenolic resin with rayon cord plus some soybean fiber (a filler, left over after the soy protein was extracted from soybean meal) and some soybean hulls. The basic concept came from Ford.

When Drackett sold its soybean operations to ADM in 1957, Fred stayed with Drackett and worked on consumer products. ADM ran the soybean crushing plant and protein plant for about 5 years, then they shut it down; they sold the silos and grain storage facilities and cleaning or reconditioning equipment to Central Soya.

After Boyer left Drackett he and his wife, Betty [Elizabeth Szabo Boyer], continued to live in Cincinnati (on North College Hill St.). Then Betty died in Cincinnati [in Feb. 1963]. Fred thinks he remarried later [April 1965] to a

lady [Nancy Ann Miller] who worked in a bank in St. Louis, Missouri.

For more information about Drackett, contact Jean Drackett (Mrs. Roger Drackett) in Naples, Florida, or Cincinnati, Ohio (Phone: 513-561-7418), or their daughter, Cecil (Phone: 513-561-2627). Address: Florida. Phone: 813-784-6560.

1473. Meyer, Edwin W. 1993. Historical notes on textured soy flour (Interview). *SoyaScan Notes*. May 10. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The Glidden Co. sold a textured soybean meal mainly to John Morrell & Co. for use in pet (especially dog) foods—but also to some other dog food companies. Morrell was a big meat processing firm with headquarters in Chicago and a big plant in Ottumwa, Iowa. At that time all dog food was canned (no dry or semi-moist) and this textured soy flour kept a certain amount of its integrity during retorting—so the dog-food people liked it.

The solvent defatted soybean meal was run through an expeller (also called a screw press) to give it texture, then the resulting cake was broken up into bits or grits. No die was used. Glidden's early texturizing process, dating from the late 1930s, was covered by a 1939 patent issued to Arthur Levinson and James Dickinson. These two inventors never got much credit for their invention (in part because they unfortunately did not use the term "texturize") and it played no role in the subsequent technology based on extrusion. If Levinson and Dickinson had used the key term "texturize," their patent would have been "prior art" making it more difficult for people to subsequently be issued patents on extruded materials or texturizing. An expeller, which was designed to press the oil from oilseeds, is less well suited to texturization than an extruder—which has no openings along the barrel and which gives more sheer working and alignment of the protein to create that meatlike texture.

Many people think (incorrectly) that William Atkinson was the original inventor of textured soy flour, but the Atkinson patent (issued Jan. 1970; No. 3,488,770) does not dominate the industry—even though Atkinson's patent was a very early, creative, and important one, and ADM did a very good job getting TVP on the market early. Ed is quite sure that Atkinson developed his patent independently and with no knowledge of Flier's work. However the dominant U.S. patent now is the one issued to Flier (pronounced FLEER) of Ralston Purina Co. on 24 Feb. 1976 (No. 3,940,495). There was a long time between application date and issuance date for the Flier patent. The Flier patent expires in 1993.

Part of the following is based on Ed's first-hand knowledge and part on second-hand knowledge (hearsay). After the Flier patent was issued, Ralston Purina filed a lawsuit against ADM in a federal court in southern Illinois. Swift (who was also extruding soy flour) may have been included in the suit. Sometime after the filing of the suit,

Ralston Purina and ADM settled out of court. Ed thinks that as part of the settlement, they cross-licensed each other (so that each could use the best parts of the other's patent). After the ADM settlement, Ralston Purina went after all others in the industry who were extruding to take licenses. If they didn't take a license, Ralston could charge them with infringement, and the cost of the infringement can be very high. So Cargill and A.E. Staley each took a license. Then Ralston Purina sued Far-Mar-Co. Wenger supported Far-Mar-Co because Wenger felt that patent would curtail the sale of their machinery. Ed was subpoenaed by Far-Mar-Co to give testimony under oath. Far-Mar-Co people learned, via Wenger, that there was a man in Decatur, Indiana, who was using a Sprout-Waldron extruder in the early 1960s to produce mixed, extruded feeds. Ed and his coworkers (Steve Frank and Bud Campbell) examined that extruded material in their lab at Central Soya. After some time that case was decided in court and Far-Mar-Co lost it [in mid-1984].

Then Ralston Purina went after Central Soya—which had its own patent issued to Gabor Pusski in 1976. Ed Armstrong, an internal attorney, suggested that Ed Meyer and Art Konwinski (Central Soya's extrusion man), take a very close look at the process by gathering detailed data. Based on that the attorneys concluded that Central Soya was infringing on Ralston Purina's patent. So Joe Gillespe, a vice president at Central Soya, made a deal with Ralston, that Central would sell Ralston several feed operations they had in Brazil at a very attractive price, plus several patents on industrial proteins. In exchange, Central Soya got a non-exclusive royalty-free license in perpetuity.

Ed has long wondered why the patent examiner didn't cite an "interference," which applies when two inventors make claims that overlap or are on the same subject. Then the patent office must conduct an investigation to see who has priority. This story does not appear in the history books and Ed is not sure that it should be.

"Over the years I have learned to be very skeptical of what I read because so much is said in an advertising mode rather than in a definitive or factual mode." People say that their products are used in various applications when they are not—which is wishful thinking in the hope that new customers will try the product. Address: 1701 N. Sayre Ave., Chicago, Illinois 60635. Phone: 312-637-0936.

1474. Shurtleff, William; Aoyagi, Akiko. comps. 1993. The Drackett Company's work with soybeans and soy proteins: Bibliography and sourcebook. Lafayette, California: Soyfoods Center. 79 p. Subject/geographical index. Author/company index. Language index. Printed June 25. 28 cm. [81 ref]

• **Summary:** This is the most comprehensive bibliography ever published about The Drackett Company's work with soybeans and soy proteins. It has been compiled one record at a time over a period of 18 years, in an attempt to document

the history of this subject. It is also the single most current and useful source of information on this subject available today, since 99% of all records contain a summary/abstract averaging 341 words in length.

This is one of more than 40 bibliographies on soybeans and soyfoods being compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyfoods Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features: 17 different document types, both published and unpublished, every known publication on the subject, and 10 original Soyfoods Center interviews. Thus it is a powerful tool for understanding the development of Drackett's work with soya.

The bibliographic records in this book feature (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English publications together with an English translation, month and issue of publication, and the first author's first name (if given).

It also includes details on 7 commercial soy products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to make best use of this book, a complete subject and geographical index, an author/company index, a language index, and a histogram by year are also included.

Brief Chronology of The Drackett Company's Pioneering Work with Soybeans and Soy Proteins:

1910. The Drackett Co. is organized as a partnership. Its main business is distributing a line of bulk chemicals to industrial users. In 1933 the company adopted its present name.

1918-1928. Drackett is America's leading manufacturer and seller of U.S.P. grade Epsom salts.

1923. Drackett starts production of Drano (a chemical composition used to clear clogged drains), which soon becomes its first major consumer product.

1934-36. Drackett starts production of Windex (a spray that cleans windows without water), which soon becomes its second major consumer product. Both products are made at Drackett's plant at 5020 Spring Grove Ave. in Cincinnati, Ohio.

1935-36. Laboratory studies at Drackett lead to the design of an original pilot plant process for oil extraction by the solvent method. Laboratory research is also conducted on the extraction of soy protein from defatted soybean flakes.

1935, fall. Drackett submits samples of industrial soy protein to the Champion Coated Paper and Fiber Co. for examination as to use in paper coatings in place of milk

casein.

1936. A pilot plant for making industrial soy protein begins operation at 5020 Spring Grove Ave. in Cincinnati, Ohio.

1937 Feb. A solvent extraction pilot plant begins operation on Spring Grove Ave. and continues for 3 years.

1938 April. The world's first soy protein fiber (and the first experimental textile fiber made from a plant protein) is exhibited by Robert Boyer of the Ford Motor Co. at the Fourth Annual Conference of the Farm Chemurgic Council in Omaha, Nebraska.

1938. Drackett purchases 60-75 acres of farmland at Sharonville, Ohio (several miles north of the Spring Grove Ave. headquarters), for a solvent extraction plant. Ground is broken in Sept. 1939.

1940, first quarter. Drackett starts to work cooperatively with the Ford Motor Co. to develop a soybean protein suitable for spinning into fiber from which upholstery cloth could be made.

1941 Jan. Soybean oil extraction begins at the Sharonville plant. Drackett's initial investment was about \$1.5 million. The plant has an annual capacity of 35,000 tons of soybean meal and 15 million lb of soybean oil.

1941. Drackett's first industrial soy protein isolate is sold commercially. 15,018 lb were produced and 7,039 lb were sold during the year. By 1942 this soy protein isolate was brand-named Alysol. Some of it was sold to the Ford Motor Co. to make experimental soy protein fibers.

1943 Nov. Drackett purchases the Ford Motor Company's soy protein and soybean fiber spinning operations. Robert Boyer, Francis (Frank) Calvert, and William Atkinson go to Drackett from Ford as part of the deal.

1943 Dec. 2. Drackett starts commercial production of Soybean Azlon, the world's first commercial fiber made from plant proteins. The fibers were used mainly in felt hats by the America Hat Corporation.

1944? Drackett is now making a new line of industrial soy proteins named Drackett Protein 110, 112, and 220. The first 2 are for use in paper coatings and sizings, the latter for water-based paints.

1945. The Drackett Co. is the largest soybean processor in Ohio.

1946. Drackett finishes construction of 18 new silos at Sharonville, costing \$500,000, to house 1 million bushels of soybeans.

1947, mid. Drackett's plant making industrial soy protein isolates begins operation at Sharonville. It also makes Ortho Protein and Impact Plastic Molding Compounds.

1948 March. Harry R. Drackett, the company's second president, dies. His son, Roger Drackett, is elected president of the company.

1949 July 12. Drackett's soybean plastics operations are discontinued completely.

1949. Robert Boyer leaves The Drackett Co. when it shut down its Azlon fiber spinning plant. He begins research on developing the world's first edible soy protein fibers.

1949 Sept. Drackett introduces Charge Candy for Dogs, which contains soya bean flour as a major ingredient.

1957 July 1. Drackett sells its entire isolated soy protein business to the Archer Daniels Midland Co. (ADM). William Atkinson goes to ADM as part of the deal. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

1475. Shurtleff, William; Aoyagi, Akiko. comps. 1993. Henry Ford and his researchers' work with soybeans, soyfoods, and chemurgy—Bibliography and sourcebook, 1921 to 1993: Detailed information on 439 published documents (extensively annotated bibliography), 79 unpublished archival documents, 71 original interviews (many full text) and overviews, 13 commercial soy products. Lafayette, California: Soyfoods Center. 249 p. Subject/geographical index. Author/company index. Language index. Printed May 19. 28 cm. [567 ref]

• **Summary:** This is the most comprehensive book ever published about the work of Henry Ford and his researchers with soybeans and soyfoods. It has been compiled, one record at a time over a period of 18 years, in an attempt to document the history of this subject. It is also the single most current and useful source of information on this subject, since 96% of all records contain a summary/abstract averaging 286 words in length.

This is one of more than 40 books on soybeans and soyfoods being compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyfoods Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features: 30 different document types, both published and unpublished; every known publication on the subject in every language; 66 original Soyfoods Center interviews and overviews never before published. Thus, it is a powerful tool for understanding this subject from its earliest beginnings to the present.

The bibliographic records in this book include 439 published documents and 79 unpublished archival documents. Each contains (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English publications together with an English translation of the title, month and issue of publication, and the first author's first name (if given).

The book also includes details on 13 commercial soy products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information

on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to make best use of this book, a complete subject and geographical index, an author/company index, a language index, and a bibliometric analysis of the composition of the book (by decade, document type, language, leading periodicals or patents, leading countries, states, and related subjects, plus a histogram by year) are also included. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

1476. Leiss, Richard S. 1993. History of the use of spun soy protein fibers at Worthington Foods (Interview). *SoyaScan Notes*. June 30. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Richard (whose last name is pronounced like "lease," as in "to lease a house") has worked for Worthington Foods in R&D for 28 years, from Aug. 1962 to 1968, then from 1971 to the present. He thinks that small amounts of the first commercial Worthington product to contain spun soy protein fibers were probably sold by late 1962 and definitely by 1963. These meatlike products were probably frozen at first, and then canned later. The first such product may have been the Minute Entree Fried Chicken Style in frozen form. Fri-Chik, which was canned and widely sold to Seventh-day Adventist food outlets, came a little later. The next 3 products that contained spun fibers (White-Chik, Beef Like, and Prosage) were all frozen and were introduced at about the same time (by Oct. 1963), but many Adventist food outlets did not have a frozen food case in those days so Worthington had to supply them with one. Following these, some additional products were made under the Worthington label, including Smoked Beef Style, Wham.

"When I first came to Worthington in 1962 there was a small R&D lab attached to the main food processing building; we didn't have a research facility like we have now. I recall that a new R&D building was completed in October 1964. Prior to Oct. 1964, I recall seeing a Fried Chicken Style product, containing spun fibers, being canned. After Oct. 1964 time, we began to spin our own soy protein for the first time using a pilot plant line in this building. Full-scale spinning of Worthington's Fibroprotein soy fibers probably began in about 1965. Prior to that time my recollection is that Worthington purchased most of its spun protein from Ralston Purina Co.; it was manufactured in their Louisville [Kentucky] plant. But Worthington also purchased some spun soy fiber from General Mills; it was made at their James Ford Bell Research Center and was very experimental. I don't recall the name of that product.

"In the early 1960s, about 95% of Worthington's sales were through either the church or through stores in communities where there were heavy concentrations of Adventists. So it really wasn't a very big thing. One very big thing for the company was the first IFT meeting it attended

in Kansas City [Missouri] in about 1963 or 1964. It was the first time that Worthington had demonstrated products at a national convention, and there was a lot of interest in these products.

In 1974 the first 3 Morningstar Farms products were introduced: Breakfast Patties, Breakfast Links, and Breakfast Slices. He is quite sure that initially they all contained spun soy protein fibers. However several years after they were launched, the decision was made to remove the spun soy fibers for two main reasons: (1) Making the fibers was an expensive, high-tech process which added too much to the price of each product; (2) Worthington was concerned that if, as anticipated, the Morningstar Farms line became very popular in mainstream national markets, their one spinning line would not be able to produce enough fibers to meet the demand. The “wet spun fiber” was replaced by textured soy concentrates and vital wheat gluten to give similar textures. In 1979 four more Morningstar Farms products were launched: Grillers (meatless burgers), Breakfast Strips (meatless bacon), Luncheon Slices (a new version of the 1974 Breakfast Slices), and Leanies (meatless hot dogs). None of these 4 products contained spun soy protein fibers. Thus, for most of their commercial lives, the Morningstar Farms products have not contained spun soy protein fibers.

Worthington has always had only one line for spinning soy protein fibers—located at their plant in Worthington, Ohio. This line was set it so that a second spinning table could be added to increase its capacity, but that has never been done. Even during the years when the company had a second plant at Schaumburg, Illinois (after Miles Laboratories took over Worthington in 1970), that plant never had its own spinning line.

At one point Worthington sold its Fibroprotein spun soy protein fiber to an Adventist company outside the USA. Worthington never sold it to Loma Linda Foods. Initially Loma Linda may have purchased it from Ralston Purina or General Mills; then they got their own spinning line later, in the 1970s; they bought the equipment from Dawson Mills.

Concerning the total amount of spun soy protein fiber used in Worthington food products, it increased rapidly from 1965 to about 1975, then it fell somewhat after the first three Morningstar Farms products were reformulated in the mid-1970s—but it did not fall dramatically because the 3 products were still at the introductory stage. After the amount then stabilized, and remained fairly constant until recent years when the demand for vegetarian products has increased, and with it production of spun soy protein fibers. Today, about 15-20% of Worthington’s meat alternatives contain spun soy protein fibers.

In Richard’s opinion, the legacy that Henry Ford and his researchers left in terms of food uses of soybeans is mainly in the areas of soy protein isolates (especially functional isolates; the work done by Frank Calvert and Bob Boyer at Ralston Purina) and textured soy flour (the work done by

William Atkinson at ADM). While spinning was certainly the most novel of the technologies, spun soy protein fibers are not nearly as important commercially as food-grade isolates and textured soy flour.

Richard remembers fondly the pioneering days when Bob Boyer had a lab next to his office at Worthington Foods. Boyer told Richard many anecdotes about the times he worked for Henry Ford and Richard wrote them down in his journal. “Bob Boyer was truly a gentleman. I really enjoyed him a lot.”

Richard does not recall any commercial product containing spun soy protein fibers that Ralston Purina launched during that time. They sold all their spun fibers as such to Worthington Foods.

“I’m kind of the keeper of the archives and unfortunately a lot of material has gotten out because during the years that Worthington was owned by Miles Laboratories past history was not considered to be very important.” Perhaps a record might have appeared in the *Chopletter* (an internal newsletter published by Worthington Foods). Address: Director, R&D, Worthington Foods, 900 Proprietors Rd., Worthington, Ohio 43085-3194. Phone: 614-885-9511.

1477. Rich, Robert. 1993. Re: Rich Products Corporation. Letter to William Shurtleff at Soyfoods Center, July 26—in reply to inquiry. 2 p. Typed, with signature on letterhead.  
 • **Summary:** It is immaterial to Mr. Rich whether he is referred to as Bob or Robert. He started work in the Food Section of the War Production Board in February 1942 and transferred to the War Food Administration (WFA) when that came into existence 4 or 5 months later. He resigned from the WFA in Oct. 1944.

In the early years, when Rich Products Corp. used soy protein as the protein source in its non-dairy products, it obtained the protein from defatted soybean flakes purchased from the Archer-Daniels-Midland Co. (ADM).

Bob thinks that Reddi-Whip (a dairy-based whipping cream in a pressurized can) was first sold in early 1948. Super Whip Valve Company was also a distributor of Super Whip Dairy Topping and it was owned by Illinois Creamery Supply Company. When Rich Products Corp. tried to use its Whip Topping in the pressurized can, the valve leaked; this problem was solved by reformulating the product to reduce the amount of an ingredient that was clogging the valve.

The big lawsuit between Mitchell Foods and Rich Products Corp. (Mitchell sued Rich) began in 1959 and lasted 7 years, with Rich Products winning the case in its entirety on 31 December 1966. Rich Products spent about \$500,000 defending itself in this lawsuit. Bob Rich considered this defense a matter of principle.

Rich Products Corp. did not construct Rich Stadium in Buffalo, New York, but it did purchase the naming rights in May 1973 for \$1.5 million. The facility’s first game was played on 7 Aug. 1973.

Bettercreme is a very successful new product based on the Freeze Flo process. It was first sold commercially in April 1977.

“I am enclosing several of Rich’s magazines, as well as other product booklets, that will give you information about the history of our company which started with frozen Whip Topping. The initial batches of Whip Topping were test marketed at the end of 1944 and we went into production on March 31, 1945. Our frozen Bake-Off business, which we started with an acquisition in 1969, has outgrown our frozen non-dairy business. Along the way we purchased the SeaPak Company from the W.R. Grace Company and Rich-SeaPak is now the largest breaded shrimp processor in the country. We also purchased the Casa DiBertacchi Company, manufacturers of frozen meatballs and pasta items; Byrons Frozen Foods, the country’s leading barbecue manufacturer, as well as other acquisitions including 2 radio stations and 3 professional minor league baseball franchises totaling 32 acquisitions. We will pass the billion dollar figure next year as we will be very close to that sales figure this year and we will celebrate it at our 50th Anniversary. Incidentally, we sold our milk business in 1967 which, at the time, was the largest solely owned milk company in the country.” Address: Chairman of the Board, Rich Products Corp., P.O. Box 245 (1150 Niagara St.), Buffalo, New York 14240. Phone: 716-878-8000.

1478. **Product Name:** Native Tempeh (With Soy & Millet).  
**Manufacturer’s Name:** Native Foods.  
**Manufacturer’s Address:** 71485 Painted Canyon Rd., Palm Desert, CA 92260. Phone: 619-346-2939.  
**Date of Introduction:** 1993 July.  
**Ingredients:** Organic soybeans, organic millet, water, rice starter, vinegar.  
**Wt/Vol., Packaging, Price:** 1 lb plastic bag.  
**New Product–Documentation:** Talk with (call from) Tanya Malch. 1994. Feb. 4. She started commercial production of Soy and Millet Tempeh at this new company which she founded. She sells mostly to restaurants and is looking for packaging and sealing equipment. Soy Power distributes Lightlife tempeh in the Los Angeles area and offers bulk discount, but White Wave is the main brand. Tanya used to run a restaurant named The MT Plate.

Label sent by Tanya Malch. 1994. Feb. 4. 5.5 by 8 inches. Photocopy black ink on chartreuse paper. An illustration of two natives, flying at a 45 degree angle above 3 palm trees, one with a spear, both with rings in ears and nose. One is saying “A native food from Bali,” the other “Save our Earth!” The text below the product name reads: “A clean, controlled, ‘come on’ food.” Another flyer notes that under the name Chef Tanya Petrovna she teaches cooking classes using TVP, tempeh, and seitan in southern California.

Spot in Vegetarian Times. 1996. March p. 112. Amy O’Connor writes that Tanya Petrovna is owner of Native

Foods, Smoke Tree Village, 1775 E. Palm Canyon Dr., Palm Springs, California. Phone: 619-416-0070. She makes her own tempeh, seitan, and TVP.

1479. Bolduc, Bill. 1993. Current work with soymilk and organically-grown soybeans (Interview). *SoyaScan Notes*. Aug. 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Bill Shurtleff tells Bill Bolduc that he has heard that Bolduc’s company is now making soymilk for Westbrae Natural Foods. Bolduc admits that this is correct. Shurtleff says that he cannot imagine how Bolduc is doing this, since a modern soymilk plant typically costs about \$1.5 million. Bolduc answers that he purchased the soymilk plant owned by Grove Country Foods in an auction on 4 April 1993. This plant used the University of Illinois process for making soymilk.

Note: Grove Country Foods, USA, is located at 720 S. Main St., Columbus Grove, Ohio. Phone: 419-659-5636 (office) or -2920 (plant). The two main people involved in the company were Dr. Carl Hastings and Prof. Alvin I. Nelson, both food scientists from the University of Illinois. The basic idea of the company was to commercialize new soy products and processes (such as soynuts, soy yogurt, soy ice cream, and soymilk) developed at the University of Illinois. By December 1988 they were in test production of several products but were in need of funds for commercial production and marketing. In early 1989 Grove Country Foods Canada Inc. (located in Ridgetown, Ontario, Canada) introduced Astronuts, a type of soynuts apparently made by some other company, but the company went bankrupt after 1-2 years.

Bill has modified the Illinois process for making soymilk extensively. For example, he removes the okara from the soymilk. Completing these modifications has taken several months, and his company is “now in a start-up mode making soymilk.” Their refrigeration was under-sized so they lost several loads of product to spoilage. This week they are installing another compressor, etc. The system now works very well if they go slowly, but they need to be able to produce twice as much soymilk as they presently can before he will be satisfied. Now it takes several days to produce a tanker full of soymilk. Westbrae is being patient and supportive even though the process is “a bit bumpy.”

Bill is only making Westbrae’s regular soymilks—not their Malted, which he thinks are still made by Hinoichi in Los Angeles. The only soymilk Bill makes is Westbrae’s. He ships this soymilk in a tanker to a separate facility nearby in the Midwest that packages the soymilk in Tetra Brik Aseptic cartons for Westbrae. Westbrae now has their regular soymilk (the same product sold under the same brand) made by two companies (Pacific Foods of Oregon and Bill’s Organic Processing Corp.) using two different processes. Bill started because Pacific ran out of capacity. Westbrae likes the flavor

of Bill's soymilk as well as they like Pacific's—even though Pacific's technology is much more expensive than Bill's. Bill has dramatically altered the Illinois process but he has decided not to try to patent his altered process.

Within about 2 months Bill expects to have a new soymilk product on the market with another partner (similar to Westbrae, but whose name is confidential) in a new package [perhaps an extended shelf-life (ESL) gable top carton]. After that, Bill hopes to diversify his customer base and his product mix. To do that he hopes to start by making a fresh, UHT Processed, refrigerated soy-based frozen dessert mix (for soft-serve soy ice cream) packaged at another facility, located very nearby, in 2-gallon bags with a 60-day shelf life.

Bill sees the future of soymilk packaging as being in the relatively new extended shelf life gable top carton that is sold refrigerated. This package, which is made by Tetra Pak and Evergreen, is significantly less expensive than the traditional Tetra Brik carton. It is now becoming quite popular in the Midwest and the East Coast because of its lower cost. It can cut at least \$1.00 off the wholesale price of a case (12 quarts) of soymilk, which leads to even bigger savings at the retail level. And the product has a shelf life of 60-90 days refrigerated. Co-packers nearby own the new gable-top packaging equipment. Most of America's major soymilk companies are looking carefully at this package, it requires a whole new distribution system—refrigerated trucks. Bill knows that there will be a soymilk product on the market in the extended shelf life gable top package by this fall. Bill will make it for another company. The rest is confidential. He just ran the first test batch last Thursday, and now he is doing shelf-life tests. His smaller company has several advantages over the bigger soymilk companies; his company is very lean and can move very quickly. He is not controlled by any multinational corporations.

Bill has a separate company named Organic Marketing that exports organically grown soybeans to Europe; he started Organic Marketing in about 1989 and it was the precursor to Organic Processing. Bill was acting as marketing coordinator for the Ohio Ecological Food and Farm Association (the organic growers of Ohio). First he sold a lot of organically grown soybeans to Dan Burke of Pacific Soybean & Grain, then he started exporting. He met Jerry Fowler, a British-born man who has a company named Manna International in Ontario, Canada. Bill likes very much to do business with Jerry because he has a very good overview of the market, is cooperative with the growers, and pays good money to the growers for organic soybeans. Bill exports his organic soybeans via Montreal to England, where they are used by the Haldane Foods Group (which is owned by ADM).

Update: Talk with Ron Roller, CEO of American Soy Products (ASP). 1993. Sept. 4. Bill Bolduc is making plain soymilk and shipping it up to Grand Rapids, Michigan, for

formulation and Tetra Brik packaging for Westbrae. ASP negotiated with Westbrae for a long time, but Westbrae finally went with Pacific Foods and Bolduc; there were many reasons for this but they are mostly political. Address: President, Organic Processing Corp., 305 N. Walnut St., Yellow Springs, Ohio 45387. Phone: 800-647-2326 OF.

1480. Gain, Jeff. 1993. The origins and history of the New Uses Movement. Part II (Interview). *SoyaScan Notes*. Aug. 24. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: Now enter the New Uses Council. "In 1987 a small group of us that had been involved in the New Farm and Forest Products Task Force decided we didn't want this report to die like so many government reports do. I had some calls from people like Sam Brownback (secretary of agriculture in Kansas) and Paul O'Connell (on the staff of Asst. Secretary for Science & Education, Orville Bentley)—most of whom were not on the Task Force. We talked with one another and had a few very small meetings. This was very much a small, closed group. We decided we could move our idea politically by each of us taking our own organizations and contacts and creating some interest in congress. So after we presented the Task Force Report to secretary Lyng, several of us testified before the senate and the house on the contents of this report and its recommendations, and we encouraged the congress to develop legislation to implement it. During this time Cooper Evans, a congressman from Iowa, retired, and was soon hired as the agriculture policy man on the White House staff. Some of us knew Cooper (he was a farmer from Iowa) and we asked him if he would be interested in working with us in the White House to get support for this idea. He convened at least 3 meetings in the old executive office building, where a small group of us (who shall go unnamed) talked with Cooper about potential obstacles. Some of the biggest obstacles were within the USDA because the Agricultural Research Service (ARS) wanted to take over the recommendations our Task Force had made and control it. Yet the Task Force had recommended creation of a separate entity, similar to the National Science Foundation, that would concentrate strictly on new industrial uses of farm crops and not traditional research. We were concerned that if ARS took it over, it would quickly be gobbled up and in 2-5 years would bear little resemblance to what we had intended. As a result, Bill Tallent (former head of the NRRC at Peoria, Illinois), Charlie Hess (of California, head of USDA Science and Education), and some of the others from USDA that we had grown to know and love over the years became, oddly enough, our biggest rivals. In short, we won, and got our ideas put in the 1990 Farm Bill [which was signed into law in Dec. 1990] as subtitle G in the research section."

The first goal of the New Uses Council was to set up an Alternative Agriculture Research and Commercialization (AARC) Center Board and make it a reality. The Council was

a voluntary group with no outside funding. The key early people in the New Uses Council included Dr. Paul O'Connell (of USDA), Dr. Shelby Thames (polymer scientist at Univ. of Southern Mississippi, Hattiesburg), Martin Andreas (ADM), Sam Brownback (Kansas Secretary of Agriculture), Alan Tracy (Wisconsin Secretary of Agriculture), Jack Firkins (A.E. Staley Mfg. Co.), and Jeff. By that time members of the Council had learned about the chemurgy movement and they were determined to move this idea forward on the public policy agenda. The Council's present agenda is to create a National Renewable Resource Energy Policy. Jeff testified recently before South Dakota Senator Dashchle's subcommittee of the U.S. Senate Agriculture Committee on the goals, activities, and effectiveness of the AARC Board.

The funds from subtitle G of the 1990 Farm Bill (\$10 million total, including \$4 million initially) were used to set up the AARC Board. This 9-member public board was appointed by the Secretary of Agriculture. This board worked closely with the board of the New Uses Council. Edward Madigan of Illinois was now secretary of agriculture (he served Feb. 1991–Feb. 1993), and he appointed the first board of 9 members. The New Uses Council was now in existence, working behind the scenes, putting all the pieces in place, getting the guidelines written once the law was passed, pushing USDA leaders to move in the right direction, etc.

The primary goal of the AARC Center is to commercialize new products from existing or new crops. They have presented much new technology, such as biomass conversion to make ethanol. They have approved 25 projects with funding of about \$6 million. They require a match in the form of money and services from the proposer of each project. And there is a payback provision—which the New Farm and Forests Task Force recommended. The Task Force recommended initially that a \$1,000 million trust fund be set up for use in this process, and that it be funded by \$200 million a year for 5 years from the sale of CCC commodities, which is an off-budget process, so it would be very painless. This Task Force recommendation was, unfortunately, never implemented. As one of dozens of examples of the payback from AARC funding, one project has developed an environmentally friendly product that replaces methanol with ethanol in windshield wiper solvent. Many large retail chains have agreed to sell the product. If it is successful, the federal government will be getting royalties back for the money they loaned us to commercialize the new product.

“In the New Uses Movement, the real power in terms of setting policy lies with the New Uses Council—which (like its predecessor the Farm Chemurgic Council) is a non-governmental organization. This policy is intended to influence the direction of government programs. The Council does not lobby, but its members have many high-level connections which they use to make things happen. The Council is a membership organization. Jeff is its chair and

Mark Dungan is its executive director [he was president and CEO by 1994]; he was one of the original 9 AARC board members. and Jeff was involved in hiring him for the New Uses Council. AARC is a public body whose members are appointed by the secretary of agriculture, with terms that rotate.

“In 1934, when the secretary of agriculture tried to mandate the use of ethanol mixed in with American gasoline, the American Petroleum Institute reared up and defeated the measure—leading to the current programs of set-aside, in which taxpayers pay farmers not to grow crops that are in surplus. The Corn Growers Association still fights them every day over the issue of ethanol. But now we're about to beat them.”

Concerning legislation that created funding for new uses that began to appear in about 1987, it was probably connected with the Office of Critical Materials (OCM), which was authorized in the 1985 Farm Bill. OCM was headed by Dr. Paul O'Connell, who is now the chief staff man for the AARC Board and was also a member of the New Farm and Forests Task Force. Paul is also the father of the LISA (Low Input Sustainable Agriculture) programs, which came under USDA's CSRS (Cooperative State Research Service). As part of CSRS Paul wrote the legislation, set it up, and administered it. At the time he was on Orville Bentley's staff as a special assistant to Bentley when he was Assistant Secretary for Science and Education of USDA. There is now growing interest in LISA among the USDA leadership. “Paul is someone you really need to talk with about LISA and the New Uses Movement.” OCM was part of the CSRS program; it was a special agency designed to find critical materials coming from agriculture in which we were not self-sufficient. One critical material was guayule, a shrub which was grown in dry areas in America during World War II to replace natural imported rubber from *Hevea* trees. The air force is now making tires from guayule—the viable seed of which would have been lost but for the OCM. Also in about 1987 Harkin had a bill in on some biotech research money for Ames, Iowa. Continued. Address: Chairman, New Uses Council, c/o National Corn Growers Assoc., 1000 Executive Parkway #105, St. Louis, Missouri 63141. Phone: 314-275-9915.

1481. Johnson, Lawrence. 1993. The origins and development of the New Uses Movement. Part II (Interview). *SoyaScan Notes*. Aug. 25. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Question: Why did the New Uses Movement start now, as a sort of reincarnation of the chemurgic movement, which had been dormant since the 1960s? During the 1940s, stable supplies of inexpensive petroleum began to displace agricultural commodities that were being used to make industrial product. Moreover the products derived from petroleum usually performed better than their agricultural

counterparts. In the 1950s there were huge farm surpluses and interest in chemurgy revived. In the 1960s we believed there was a protein crisis and a food crisis worldwide. We moved from a “surplus mentality” to a “shortage mentality” and we created new foods outlets for farm crops, as in Food for Peace programs overseas. In 1971 one bushel of corn sold for about the same price as a barrel of oil. But after the first OPEC oil embargo in 1973, 14 bushels of corn sold for about the same price as one barrel. Now about 8-10 bushels of corn equal 1 barrel of oil. We have leveled off at a ten-fold change. This opens up many new opportunities for industrial uses of farm crops—but the petroleum industry is fighting this trend every inch of the way. When 15 bushels of corn are worth the price of 1 barrel of oil, the scales will tilt strongly in favor of farm crops over petroleum. In addition, we understand and know how to manipulate the chemical constituents of plant materials far better than we did in the 1930s and 1940s. Also through biotechnology, we can now redesign any crop as we like to get the performance we want. Finally the Green/Environmental Movement believes (right or wrong) that products derived from plants are biodegradable and less harmful to the environment. One example of a sad experience in this area was ADM’s attempt to produce biodegradable plastics by incorporating corn starch. They got hurt so badly and got so much bad publicity by a misunderstanding of what they had done (environmental groups said the products wouldn’t biodegrade), that now they “won’t touch the product with a 10-foot pole.” It biodegrades, but very, very slowly. Address: Director, Center for Crops Utilization Research, Iowa State Univ., Dairy Industry Building, Ames, IA 50011. Phone: 515-294-4365.

1482. Messina, Mark. ed. 1993. First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease (Leaflet). Libertytown, Maryland. 4 panels each side. Each panel: 22 x 9 cm.

• **Summary:** This symposium, scheduled to be held on 20-23 Feb. 1994 in Mesa, Arizona, is being organized by Mark Messina, PhD, and sponsored by the United Soybean Board as well as soybean growers from Nebraska and Indiana. Each session contains a number of speakers and, in some cases, a panel discussion. Agenda: I. Soyfoods and heart disease: Opening remarks and overview. 1. Overview of soybean processing and products. Moderator—Rasik Daftara, Archer Daniels Midland Co. 2. Soy intake and cholesterol reduction. Moderator—John Erdman, Univ. of Illinois. 3. Soy and cholesterol reduction: Hypothesized mechanisms. Moderator—Doyle Waggle, Protein Technologies International. 4. Soy and heart disease prevention: Potential mechanisms unrelated to cholesterol reduction. Moderator—Penny Kris-Etherton, Pennsylvania State Univ. 5. Potential public health impact of soy protein. Moderator—Lynn Scott, Methodist Hospital, Baylor College of Medicine [Texas].

II. Soyfoods and Cancer. 6. Overview of diet and

cancer. Moderator—John Potter, Univ. of Minnesota. 7. Soy intake and cancer risk: Animal and epidemiologic studies. Moderator—Daniel W. Nixon, American Cancer Society. 8. Non-isoflavone soybean anticarcinogens. Moderator—Bernard Szuhaj, Central Soya Co. 9. Soybean isoflavones and cancer risk. Moderator—Kenneth Setchell, Children’s Hospital and Medical Center. 10. Anticancer effects of genistein. Moderator—Stephen Barnes, Univ. of Alabama.

The registration fees are: Regular: \$195.00. Student \$75.00.

Note: This in the earliest document seen (March 2019) with the word “soy” in the title referring to the general concept of soy; previously “soy” had referred to soy sauce. Address: Soyfoods & Chronic Disease Symposium, P.O. Box 178, Libertytown, Maryland 21762-0178.

1483. Bjornson, Sheri. 1993. Tempting tofu and tempeh: Health benefits, versatility help popularize soyfoods. *Daily Ledger-Post Dispatch (Antioch, California)*. Sept. 21. p. 21-22.

• **Summary:** Ron and Nancy Hoskins of Oakley, California, are vegetarians and they teach vegetarian cooking classes. One is titled “Introduction to tofu and tempeh,” and another is “Introduction to TVP and gluten.” Ron learned about soyfoods when he lived at The Farm in Summertown, Tennessee. Contains recipes for: Greek salad with tofu. Tofu-dill dip. Hawaiian tempeh kabobs with pineapple and peppers. A color photo shows Ron and Nancy at a table with tofu and some books from The Farm’s Book Publishing Co.

1484. ADM Protein Specialties Div. 1993. Harvest Burgers. As good for your customers as they are for your sales (Ad). *Health Foods Business*. Sept. p. 37.

• **Summary:** “Cholesterol free. Low in fat. Versatile—can be fried or microwaved. High in protein... For a closer look at Harvest Burgers, stop by booth 1154 at ExpoEast in Baltimore, September 10-12.” Address: Box 1470, Decatur, Illinois 62525.

1485. Archer Daniels Midland Co. 1993. Annual report. P.O. Box 1470, Decatur, IL 62525. 42 p. Sept.

• **Summary:** Net sales and other operating income for 1993 (year ended June 30) were \$9,811 million, up 6.2% from 1992. Net earnings for 1993 were \$567.5 million, up 12.7% from 1992. Shareholders’ equity (net worth) is \$4,883 million, up 8.7% from 1992. Net earnings per common share: \$1.66, up 12.9% from 1992. Number of shareholders: 33,654.

New ADM products from soybeans include Soy Milk (dry mix) and Harvest Burgers (also named Veggie Burgers). Opposite a full-page color photo of soy milk being poured from a pitcher into a glass, we read: “A new line of soy-based milk products was introduced that are nutritionally equivalent to milk but less expensive to produce, allowing

countries to expand their supply of needed protein at minimal cost.

“The all-vegetable protein food, Harvest Burger, is being actively marketed in the U.S. where 12% of the stores frozen food sections stock the product.

“Haldane Food Group continues to develop as the leading U.K. supplier to the health food industry. From a well-established domestic base and with an ever increasing product range the Group’s commercial thrust is extending to Continental Europe. Of the many new products introduced during the year ‘Vegemince’ commands attention as a direct TVP/wheat gluten non-meat alternative to ground beef. The prototype plant is fully committed to production and line extension is in progress.

“‘Vegeburger’ continues as a market leader with other burger products being added to the range. The realized growth and market potential for convenience foods has brought about the relocation of Snackmasters Limited to a new factory at Sibley adjacent to the Haldane site. The automated production line is currently at 60 % capacity and the introduction of new products should fill the plant within twelve months.

“Genice Limited continues to pioneer the growth of non-dairy soya based ice cream and yogurts with an increasing market share in Continental Europe... Soya milk sales remain stable and we hope to excite the market by introducing a bottled soya milk that will complement the existing Tetra pack products.”

“Currently operating at 80% capacity, ADM can produce 350,000,000 Harvest Burgers a year. ADM introduced the product in 1989, and soon will be selling as many burgers as some fast food chains” (p. 19). Address: Decatur, Illinois.

1486. August, Amanda. 1993. Soya far, soya good. *Vegetarian Living*. Sept. p. 37-38.

• **Summary:** “For many vegetarians the decision to drop dairy products from their diet is a natural progression—whether it be for ethical or health reasons... The dairy cow has been described as the most hard-worked of all farm animals. Normally, she would only produce 5 to 7 litres of milk a day for her calf but intensive farming means that the quantity can now be anything from 25 to 40 litres. To keep the milk flowing, the cow is subjected to yearly pregnancies, each lasting 9 months. After giving birth she will be milked for 10 months, but in the third month she will be put in calf [inseminated] again. So for 6 to 7 months of each year the cow is milked whilst pregnant.

“Calves are taken away from their mothers after 2 to 3 days, causing much distress to both mother and baby. Some calves are kept for dairy herd replacement (25%), some are exported to Continental veal crates, and the rest are fattened up to produce beef. Although cows have a lifespan of around 20 years, most are worn out after only 5 years. At this stage they are killed for meat.”

“Soya milk is a wonderful alternative to cow’s milk... Many brands are fortified with calcium (some containing more than dairy milk) and the vitamins B-12 and D... Soya milk doesn’t taste like dairy milk. If trying it for the first time it’s worth knowing that its an acquired taste. You may find it to be quite floury, with a strange after-taste and a strong aroma. But there are many who swear by it and whose altered palates find dairy milk cloying, fatty and oversweet.

“The first soya milk came onto the market in 1965, prior to which there had been no alternative to cow’s milk. It was launched by one of today’s leading producers, Plamil. Other companies began to follow suit in the 1970s.

“The market is still growing. In 1991 soya milk manufacturers produced 10.5 million litres and it’s estimated that by the year 2000 Britain will be consuming over 20 million litres per year. Supermarkets even have their own brands now. The Soya Milk Information Bureau’s 1991 annual poll found that 39% of respondents were buying more soya milk than in 1990.”

Color photos (p. 38) show 3 brands (Granose liter plastic bottles, Plamil 500 ml can, Provamel aseptic cartons), each with the words “Soya Milk” appearing as the product name on the front panel. The following brands are now available: Sainsbury, Safeway, Tesco, Waitrose, Co-op, Granovita, Granose, Sunrise, Plamil, Holland and Barrett, Uniso, and Provamel [made by Alpro in Belgium]. Address: England.

1487. Neal, Mollie. 1993. Reaping the rewards of skillful marketing—While helping humanity. *Direct Marketing*. Sept. p. 23-26.

• **Summary:** The long subtitle reads: “Archer Daniels Midland Co. has developed a product it believes can cure the world’s hunger problem. At the same time, the business has found a novel approach to marketing the product here in the United States directly to consumers.”

“(The following article was compiled from front video interviews conducted by Direct Marketing magazine’s Chairman of the Board, Henry ‘Pete’ Hoke, with Dwayne Andreas, chairman and CEO of Archer Daniels Midland and also Phil Jones of Jones + Thomas.)

“When you’re in business and you see the world headed for disaster and you understand how to correct it, it makes you uneasy if you don’t do something about it—if you’re going to have a sense of achievement.

“These words of wisdom come from Dwayne Andreas, a man who grew up in a Mennonite farming household in Lisbon, Iowa, in a home with no indoor plumbing, and has spent the last 20+ years as chief executive of Archer Daniels Midland Company (ADM), a major processor, transporter and marketer of agricultural products—a great achievement unto itself.

“The successful 74-year-old Andreas is not ready to relinquish his work: he continues to be a visionary and remains expeditious at the ADM headquarters in Decatur,

Illinois.

“Andreas’ ADM is the country’s largest processor of agricultural commodities and is respected around the world. He often holds court with the likes of former U.S. presidents Nixon, Reagan and Bush and former House Speaker Tip O’Neill. He also has strong ties with Gorbachev, Mulroney, Pope John Paul II and Mother Teresa. Five of nine postwar presidents, beginning with Harry Truman, have turned to Andreas for help on international trade issues.”

“But the company’s soy-based products are the ones that are quietly having the greatest affect on the world.

“Andreas’ soy product caught the eye of Mother Teresa; Andreas’ daughter has worked with the world leader for a number of years. After learning that Andreas was working in a lab on the product, she approached him and said, ‘The single biggest problem I have in feeding people around the world is milk and meat,’ because of the lack of refrigeration. ‘God is asking you to develop that product so I can use it in my feeding projects around the world,’ she told Andreas. Andreas instructed his crew in England to perfect the soy product, which, when mixed with water, left to rise and then cooked tastes similar to any meat product sold on the shelves. but at a much lower cost than similar edibles. Andreas is now selling the meatlike product to Russia, Italy, Finland, Hungary and many other countries.

“In Kiev, where meat and milk shortages are also one of the biggest problems. officials ordered \$100 million worth of the product in the belief that it would eliminate the need for 13 million cows.

“You can feed 20 times as many people off of an acre of land by raising soy alone, than growing soy and feeding it to an animal and then eating that animal. This means it has an enormous economic impact in a world where in the next century there’ll be 30 percent less acreage and 300 percent more people... You can see why we believe this is the most important food development of this century.”

“ADM began working with Jones + Thomas, an advertising and PR agency in Decatur. Jones + Thomas’ fulfillment center was charged with sending samples of ADM products across the world, per the request of ADM salespeople, according to Phil Jones, who runs both his agency and the fulfillment operation of Harvest Direct. For example, a baker in Denmark may have requested two pounds of soy isolate to sample in his or her test kitchen.

“During the past few years ADM began receiving consumer inquiries about the Harvest Burger® brand even though the company had not advertised the product, which has 75 percent less fat, 40 percent fewer calories and less than 30 percent of the cholesterol found in a typical hamburger. Consumers were tracking down ADM after reading bits of information about the soy-based product in trade journals, health food publications, newspapers and the like. In turn, ADM asked Jones + Thomas to be their retail outlet, a nice fit for Harvest Direct with a toll-free line, says

Jones.

“Next, Jones + Thomas designed a catalog featuring the Harvest Burger® product and began using it as a fulfillment device.

“TV ads were launched for Harvest Burgers® during David Brinkley’s ‘This Week’ program on Sunday mornings along with ADM’s other spots for its various causes (ethanol, no-till farming, environmentalism and others). The corporate tagline is becoming identifiable on TV these days: ‘ADM-Supermarket to the World.’

“Originally the purpose of the ads was twofold: To identify the product. since Harvest Burger® was ADM’s first consumer product and bound to be an enormous selling product, says Andreas. Secondly, the ads were designed to help ADM in its search for a packaged goods manufacturer to partner with—an interesting use of direct response advertising.

“Harvesting The Rewards: Each of these goals have been reached. Anywhere from 400 to 600 people call 800/8-FLAVOR each time the ads run, with more than 15,000 calls ringing Harvest Direct each month. Many people are requesting the catalog: others are purchasing the product.

“During the first year business increased 250 percent, and this year sales are expected to double since some complimentary, companion products have been added to the catalog to fit the health-oriented, vegetarian niche, according to Jones.

“The 10½ by 6-inch, four-color catalog features Harvest Burgers®; textured vegetable protein (TVP), a food product made from soybeans;...”

“While ADM had tried to get the national food companies interested, many did not want to come out with a ‘healthy,’ low-fat product, which would make their products look inferior, says Andreas. The supermarkets didn’t want it, since they already have hamburger, which is a commodity, taking up their shelf-space.

“Now, Pillsbury is taking over the supermarket retailing of Harvest Burger®. With Pillsbury’s supermarket muscle. Andreas expects the product to be in 150,000 grocery stores within the next six months. This is the first real merchandising breakthrough, boasts Andreas.”

“More than 4,000 Harvest Burgers® are gobbled up in a Moscow cafe each day and they are now available to American consumers via mail order and shortly, retail.

Photos show: (1) Mother Teresa; (2) The cover of a Harvest Direct catalog titled “Vegetarian Lifestyle.”

1488. Lowe, Frederick H. 1993. Business can breathe easier. *Sun-Times (Chicago, Illinois)*. Oct. 6.

• **Summary:** Boris Yeltsin’s defeat of Russian hard-line opponents will help Midwest companies doing business in Russia. Decatur-based Archer Daniels Midland Co. sells soybean-based food products to Russia and Ukraine. These

include vegetarian burgers and soy-based milk products, according to company executive Howard Buffett, assistant to ADM Chairman and CEO Dwayne O. Andreas. "We sell 5,000 vegetarian patties a day to a restaurant we jointly operate in Moscow. The burgers are also sold throughout Moscow at Kiosks."

1489. Poninski, Piotr. 1993. Re: Tofu in Poland. Letter to William Shurtleff at Soyfoods Center, Oct. 10. 2 p. Typed, with signature on letterhead.

• **Summary:** After giving details about the tofu made by his company, Piotr notes: "We think that second generation products are absolutely the best way to popularize this kind of new food. We will soon be working on tofu with various spices and other additions such as vegetables, grains, nuts etc. as well as on dressings and spreads."

"As far as other soyfoods are concerned, both soymilk and TVP are available on the Polish market but in a rather modest way. If you want to find them you can, but since they are all imported from Western Europe, or from Hungary (TVP) and not generally known, they are not widely available. Our plan is to import and popularize TVP. You can also get some retail packaged soybeans and soy meal."

"I think we are the first company to make and sell tofu in the Warsaw area, but I know a little about other companies which make or are planning to make tofu in Poland: (1) Vietnamese immigrants make firm tofu (*Dau Phu*), probably coagulated with vinegar, and sell it only to other Vietnamese people. Their general opinion is that Poles will not eat it and it is not worthwhile to try to popularize it; (2) A 'district dairy cooperative' in Szczytno (Northeastern Poland) makes tofu and tries to sell it somewhere in Warsaw. A professor from the department of food technology at the Main School of Agriculture in Warsaw is involved in this project and probably has set up the whole technical process. We contacted with him but he refused to cooperate with us. I have not had a chance to eat their tofu but one of our customers who tried it says it has a taste inferior to ours; (3) A Polish-Chinese enterprise which presently sells soybean sprouts is planning to manufacture and sell tofu in the Warsaw area." Address: Founder and owner, Polsoja, ul. Hetmanska 61, 05-120 Legionowo (near Warsaw), Poland. Phone: (48 22) 18 21 11.

1490. Pendleton, Nicki. 1993. The cook, her book, and textured vegetable protein. *Banner (Nashville, Tennessee)*. Oct. 13. [1 ref]

• **Summary:** Dorothy Bates of Summertown, Tennessee, believes so firmly in fat-free TVP that she wrote a cookbook about it, *The TVP Cookbook*. After retiring from her career as a real estate broker, Ms. Bates moved to Summertown to be near her children and grandchildren at The Farm. They were vegetarians, so Ms. Bates set about learning to cook meatless meals. She overhauled many of her old favorite recipes,

using TVP instead of meat. A photo shows Ms. Bates at the stove.

1491. **Product Name:** Green Giant Harvest Burger (Meatless Burger based on Textured Soy Protein Concentrates) [Original, Southwestern style, Italian style].

**Manufacturer's Name:** Green Giant Div., The Pillsbury Company (Marketer-Distributor). Made in Decatur, Illinois, by ADM.

**Manufacturer's Address:** Pillsbury: 2866 Pillsbury Center, Minneapolis, MN 55402-1464. Phone: 1-800-998-9996.

**Date of Introduction:** 1993 October.

**Ingredients:** Original flavor: Water, soy protein concentrate, hydrogenated vegetable oil (corn, soybean, cottonseed), isolated soy protein, methylcellulose, natural flavor, salt, hydrolyzed wheat protein, malt extract, dried onion, dried garlic, spice, beet powder, autolyzed yeast, zinc oxide, niacinamide, ferrous sulfate, copper gluconate, vitamin A palmitate, calcium pantothenate, thiamine mononitrate, vitamin B-6, hydrochloride, riboflavin, vitamin B-12.

**Wt/Vol., Packaging, Price:** 12.8 oz. 4 burgers in a paperboard box. Retail for \$2.99 (5/94, California).

**How Stored:** Frozen.

**Nutrition:** Per 3.2 oz burger: Calories 140, protein 16 gm, carbohydrate 7 gm, fat 5 gm (polyunsaturated less than 1 gm, saturated 2 gm), cholesterol 0 mg, sodium 380 mg, potassium 450 mg.

**New Product-Documentation:** Spot in Health Foods Business. 1993. Oct. p. 17. "Green Giant Unveils its own Veggie Burger."

*Soybean Digest*. 1993. Dec. p. 53. "Green Giant adds soybean burgers."

Talk with product manager at ADM. 1994. Feb. 18. The product was launched under the Green Giant label on 1 Feb. 1994. Shipments have been made to the San Francisco Bay area and the product should be sold at Safeway or Lucky chains now or in the near future. It may go into a supermarket either via the frozen foods section or the meat department (look in the frozen meat case, which also contains frozen fish, frozen hamburger patties, frozen entrees, etc.).

Product (3 flavors of burgers) with Label purchased at Safeway supermarket in Lafayette, California. 1994. May 18. Price: \$2.99. Frozen. Label. 8.5 by 4.25 by 1.12 inches thick. Dark green, light green, white, and yellow. A color photo shows a patty on a bun, topped with lettuce, a slice of tomato, and two onion rings, with a second bun behind them. "Healthier Eating Made Easy. 79% less fat than ground beef. All vegetable. Zero cholesterol." On back panel: "Quit beefing! Enjoy Green Giant Harvest Burgers. Finally a burger that's good for you!"

Talk with Green Giant consumer information person. 1995. July 31. Green Giant Harvest Burgers were launched in a ten-city test market on 4 Oct. 1993. This was expanded

to about 20 cities on 15 Feb. 1994. Then they went to full national distribution in the fall of 1994.

**1492. Product Name:** Realeat VegeMince (Meatless Minced Beef).

**Manufacturer's Name:** Haldane Foods Group.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 908 211311.

**Date of Introduction:** 1993 October.

**Ingredients:** Incl. wheat gluten, soy protein.

**Wt/Vol., Packaging, Price:** 1 lb bag. Retail for £1.99 (10/93, England). Also in 3 lb catering bags.

**How Stored:** Frozen.

**New Product–Documentation:** Ad (full-page, color) in BBC Vegetarian. 1993. Oct. p. 3. "Realeat VegeMince. Make a meal of it! New" A photo on the top half of the page shows a plate of spaghetti topped with a minced meat sauce. The text reads: "How would you like to enjoy your favorite dishes, but without meat? Well now you can. Simply use new Realeat VegeMince straight from the freezer instead of beef mince to create a wide variety of dishes with a really authentic taste and texture." The product has the Vegetarian Society seal of approval.

Spot in SoyaFoods. 1993. Autumn. p. 5. "Haldane launches Vegemince." This meatless blend of vegetable proteins is based mainly on wheat protein (gluten) plus some soy protein. It has been created from a new process developed by Haldane (patent pending) to give the taste and texture of minced beef. It comes pre-cooked and frozen in a 1 lb pack and provides 32 gm of protein per 100 gm.

1493. *Health Foods Business*. 1993. Green Giant unveils its own veggie burger. Oct. p. 17.

• **Summary:** "Pillsbury and Archer Daniels Midland (ADM) announced jointly that Green Giant, a Pillsbury Division, will become the exclusive marketer of a low-fat, no-cholesterol, all-vegetable patty that has been developed by ADM. The alliance stems from what both companies perceive as a growing demand from consumers for healthful foods that provide taste and convenience.

"As part of the agreement between ADM and Pillsbury, Green Giant Harvest Burgers, an alternative to meat-based burgers, will undergo significantly expanded distribution—from 9 cities presently to over 50 percent of the United States by the end of September 1994. ADM has marketed the product selectively since its introduction in 1991, and the company approached Pillsbury to create greater grocery store distribution and higher consumer awareness.

"Green Giant Harvest Burgers will be sold in frozen form in grocery stores. The line will include four varieties—original, Southwest style, Italian style, and breakfast patties."

1494. Wasserman, Debra. 1993. What's happening on The

Farm? A vegetarian community in rural southern Tennessee. *Vegetarian Journal* (Baltimore, Maryland). Sept/Oct. p. 28-31.

• **Summary:** "I finally had an opportunity to visit The Farm, a vegetarian community in rural Southern Tennessee. Some of you may be familiar with *The Farm Vegetarian Cookbook* or *Tofu Cookery*, two of the many vegetarian books published by The Book Publishing Company located on The Farm. Others may have eaten Ice Bean, one of the first soy ice creams to appear in health food stores. Ice Bean was first produced on The Farm in its Soy Dairy and later bought out by a larger company. And some readers may know that The Farm is in the forefront of advocating home births and the use of midwives, promoting Native American rights, developing solar energy technology, and even encouraging poor farmers to grow Shitake mushrooms. These activities and many more are occurring on The Farm today.

"Situated on over 1,700 acres in Summertown, Tennessee, The Farm is home to many vegetarian families. The community first formed in 1971 as a commune. Several hundred 'hippies' boarded old school buses in California and made the trek to rural Tennessee. Originally their plan was to live off the land; however, few of them had any real farming experience (many had grown up in cities) and they soon realized that they did not know how to survive off the land. In fact, today there are a small orchard and vineyard and many large organic gardens maintained by families, but there is no large-scale organic farming.

"By the mid-1980's The Farm community members decided that it was in their best interest financially to mandate that each family be responsible for its own income. (The land on which The Farm is situated still is communally owned.) When this change was initiated many people living on The Farm decided to leave, since they were unable to figure out how to earn a living in rural Southern Tennessee.

"The families that remained have had to be quite creative. Remember, this is a very poor area in the United States. Other than a nearby Saturn Car Company plant and some fast food restaurants, there is really not much employment opportunity in this area. Indeed, the most pressing issue on The Farm today is how to create more job opportunities for the children and anyone else wanting to live on The Farm. The nearest city is Nashville, about an hour and a half drive each way.

"For a while many individuals on The Farm began doing construction work in nearby towns. Some still do this type of work. Others started small businesses on The Farm, including a tie-dye clothing operation, a grocery store that offers many vegetarian items, a private school that has won many awards from the state of Tennessee for outstanding performance by its students, a vegetarian deli offering items such as soysage, plus many other enterprises, some of which I will now describe in detail.

"The Book Publishing Company: Cynthia and Robert

Holzappel are key players in the operation of The Book Publishing Company (a Farm community-owned business) and co-owners of the Mail Order Catalog, which offers books (many with a vegetarian theme) to the public. The Book Publishing Company predates The Farm in that it first started in San Francisco, California. Their first published book was *Monday Night Class*, which consisted of a compilation of Steven Gaskin's talks. Gaskin was then a professor at San Francisco State and later became the 'leader' of The Farm community when it began.

"I spoke at length with Cynthia Holzappel and she told me that they set up a press on The Farm so as to have the freedom to say what they wanted to say. Indeed, their second book called *Hey Beatnik*, published in 1974, was about the people living on The Farm. In 1975 The Book Publishing Company produced its first vegetarian cookbook called *The Farm Vegetarian Cookbook*. This book not only encouraged vegetarian eating, but also promoted a vegetarian lifestyle. And in 1976 they published *Spiritual Midwifery* which advocates home births and the use of midwives. Today The Book Publishing Company has several full-time and part-time employees. It certainly is one of the most successful businesses located on The Farm. Pictured below are two workers in the production area.

"Cynthia and Bob Holzappel took over management of The Book Publishing Company in 1985. With hard work and excellent co-workers, they have highly developed this business. Most of the books published today are written by authors who do not live on The Farm, but obviously share the community's values. Since this company is community-owned, there is an editorial board of directors which reviews manuscript offers. The company is primarily interested in two areas—one being lifestyle-oriented including vegetarianism, ecology, and alternative health, and the other being Native American-oriented, with books written by Native Americans so as to keep their culture alive and allow them to speak with their own voices.

"In 1993 The Book Publishing Company produced twelve books—reaching a goal they first set in 1985. By all means, this is a huge accomplishment for the company since only two years ago they were producing an average of four books per year, and not long before that they were publishing only one book per year. Today about 75% of their books fall under the vegetarian lifestyle category. (Some books are offered in *Vegetarian Journal's Catalog* on pages 33-34.)

"When I asked Cynthia if she noticed any new trends related to vegetarian book publishing she quickly said yes—the need for low-fat cookbooks. She hears from many 50- to 60-year-old-women whose husbands' doctors have told them to drastically change their diet and as a result they are looking for low-fat vegetarian recipes, especially ones using meat analogs or alternatives. Texturized Vegetable Protein (TVP), gluten, tofu, tempeh and other meat substitutes are right up their ally.

"Cynthia said that the market for vegetarian books is definitely growing despite the poor national economy. After all, she believes that nutritious and inexpensive food is recession-proof. Her motivation is not to change someone's beliefs, but rather to change their activity or actions, which in turn will lead to changed beliefs. She strongly believes in what Gandhi advocated—lead by example. In fact, Cynthia says she is for something, not against something, when she promotes vegetarianism. Cynthia personally became vegetarian because she felt that more people could be fed if we were all vegetarian. In her opinion the United States sets standards for other people around the world, eating habits included.

"According to Cynthia, protest is important to make change, but you must also be tolerant of people's differences. Individuals on The Farm come from a wide variety of backgrounds and have learned to tolerate one another's views. In fact, Cynthia says that, 'there are gray areas where we argue all the time—for example, should we allow fishing in our pond?' (Not everyone living on The Farm today is a strict vegetarian and they do not force their children to be vegetarian.)

"All the employees of The Book Publishing Company live on The Farm. No one has had formal training in publishing, and yet the company is certainly quite successful today. Readers who would like to receive a catalog from The Mail Order Catalog Company which distributes books published by The Book Publishing Company, as well as other publishers (including The Vegetarian Resource Group) can call (800) 695-2241 to request a catalog.

"Soy Dairy: Another small, but fascinating, business located on The Farm is the Soy Dairy. Here about 1500 pounds of tofu is produced in one day, some of which is distributed by the Kroger supermarkets in Nashville. No one else in the area manufactures tofu. The Soy Dairy also produces some soymilk and tempeh for members of The Farm community. I had the opportunity to try a delicious tofu spread that they produce when I purchased bagels at the Nashville Bagel Company in downtown Nashville.

"Thomas Elliot recently took over ownership of the Soy Dairy. He's lived on The Farm for twenty years and, believe it or not, grew up on a dairy farm as a child. He hopes to expand their business in the near future, since the demand for soy products continues to climb."

This article also discusses: (1) Mushroom People, a Farm business which encourages the production of shiitake mushrooms. They do not actually grow shiitake mushrooms, but rather produce a spawn medium needed to grow the mushrooms on cut logs." (2) The Farm Education Conference Center.

Photos show: (1) Most of the cover of the books *Tofu Cookery* and *The New Farm Vegetarian Cookbook*.

1495. *SoyaScan Notes*. 1993. Manufacture and sale of

soyfoods in Poland (Overview). Nov. 11. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** The following information about soyfoods companies in Poland was provided by the Polish consulate, the American Soybean Assoc., and a Westerner traveling in Europe:

Polsoja was started in early 1993 by Piotr Poninski and three partners. It is probably the first tofu shop in Warsaw, Poland, and the only tofu shop in Poland that makes and sells tofu on a regular basis. Five people work at the company. Address: ul. Hetmanska 61, 05-120 Legionowo (near Warsaw), Poland. Phone/fax: (48 22) 18 21 11

Solida Sp. z o. o. is a Chinese-owned company founded in 1992 by two Chinese partners: Mr. Lu Shihua (president) and Mr. Liu Zhonghua. The sales manager is Mr. Bugosiaw Zwadzki. They make and sell soy sprouts. They plan to sell tofu. Address: ul. Kmicica 1/212, 02-728 Warszawa (Warsaw), Poland. Phone/fax: (48 22) 47 23 09.

Okregowa Spoldzielnia Mleczarska is a dairy co-operative that supposedly makes or used to make tofu. They were taught how by Prof. Stanislaw Gwiazda. Polsoja has never seen or eaten their tofu. They probably started in 1992. Probably nobody speaks English there. Address: ul. Chopina 2, 12-100 Szczytno, Poland. Phone: (48 889 89) 22 11.

Prof. Stanislaw Gwiazda is said to have traveled in East Asia and claims to know tofu technology. He works in the faculty of food technology at the main School of Agriculture in Warsaw, where he specializes in proteins and fats. He helped the Szczytno start or try to start making tofu. Address: Szkola Glowna Gospodarstwa Wiejskiego, Katedra Produktow Biaikowych i Tuszczowych, ul. Grochowska 272, 03-849 Warszawa, Poland. Phone: (48-22) 10 18 42.

Polgrunt Sp z o. o. makes soy pâtés and soy flour. They also sell soybeans, TVP (imported from Serbia via Hungary), soy sauce, and maybe other soy products. They may start making tofu in the future. They probably started in 1991 or 1992. Address: ul. Pabianicka 17/19, 97-400 Beichatow, Poland. Phone: (48 841 83) 255 64.

There is also an unknown Vietnamese man who is making tofu for the Vietnamese community in Warsaw. He probably does everything in his kitchen for just a few people.

1496. Reis, Ademar. 1993. History of his work with soyfoods, seitan, and gluten (Interview). *SoyaScan Notes*. Nov. 29. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ademar, age 46, was born on 2 May 1947 in Santos, Sao Paulo, Brazil. In the early 1950s Brazil started growing more soybeans. His mother was a very well educated person and she liked to read; she also had many children and the family was rather poor, so they could not afford to buy meat, milk, or other animal products. Not far from their home was an agricultural department. His mother would send him there, and they would give him free

soybeans, which he and his mother would cook or use to make soymilk.

He entered law school in Brazil in the early 1970s, but upon graduation he became an actor and had a theater group. At the time, life in Brazil was very hard and repressive due to the military government. He went against the government and he had to flee the country in June 1973. Since he had several Brazilian friends living in Los Angeles, he went to live with them there. One day while shopping at Erewhon on Beverly Blvd. in Los Angeles he learned about the East West Center.

He moved into the East West Center, a macrobiotic commune on [7357] Franklin Ave. in Hollywood, California 90028. At that point his girlfriend, Iseti, joined him from Brazil; they were married in America in Oct. 1975. First he started working as Roy Steevensz' assistant making foods. Then in late 1973 or early 1974 he started a company named East West Cookery, where he made Soy Burgers, which he sold to many health food stores in and around Los Angeles, including the Erewhon retail store. To make the burgers he would soak whole soybeans, pressure cook them until soft, then cool and mash them for use as a binding agent. He would mix the mashed soybeans with cooked brown rice and fresh onions, parsley, and carrots. He would shape the mixture into patties, which he baked in an oven. He made the burgers in the kitchen of the big East West Center. In terms of logistics, he would wake up at 4:00 in the morning, cook the soybeans and let them cool. Later, after others had finished breakfast in the kitchen, he would shape and bake the burgers. He would put these between buns, with lettuce, tomatoes, etc. and distribute them to stores.

After several years he decided that he wanted to move to Boston to be close to Michio Kushi. He and his wife, Iseti, went to live at the Kushi macrobiotic study house in Newton, Massachusetts. In Newton he tried to support his wife (who was pregnant) and himself by doing some translation of articles from a Brazilian newspaper. After a few months, they realized they could not make a living doing translation, so Ademar decided to move to Somerville, re-activate East West Cookery, and start making Soya Burgers again—just about the same time his son was born (in October). After making the down payment on the apartment, they found themselves out of money. So they went to see Aveline Kushi (who he met when she lectured in California) at her home in Brookline. She gave him \$500 to get his business started and she put only one condition on the gift: “Don’t put too much garlic in the food.” He has kept in touch with her over the years.

The Seventh Inn made the bread for Ademar’s burgers’ buns. First he made the burgers out of his home in Somerville, Massachusetts, but he was caught by the Board of Health, so he had to move to a commercial kitchen.

One day a young man named David came from San Diego (where he had been a lifeguard), tasted Ademar’s

product, and ended up working with the company for a year. Tom was also an artist, and before he left, he drew a logo, wrote “Season’s Harvest” in it, and gave it to Ademar as a present. In 1977 decided to rename his company Season’s Harvest. Between the late 1970s and the early 1990s Ademar developed a line of about 20 different types of sandwiches (including Solar Burger sandwiches [with Wheatmeat made from Seitan], in 1976), many different burritos (including and a Tofu and Brown Rice Burrito, in about 1978), 20 different types of salads, and carrot juice. In about 1980 Season’s Harvest introduced Tuna Salad and Chicken Salad, each containing textured soy protein concentrate; these are the only two products in his line that are not vegetarian.

Until 1987 Season’s Harvest did its own distribution throughout the area (Massachusetts, Connecticut, New York, Philadelphia [Pennsylvania], etc.). Then from 1987 to 1990 the company turned over part of its distribution to a natural foods distributor named Country Barn. In 1990 Country Barn went out of business, with large unpaid debts to Season’s Harvest. Ademar picked up two distributors in New York: Craig Coester and Ed Wolf.

Looking for a bigger market, in the winter of 1991 Ademar contacted a little company in Massachusetts named Idyllwild Farms, which prepares food and puts food together for major airlines. He made a presentation but nothing developed. One day Continental Airlines contacted Idyllwild saying, “Look, we’re having a lot of requests for vegetarian meals, what can you come up with?” Idyllwild spent a great deal of time trying to find meals that were acceptable to Continental’s headquarters in Texas, but to no avail. As a last resort, in about December 1992, they went to Ademar. He set to work modifying the Dream Burger. It was an instant hit at Continental—so they asked for more vegetarian products and a dish with mushrooms and onions. Ademar designed the Vegetable Patty. Then they wanted something for breakfast, so he made the Veggie Breakfast Sausage. The first order from Idyllwild arrived in March 1993—the last arrived on 29 July 1993. Idyllwild declared bankruptcy, and Ademar lost \$12,000 that Idyllwild owed his company. It was a small disaster. Fortunately, Ademar was able (by great good fortune) to reestablish his contact with Continental and today they are still ordering from him. Idyllwild had hidden the names of its suppliers. Subsequent soy- or gluten-related products included: Dream Burger (1991, June, to be renamed Dreamburger in 1994), Vegetarian Meatball, and Vegetarian Bacon Bits (1992, Feb.), Seitan (1992, June), Cajun Burrito (1992, Nov.), Vegetable Patty (1993, March), and Veggie Breakfast Sausage (1993, March).

Ademar is now looking for a plant or company to make his Veggie Breakfast Sausage. He met Ernie Mucke, who is a fourth-generation sausage maker and who owns a traditional sausage company named Mucke’s. Ernie, who is in his late 30s, grew up working in the plant and knows every detail of the machinery. His 4-year-old son has many allergies so his

wife started cooking vegetarian meals, which Ernie likes, so now he is very open to vegetarianism. Ernie’s wife’s brother, who had spiritual powers and lived in Arizona, was Ernie’s spiritual guide. Just before he died, this spiritual guide told Ernie that someone would come into his (Ernie’s) life and his sausage plant would be transformed, and he would end up making vegetarian foods. Ademar and Ernie are now working out plans together.

In about mid-1992 Sysco, America’s largest food distributor, began to carry Ademar’s products; he is with their Hallsmith Sysco division. About 6 months ago he also got into J.P. Food Services (Monarch); Harvard University buys his products. The last few months, in working with Protein Technologies International, ADM, and Central Soya, Ademar has learned many new things about food technology and product formulation. So now he is reformulating many of his products. Currently his best-selling products are Bean & Cheese Burrito, Hoomus [Hummus], Tabouleh [Tabbouleh], and Dream Burger—in that order. He now owns the largest natural-food sandwich company in New England—followed by New World.

Ademar has kept good records of his years of pioneering work with natural foods; his files may be able to add more detail and accurate dates and names to this story. He still uses macrobiotic principles in formulating his recipes to balance yin and yang, but he is not as strict as he used to be; he now eats tomatoes and eggplants. Address: Founder and owner, Season’s Harvest, 52 Broadway, Somerville, Massachusetts 02145. Phone: 617-628-1182.

1497. Willemse, Jan; Eaton, Eleanor. 1993. *Cooking for Henry: The memories and recipes of Chef Jan Willemse, former pastry chef at Dearborn Inn and personal party chef for Henry Ford*. Virginia Beach, Virginia: The Donning Company / Publishers. 160 p. Illust. Recipe index. 26 cm. Autographed by Willemse and Eaton.

• **Summary:** Contents: Foreword. 1. I’m discovered by Edsel Ford: Bread, pastries. 1. Henry Ford introduces me to the soybean: Soybean recipes. 3. I help open the Clinton Inn Restaurant to the public: Soups, salads, finger food. How you can be as healthy as Mr. Ford: Entrees, sauces, vegetables.

Mr. Willemse selected and downscaled his recipes while Mrs. Eaton wrote the biographical text and selected the photos. The book was published just after Mr. Willemse’s 93rd birthday. A photo on the cover shows Fair Lane, the last and most famous home of Henry and Clara Ford, located on the banks of the Rouge River in Dearborn, Michigan. Completed in 1915, the mansion has 56 rooms and is situated on 1,346 acres. After Mr. Ford’s death, Fair Lane was given to the University of Michigan at Dearborn by the Ford Motor Co.

In the Preface, Jan’s three children write: “The qualities our father and we admired most in Henry Ford were his simple manner, his genuine interest in his employees and

their families, and his many kindnesses to them.”

Born in Holland, Jan’s training as a cook began at age 12 in his home town of Hilversum. He came to America in 1919 settling in Boston where he met and married his wife Annie. He first came in contact with the Ford family in 1931 when he was cooking at the Nautilus Hotel in Miami Beach, Florida. He took food to Edsel Ford and the crew of his yacht, which was moored at the marina. Edsel thought Jan was a good cook. Henry Ford had just opened the Dearborn Inn in Dearborn, Michigan, and Edsel thought Jan would be a good executive chef. Henry Ford wrote Jan asking if he’s come to Dearborn and take the job of head chef. After a while, Jan accepted. Mr. Ford didn’t want any alcohol served at the inn and he was very much against smoking. Jan soon met Edsel Ruddiman, Henry Ford’s chemist. Jan never cooked at Fair Lane, the Ford’s home and mansion, while the Fords lived there.

In 1934, at Mr. Ford’s request, Jan started experimenting with soybeans. Dr. Ruddiman had the miller send him samples of soybean flour. He started by making soft rolls, and then began experimenting with many different foods. Whatever Jan made had to be approved by Dr. Ruddiman before he could send it to the Ford family. However, it could be served at the Dearborn Inn without his approval. He made many recipes in the next 5 or 6 months, and as far as he knows no other soy recipes were around.

While Jan researched food recipes with soybeans, Dr. Ruddiman and chemist Bob Smith experimented with making a substitute for milk and ice cream from the beans (p. 47). The first products were served at the Dearborn Inn, but weren’t well liked. Several other soybean researchers Jan remembers were R.H. McCarroll and Harold Joyce.

Jan worked as pastry chef at the Dearborn Inn until 1932. Then he went into Dr. Ruddiman’s laboratory in Greenfield Village. “This soybean experiment was a sideline, you might say. It started small but grew to be very important to Mr. Ford. He wanted more and more food made with the soybean. Clara Ford was not as interested in the soybean as her husband, but she especially liked some soybean food such as cookies made with white chocolate chips, and soy bread. She wanted the bread sent to the mansion every day. A favorite of Mr. Ford’s was a soybean cracker that he named the Model T...” A recipe for “Model T. Crackers” is given.

The section titled “Soybean Recipes” (p. 51-72) contains 42 such recipes. The main soy ingredients used in these recipes are soybean flour (used in 18 recipes), soybean margarine (in 17 recipes), soybean milk (10), whole soybeans (cooked, 9), soybean oil (8), roasted soybeans [soy nuts] (5), soy sprouts (1), TVP (textured soy flour, 1), and canned green soybeans (1). There are also two recipes for making soybean milk (one from soybean flour and 1 from whole soybeans), and one recipe each for making roasted soybeans (salted and baked) and homemade soybean coffee.

A photo (p. 66, supplied by Willemse) shows the “Menu

of Dinner Served at Ford Exhibit, Century of Progress, August 17, 1934.” The names of 17 dishes, each containing soya, are listed. The text on the facing page states: “I planned this menu of all soybean food...” served at The Ford Exhibit in Chicago, Illinois.

When Henry Ford ceased to be active in the Ford Motor Co., Jan left the company and started a catering business on his own. The Clinton Inn (pictured) was the first building Henry Ford acquired for Greenfield Village in 1927. Jan helped to open it to the public. Of the various friends of Henry Ford that Jan met, the one who impressed him most was George Washington Carver. “Of all the people I met, the prince of them all was Henry Ford. He was a wonderful man. He was so interested in everything and everybody. He loved children. He helped them, and the poor too, whenever he could.” Jan also thought a lot of Dr. Ruddiman, who told him many times that “you are what you eat... Well, I’ve eaten soybean foods ever since I started experimenting with them.”

“It used to be everyone thought soybeans were just food for animals. Mr. Ford helped people realize that they are perfect food for human beings. He once said that, next to the Model T, he considered his soybean research to be his greatest work.”

This book contains many fine old photos including the following: The Carver Laboratory interior (p. 46; it was used for soybean research), The Carver Laboratory exterior in 1942 (p. 50). Henry Ford standing by George Washington Carver (p. 65). Austin W. Curtis Jr., Jan Willemse, and Bob Smith sampling soybean foods that Jan served at a soybean brunch at the Henry Ford Estate–Fair Lane in 1988 (p. 138). Two giant pressurized cans of Presto Whip which attracted the attention of passers-by on Telegraph Road, south of Michigan Ave. in Dearborn for many years. Stored inside the structures were soybean oil and sugar used to make the soy-based non-dairy whip topping developed by Robert Smith, food chemist, at the request of Henry Ford (p. 144). Photos on the last page, titled “About the Authors” (autobiographical) show both Willemse and Eaton. Jan still bakes soybean cookies (recipe p. 61). Address: Willsemse: 130 Nightingale, Dearborn, Michigan 48128. Phone: 313-561-4088.

1498. Cole, Sidney J. 1993. Changes at DE-VAU-GE (Interview). *SoyaScan Notes*. Dec. 6. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** DE-VAU-GE (DVG) has stopped making soymilk [actually they plan to stop in early 1994] and therefore also tofu. It was an economic decision. When the Adventist church sold Granose Foods in England, that cost DVG about 40-50% of their soymilk market. DVG still sells and distributes both soymilk and tofu under their GranoVita brand, but they buy the products from other manufacturers. The soymilk may be made by Alpro in Belgium. DVG still manufactures many other soyfoods, such as the soy protein

foods, the canned meatlike products, etc.

DVG is still a strong company that is growing rapidly and Michael Makowski is still the general manager. He calculated that he can do better financially by using his factory space to make Corn Flakes rather than soymilk. If DVG keeps up their current growth rate, they may soon pass Australia's Sanitarium Foods as the leading Seventh-day Adventist food company in terms of sales. The church has no plans to sell DVG, and in fact the church is looking to support its food industries quite strongly now.

The decision to sell Granose was made at the local division level, not at the General Conference level. Sidney personally would have preferred that the church not sell Granose, but at least they did sell it at the right time and to a good buyer—the Haldane Foods Group. The products, the company, and the philosophy are all in good hands.

Eric Fehlberg retired about 2 years ago as director of the Seventh-day Adventist International Health Food Assoc. Dr. Cole took his place, and he has also kept his job in Miami at the Inter-American Division. Address: Director, International Health Food Assoc., P.O. Box 140760, Miami, Florida 33114-0760. Phone: 305-443-7471.

1499. Makowski, Michael. 1993. Soymilk at DE-VAU-GE and in Europe (Interview). *SoyaScan Notes*. Dec. 8. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** DE-VAU-GE (DVG) has not yet stopped making soymilk; they had planned to stop during late 1993 and they hope to definitely stop during 1994. They stopped making tofu and Tofu Cream 2 months ago, but they continue to sell tofu; they now buy it from another company [Heuschen-Schrouff in the Netherlands]. DGV decided to stop soymilk production because of the large drop in demand after Granose was sold.

Their problem is to find a partner to produce soymilk for them. This other company must make a good quality product at a reasonable price, must have a large enough capacity to supply their needs (they plan to continue to sell the same soymilk products they are selling now), and must be willing to buy their used soymilk equipment at a reasonable price (this is the main sticking point).

There are not many large soymilk manufacturers in Europe. Alpro in Belgium makes and sells about 32 million liters/year in all the different sizes and flavors. Sojinal in France makes about 5½ million liters/year, and DE-VA-GE makes about 4 million liters/year. Other active soymilk manufacturers include Liquats Vegetal S.A. in Viladrau (near Girona), Spain (which started about 1 year ago and makes their soymilk from whole soybeans; they are a private company), several small manufacturers in England (but their quality is not acceptable), and Soyana in Switzerland. In Michael's opinion, the quality of the soymilk made by Alpro and DVG are more or less the same.

The British market for soymilk is by far the biggest in

Europe, comprising about 50-60% of the total European market. Belgium, France, and Germany come next and are all about the same size. Then come Italy and Spain.

In Europe, 80% of all soymilk is sold plain—unsweetened and unflavored; it contains only soybeans and water. Then there are the sweetened types, which are sweetened with sugar, honey, or grape juice. The main flavored types are chocolate, vanilla, or strawberry. Then there are three flavors of dessert puddings: Chocolate, vanilla, and strawberry. That's all. Address: General Manager, DE-VAU-GE Gesundkostwerk GmbH, Postfach 1660, Luener Rennbahn 18, D-2120 Lueneburg. Phone: (04131)-303-145.

1500. Ruggles, Kristi. 1993. Schools put veggie burger on their menu: ADM to supply three Decatur high schools. *Herald and Review (Decatur, Illinois)*. Dec. 8. p. 15.

• **Summary:** “Decatur—Students at Decatur's three public high schools will sink their teeth into a new sort of burger today; a vegetable burger.”

ADM's sales are picking up to The Pillsbury Co. and to Ukraine.

“The burger is being promoted as a healthy and tasty alternative to meat.”

The British eat 70 million veggie burgers a year.

1501. *Food Production / Management (Baltimore, Maryland)*. 1993. Pillsbury and ADM to market Giant Green frozen Harvest Burgers. Dec.

• **Summary:** ADM has marketed this product selectively since its introduction in 1991. Harvest Burgers are presently marketed in Minneapolis, Minnesota; Chicago, Illinois; Indianapolis, Indiana; St. Louis, Missouri; Milwaukee, Wisconsin; Houston, Dallas, and San Antonio, Texas; and Louisville, Kentucky.

Pillsbury is a subsidiary of the Food Sector of Grand Metropolitan PLC, one of the largest international companies in the United Kingdom and a world leader in drinks, retailing and food. GrandMet sales are in excess of \$14,000 million. Other U.S. subsidiaries include Burger King, Carillon Importers, GrandMet Foodservice Inc., Haagen-Dazs, Heublein, the Paddington Corporation, and Pearl Inc.

1502. *Soybean Digest*. 1993. Green Giant adds soybean burgers. Dec. p. 53.

• **Summary:** In October 1993, Green Giant, a division of Pillsbury, became the exclusive marketer of Harvest Burgers, developed by ADM in 1991. ADM has been producing the burgers in Decatur, Illinois, and marketing them in only 10 cities. Because ADM does not have the sales and distribution networks in place to handle a frozen product, the company teamed up with Pillsbury. Pillsbury plans to dramatically expand distribution to over 50% of the U.S. by the end of 1994. Annual sales are projected to reach \$40-60 million within 3 years. So packages of frozen soy burgers are now

adorned by the famous face of the Jolly Green Giant. Green Giant Harvest Burgers are sold in four varieties: Original, Southwestern Style, Italian, and breakfast. A package of four patties retails for about \$2.69. Pillsbury will target its product toward America's nearly 12 million vegetarians.

1503. Wittenburg, Bonnie. 1993. Archer Daniels Midland Company: NYSE-ADM. Minneapolis, Minnesota: Dain Bosworth. 36 p. 28 cm.

• **Summary:** Contents: Summary and recommendation: Valuation. Company profile. Operating review. Corn refining: High fructose corn syrup (HFCS), ethanol, bioproducts. Oilseed processing (soybeans, soy meal, soy oil): Edible soy proteins (soy protein concentrates, isolates, soy flour, and textured soy flour). Wheat milling. Other products and businesses. International trade: NAFTA and GATT. Financials. Recent results. Outlook and conclusion.

Index of exhibits. ADM sales by segment in 1988 and 1993 (p. 5; In 1993: Oilseed processing 50%, corn refining 28%, wheat milling 13%, other 9%). U.S. oilseed processing capacity (p. 20; ADM 28% of U.S. capacity, Cargill 25%, Bunge 16%, Ag Processors 14%, Central Soya 10%, Other 7%). World oilseed production by crop (p. 20; Soybeans account for 52% of the 227.3 million metric tons [tonnes] total). World soybean production by country (p. 20; Total 116.9 million tonnes, of which the U.S. produces 51%, Brazil 19%, Argentina 10%, China 9%, Other 11%). World vegetable oil consumption 1992 by crop (p. 21; Total 584. million tonnes, of which soybean is 30%, palm 21%, rapeseed 15%, sunseed [sunflowerseed] 14%, peanut 6%, cottonseed 6%, other 3%). Soybean meal use by livestock (p. 20; Poultry 51%, swine 27%, beef 8%, dairy cows 7%, other 7%). Largest exporters of soybean meal: 1990-1994 (tonnes in 1993/94 EC-12 8,830, Brazil 6,550, USA 4,944). Largest importers of soybean meal: 1990-1994 (tonnes in 1993/94 EC-12 13,630, Asia and Oceania 4,936, Middle East and North Africa 2,443).

This "Dain Bosworth Research Report" is "A fundamental appraisal of investment value." "ADM is so big and efficient, and its product lines are so diverse, that it can benefit from almost any positive trend impacting agriculture worldwide. ADM is believed to be the largest corn refiner, oilseed processor and flour miller in the United States... We recommend purchase of ADM shares based on our expectations of improved earnings momentum beginning in the fourth fiscal quarter of fiscal 1994."

Concerning edible soy proteins (p. 23-24): The entire U.S. meat substitute market is estimated at \$50-100 million annually today, and growing at 5-8% a year. The Green Giant Division of Pillsbury is marketing ADM's burgers under the name Green Giant Harvest Burger. Worthington Foods of Ohio is the leader in the meat substitute category. Their Morningstar Farms burgers are precooked whereas ADM's burgers require cooking. ADM sold 70 million veggie

burgers in fiscal 1993 and is now building capacity to triple production. A company named Aton, said to be one of the largest private enterprises in Ukraine, has an agreement with ADM whereby ADM will be shipping \$100 million of soy-based food ingredients to Ukraine by the summer of 1994.

Toepfer, which was started in Germany in 1919, handles approximately 9% of the total world grain trade and about 35% of the world trade in feedstuffs. ADM owns 50% of Toepfer; the other half is owned by 14 cooperatives from 7 countries including Gold Kist, Agway, Harvest States, AGP, etc. in the USA.

"We continue to believe that the long-term story for ADM is among the best of the companies we follow." "In our opinion, ADM is among the best positioned, best managed, and financially sound ag processing companies around" (p. 35). Address: 60 South Sixth St., Minneapolis, Minnesota 55402-4422. Phone: (612) 371-2728.

1504. Siriwardana, T.R.W. 1993. Country report 13-Sri Lanka. In: N. Chomchalow & P. Narong, eds. 1993. Soybean in Asia: Proceedings of the Planning Workshop for the Establishment of the Asian Component of a Global Network on Tropical and Subtropical Soybeans. Bangkok, Thailand: FAO Regional Office for Asia and the Pacific. viii + 218 p. See p. 119-127. RAPA Publication (FAO), No. 1993/6. [11 ref]

• **Summary:** Contents: (1) Introduction. (2) Production: Status, major growing seasons and cropping systems, constraints, resolving constraints. (3) Processing, utilization and marketing: status, supply and demand, constraints to processing, utilization, and marketing, resolving constraints. (4) Resources: Personnel, seeds. (5) On-going research projects. (6) Information required.

Tables: (1) Production of soy bean in Sri Lanka in the 1970's and 80's. (2) Average climatic data for the wet and dry seasons in soybean growing areas. (3) Imports of soybean meal to Sri Lanka. (4) Imports of Textured Vegetable Protein (TVP) into Sri Lanka.

Maha, the rainy season, is from Oct. to March. Yala, the dry season, is from April to Aug. and requires irrigation for soybeans.

Area planted to soybeans in Sri Lanka grew from 611 ha in 1974 to a peak of 12,244 ha in 1983, then decreased to 3,823 ha in 1989. Soybean production grew from 600 tonnes (metric tons) in 1974 to a peak of 9,100 tonnes in 1988, then decreased to 1,500 tons in 1989. Soybean yields grew from 980 kg/ha in 1974 to a peak of 1,490 kg/ha in 1987, then decreased to 0.38 kg/ha in 1989.

Imports of soybean meal into Sri Lanka grew from 3,113 tonnes in 1980 to 31,320 tonnes in 1990.

Imports of TVP into Sri Lanka grew from 206 tonnes in 1980 to 835 tonnes in 1990. Address: Head, Soybean Foods Research Centre, Dep. of Agriculture, Peradeniya, Sri Lanka.

1505. Howard, Robert B. 1994. Archer Daniels Midland Company. *Positive Patterns (Rogersville, Missouri)* No. 23. p. 1, 5-6. Jan. 29.

• **Summary:** This is an analysis of ADM stock and its potential based on earnings and charts. The author sees a very bright future for the company. He believes that “ADM will deliver superior returns to shareholders.” Mr. Andreas is a big-vision person who has a long range plan. Key products are lysine, tryptophan, and threonine for animal feeds, soy milk and Harvest Burgers (ADM Predicts these two products are likely to be the most important for ADM over the next 10 years), biological insecticides (ADM is the world’s largest producer), xanthan gums, and ethanol. ADM is an excellent cash generator. Every year they wisely acquire other companies, and they have an acquisition team that is second to none. They have made dozens of acquisitions during the past decade. Their balance sheet sparkles and is very straight forward and honest. ADM takes the long view. Address: Route 2, Box 248, Rogersville, Missouri 65742. Phone: 417-887-4486.

1506. Creager, Sue. 1994. New developments at Central Soya, Premiere Agri Technologies (Interview). *SoyaScan Notes*. Jan. 31. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Eridania/Beghin-Say is still Central Soya’s parent company. David Swanson resigned Central Soya (he was chairman, president, and CEO) last July to lead a group of investors to buy out Central Soya’s feed company. That fell through, so then he started working with ADM. Last Friday Central Soya sold its feed business (Master Mix feeds), including all its feed plants, to a subsidiary of ADM. David Swanson is now CEO of the new feed company, which is called Premiere Agri Technologists and is a wholly-owned subsidiary of ADM. They are still located in Ft. Wayne, Indiana (P.O. Box 2508, Zip 46801. Physical address: 8515 Bluffton Rd., Zip 46809. Phone: 219-479-5000).

Raul Gardini, who had already resigned from Ferruzzi, committed suicide on 23 July 1993, in Milan, using a pistol shot to the head, at age 60. The story was widely publicized, with good accounts in the Wall Street Journal, and the Financial Times. It was a result of the big, ongoing government investigation that is taking place in Italy. Ferruzzi is now trying to adjust its debt with banks. Gardini’s suicide had no effect on Central Soya or Eridania/Beghin-Say.

She knows nothing about Central Soya relocating near Salt Point, New York. Address: Public Relations, Central Soya Co., Indiana. Phone: 219-425-5591.

1507. Agriculture Canada, Oilseeds Division, International Markets Bureau, Markets and Industry Services Branch. 1994. Oilseed sector profile. Ottawa, Ontario, Canada. [iv] +

23 + 1 + 12 p. Jan. 28 cm. Spiral bound. [3 ref]

• **Summary:** Contents: Foreword. 1. Introduction. 2. The seed production subsector: Canola, soybeans, flaxseed, sunflower, mustard, safflower, composition.

3. The processing subsector: Background, crushing plants, industry statistics, methods of processing, oilseed crushings, vegetable oils, vegetable oilmeals, economic value of the industry. 4. The marketing subsector: Oilseeds marketing, hedging, processed oilseed products marketing.

5. Organizations: Canola, soybeans, flaxseed, crushers. 6. The environment: Domestic, international.

Appendix A: Role of the federal government in the Canadian oilseeds industry: Research, regulation, marketing. Appendix B. Oilseed industry directory: Industry association, oilseed processing companies, oilseed sector trading companies, research / education institutions, government, others.

Soybeans (p. 3): “Soybeans were introduced into Canada in 1893; however they did not become a commercial oilseed crop until the late 1920’s. In that year [sic, about March 1930], the first soybean crushing plant [Milton Oil Refineries, Ltd.] was built in Milton, Ontario. The introduction of modern crushing mills occurred in the late 1930s. Increased demand for vegetable oil and protein meal during the early 1940’s firmly established the crop and by 1950, soybeans had become a major cash crop in Ontario. Strong promotional efforts by the crushing industry assisted in continued expansion of the crop. During the 1980s, soybeans were introduced into Québec, the Maritimes and Manitoba as a source of livestock feed... In Québec, whole soybeans have become a viable alternative feed source. In other regions, whole soybeans are only a minor ingredient for livestock.”

The soybean growers, like their canola counterparts, have shown a high degree of cohesion and organizational ability. In 1949, the Ontario Soybean Growers’ Marketing Board was founded. The Board represents 25,000 producers and negotiates the pricing arrangements for Ontario soybeans. Its functions are discussed in more detail further in this report. The handling, crushing, and exporting of soybeans and soybean products is handled by private companies.

“Canadian soybean production has increased sharply from the late 1970’s when up to 60 percent of Canadian soybean requirements had to be imported. In 1987, domestic production reached a level capable of supplying most internal demands for crushing (Table 3). Although some soybeans are still being imported from the U.S., Canada exports a larger volume of high quality white hilum soybeans for food utilization in Asian and European markets.

Domestic crush of these larger crops has made Canada self-sufficient in soyoil production; however, soy meal is still in a deficit position. About 600,000 tonnes representing close to 50 percent of domestic soy meal utilization requirements

needs to be imported yearly.

“Up to 1991, the soybean crushing industry was operating below capacity.” In that year, Victory Soya Mills in Toronto was closed. “The result is that the crushing capacity now meets the production of soybeans for crushing. Therefore, without an increase in crushing capacity, Canada will remain a net importer of oilmeals. Nevertheless, increasing the crush is economically questionable until a viable market outlet is found to absorb the additional soyoil produced. The 1992 elimination of the U.S. crude soyoil tariff (18%) could ease the situation. The two companies crushing soybeans in Canada are corporately linked to large multinational corporations, with major U.S. operations. Therefore, without tariff, the unrestricted movement of soyoil between the two countries is a possibility.”

“Economic value of the industry (p. 12): The oilseed crushing industry makes a large and positive contribution to the Canadian economy. It is a processing industry and as such it provides enhanced strength to the economy through value-added contributions and the financial multiplier effect. In 1992 (table 16) the direct economic benefits were \$1,810 million, and the contribution to the Canadian balance of payments was \$599 million in total import replacement and \$322 million in export earnings for a total contribution of \$921 million.

Tables show: (3) Canadian supply and disposition of soybeans, soyoil and soymeal, 1988-1993. (5) Oilseed crushing facilities in Canada. Owners and their soybean crushing plants are: ADM Agri-Industries Ltd. (Windsor, Ontario): 1,250 tonnes capacity per 24 hours. CanAmara Foods (Hamilton, Ontario): 1270 tonnes capacity per 24 hours.

(7) Oilseed crushings in Canada: The soybean crush was #2 largest in Canada after canola and ahead of sunflower seed. The soybean crush was 908,200 tonnes in 1988, then 916,000 tonnes in 1989, then 1,083,500 tonnes in 1990, then 943,600 tonnes in 1991, and 995,200 tonnes in 1992.

(8) Vegetable oil production in Canada. Soybean oil is #2, far behind canola oil and far ahead of sunflower oil. During these 5 years, soybean oil production ranged from a low of 159,000 tonnes in 1988 to a high of 194,800 tonnes in 1990.

(9) Vegetable oil trade. During these 5 years, soybean oil imports to Canada were very small, ranging from a low of 4,000 tonnes in 1989 to a high of 16,000 tonnes in 1990. Soybean oil exports from Canada were even smaller, ranging from a low of 1,000 tonnes in 1989 to a high of 5,300 tonnes in 1991. Both soybean crushers also have their own soy oil refineries. The capacity of the ADM Agri-Industries Ltd. refinery (Windsor, Ontario) is 159,000 tonnes per year, whereas that of CanAmara Foods (Toronto) is 147,000 tonnes per year.

(13) Vegetable oilmeal production: Soybean meal is #2, behind canola meal but far ahead of sunflower meal. During

these 5 years, soybean meal production ranged from a low of 698,300 tonnes in 1988 to a high of 835,800 tonnes in 1990.

(14) Vegetable oilmeal trade. During these 5 years, soybean oil imports to Canada were large, and vastly larger than any other oilmeal, ranging from a low of 565,400 tonnes in 1990 to a high of 692,100 tonnes in 1988. Soybean meal exports from Canada were very small, ranging from a low of 200 tonnes in 1989 to a high of 33,100 tonnes in 1992. By contrast, large amounts of canola meal (about half of the total amount produced each year) were exported.

(18) Soymeal imports by province. The top 3 in 1988 were: Ontario 326,026 tonnes. Manitoba 169,687 tonnes.

(19) Soybean exports by major markets: The top 8 in 1992 were: USA 69,135 tonnes. Portugal 62,515 tonnes. Netherlands 27,349 tonnes. Former USSR 20,752 tonnes. Hong Kong 19,376 tonnes. Singapore 17,268 tonnes. Japan 11,306 tonnes. Malaysia 10,687 tonnes. Quebec 137,365 tonnes. Total 1992 245,668 tonnes.

(24) EC-12 production of major oilseeds, 1989-1993. In 1992-93 the leading oilseeds produced in the European Community were: Rapeseed 6,217,000 tonnes. Sunflowerseed 3,940,000 tonnes. Soybeans 1,294,000 tonnes. Cottonseed 606 tonnes. Linseed 316 tonnes. Address: 930 Carling Ave., Ottawa, ONT K1A 0C5, Canada. Phone: (613) 995-8324.

1508. Agriculture Canada, Oilseeds Division, International Markets Bureau, Markets and Industry Services Branch. 1994. Oilseed sector profile: Organizations (Document part). Ottawa, Ontario, Canada. [iv] + 23 + 1 + 12 p. See p. 18-19. Jan. [3 ref]

• **Summary:** “Soybeans: The producer marketing organization for soybeans is the Ontario Soybean Growers’ Marketing Board (OSGMB). Its objective is ‘to enhance the marketing of Ontario soybeans.’ The Board’s powers include licensing [soybean] producers, dealers and grain merchandisers and brokers; establishing license fees and negotiating with dealers and handlers charges for handling, cleaning and drying. The OSGMB has the power to purchase and sell soybeans but has not yet exercised this right. Minimum prices are not negotiable with buyers. Processors, crushers or brokers have agreed instead to pay to the producer the U.S. soybean price adjusting for quality, transport, handling, insurance and monetary exchange. The OSGMB negotiates the factors involved in these activities. All trading for the domestic, export and seed markets is done via private companies at current prices based on the price establishment methodology agreed to with the OSGMB.

“The OSGMB provides several important services. On behalf of the producer, the Board gathers and disseminates market and price information. It administers the Advance Payment Program of Agriculture and Agri-Food Canada for producers meeting the Program’s requirements. The OSGMB maintains marketing records from which it compiles an

average price to the producers by crop year. It gathers the information from which federal and provincial stabilization payments are determined. The OSGMB promotes the use of soybeans and soy products domestically and in key markets abroad. Through the Board, producer funds are channeled into research for improved soybean varieties or for new uses, such as roasted beans for animal rations. Finally, the OSGMB is an active lobbyist of the federal and provincial government on a variety of issues of concern to the industry.”

“Crushers: The Canadian Oilseed Processors Association is a non-profit industry association which represents all of the oilseed processing [crushing] companies in Canada. The association was formed in 1992 by the amalgamation of the Canola Crushers of Western Canada [founded in about 1979] and the Ontario Oilseed Industry Association [founded in about 1989]. The Association’s members include: ADM Agri-Industries Ltd., CanAmera Foods, Canbra Foods Ltd. and Northern Lite Canola Ltd.”

A list of eight of the Association’s main objectives is given. Address: 930 Carling Ave., Ottawa, ONT K1A 0C5, Canada. Phone: (613) 995-8324.

1509. Shurtleff, William; Aoyagi, Akiko. comps. 1994. *Soyfoods industry and market—Bibliography and sourcebook, 1985 to 1993*. Lafayette, California: Soyfoods Center. 361 p. Subject/geographical index. Author/company index. Language index. Printed 11 Jan. 1994. Published Jan. 1995. 28 cm. [1985 ref]

• **Summary:** This is the second of the two most comprehensive books ever published on the soyfoods industry and market worldwide.

In May 1982 the first study of the burgeoning soyfoods industry in the Western world was compiled by Shurtleff and Aoyagi, and published by Soyfoods Center. In April 1985 the fifth edition of that book, titled *Soyfoods Industry and Market: Directory and Databook* (220 pages), was published. It contained statistics through 1984, the market size and growth rate for each soyfood type, rankings of leading soyfoods manufacturers of each soyfood type and the amount each produced, analyses, trends, and projections. This book is published to update the 1985 market study.

In the decade since 1984 the soyfoods market has continued to grow at a very healthy rate, with some soyfood types (such as soymilk) growing at a truly astonishing sustained rate—in both the USA and western Europe—as the statistics in this book show so vividly. In 1975 only 75 new commercial soyfood products were introduced in the USA, yet that number skyrocketed to 217 in 1979, reaching an amazing 422 new products in 1987.

During the decade from 1984 to 1994, Soyfoods Center has invested most of its time and resources in the production of SoyaScan, the world’s largest computerized database on soyfoods, which contains more than 44,500 records as of Jan. 1994. This database also includes a wealth of carefully

researched statistics and analyses of the soyfoods market; those from the start of 1985 to the end of 1993 are contained in this book. Its scope includes all known information on this subject, worldwide. Its focus, however, is statistics, analyses, and trends concerning the soyfoods industry and market in the United States and Europe.

In May 1990 Soyfoods Center conducted an in-depth study of the tofu market in Europe (137 pages), and in July 1990 of the soymilk market in Europe (261 pages). All original interviews and published records from both of these market studies, plus a summary of each study, are included in the present book.

The SoyaScan database is composed of individual records. One record might be an original interview with the head of the largest soymilk company in Europe, on the size and growth of the soymilk market in Europe, and new trends in that market, conducted by William Shurtleff of Soyfoods Center. Another might be a published article or an unpublished document concerning the growth of the market for soy yogurts or soy sauce in America.

This book documents the growth of each product category in every country worldwide. The book contains three extensive and easy-to-use indexes: A subject/geographical index, an author/company index, and a language index. These allow you to find the exact information you need on the soyfoods industry and market quickly and easily. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

1510. British Consulate General. 1994. Haldane Foods Group Ltd. (Interview). *SoyaScan Notes*. Feb. 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The Haldane Foods Group has annual sales of about \$3 million (£2 million). Address: San Francisco, California.

1511. Pierce, Ray. 1994. A brief history of Genice Foods Ltd. and their work with soy ice creams, yogurts, creams, and margarine. Part I (Interview). *SoyaScan Notes*. Feb. 4, 8, 10, and 16. Conducted by William Shurtleff of Soyfoods Center. Followed by an 8-page fax on 7 Feb. 1994.

• **Summary:** From 1979 to 1982 Ray, a native of Wales, was general manager of Pendeltons Ice Cream. In March 1982, at age 41, he started a company named Classic Ices, which was primarily a dairy ice cream company. Located in Rhydymwyn (pronounced REED-uh-MOO-un), Clwyd (pronounced KLU-ud) County, Wales, the company began trading (making and selling products) in July 1982. In early 1984 Ray sold all but 10% of his shares in Classic Ices to the Hilldown Holdings Group but continued to work at the company. Then in May 1984 Irene Barclay joined Classic Ices as technical manager. In April 1985 Ray saw an article in *The Grocer* (April 6, p. 23) stating that Michael Cole of Soya Health Foods Ltd. had started making soya milk

and was planning to make related non-dairy products—such as soya ice cream. Ray called Michael Cole and asked if Classic Ices could develop and make a soy ice cream for him. Michael was interested, he came to visit Ray at Classic Ices, and that is how Ray's interest in soya ice creams began. Irene Barclay of Classic Ices worked closely with Michael Cole to develop the product. In about July 1985 Classic Ices started making Sunrise Ice Dream and selling it to Cole, who marketed it very successfully. Before this, Classic Ices had never made any non-dairy products. But Classic Ices was not particularly interested in non-dairy products, so Ray and Irene Barclay decided to leave Classic Ices in 1985 and start their own small company in Clwyd, Wales, about 10 miles from Classic Ices, at the same location they now occupy. The two business partners believed they saw a new market with great potential. Moreover, Irene was lactose intolerant so she could not consume dairy products. So Ray sold his remaining shares (10%) in Classic Ices to Hillside Holdings, then he and Irene established their company to develop and manufacture non-dairy dessert specialties—starting with soya ice cream.

They named the company Genice Foods Ltd. (short for "Genuine Ice Cream" and pronounced JEN-ais), but today many people pronounce the name jen-EES, which has come to be preferred by the company. In late 1985 Genice Foods moved into a brand new, small custom-designed, purpose-built factory unit in the Llay Industrial Estate. The unit was 5,000 square feet in size, but initially Genice used only half of that space—for manufacturing, cold storage/warehousing, and offices. In early April 1986 Genice was officially established and registered as a company and that same month, about two weeks later, they began trading. Today Ray's title is Director General Manager and Irene is the Technical Director. Genice's first product, launched in April 1986, was Genice Ice Delight, a non-dairy frozen dessert in 5 flavors (vanilla, strawberry, raspberry ripple, hazelnut, and pistachio & almond). Initially the main soy ingredient was powdered soymilk obtained from Michael Cole of Soya Health Foods, which probably imported it. But soon Genice switched to using soy protein isolates because they were less expensive and seemed to give a better product. At that time Genice bought the isolates from Macauley-Edwards (in Peterborough, eastern England), which later somehow became Purina Protein; today Genice buys most of its isolates from ADM (SP6, imported from the USA), but a little from Protein Technologies International for "old time's sake." Genice developed this product largely because they needed an actual product to show potential customers, but they never put much effort into marketing the product because they had already decided that Genice wanted to be a product development and manufacturing company and leave sales and marketing to other companies. Later in 1986 the manufacture of Sunrise Ice Dream was transferred to Genice from Classic Ices. It was now sold in four flavors—

vanilla, wildberry, hazelnut, and carob. Genice worked out an agreement with Cole that they would not compete by entering markets where Cole's product was established.

In 1986 Dayville Ltd. asked Genice if they could make a non-dairy frozen dessert intended to appeal more to the general grocery sector of the market than health food stores where Ice Delight and Ice Dream were sold. The product N'ice Day, was launched for Dayville in July 1986, sold in 3/4 litre packs in four flavors—vanilla, hazelnut, strawberry, and pistachio & almond. The soy ingredient was soy protein isolates. Continued. Address: Founder, Genice Foods Ltd., Pinfold Lane, Llay Industrial Estate, Llay near Wrexham, Clwyd, LL12 OPX, Wales/Cymru, UK. Phone: 0978-853-787.

1512. Pierce, Ray. 1994. A brief history of Genice Foods Ltd. and their work with soy ice creams, yogurts, creams, and margarine. Part II (Interview). *SoyaScan Notes*. Feb. 4, 8, 10 and 16. Conducted by William Shurtleff of Soyfoods Center. Followed by an 8-page fax on 7 Feb. 1994.

• **Summary:** Continued: At this time, Genice Foods was the only company in Europe manufacturing non-dairy frozen desserts, but the market in Europe was not expanding as rapidly as the market in the USA. Possibly the main reason for this was a greater perceived differentiation in the U.S. between dairy ice creams, containing up to 15% butter, and healthier non-dairy, lower-fat frozen desserts such as Tofutti and McQueens. By contrast, ice creams in the UK generally contained palm oil instead of butter and at a much lower level—around 6-8%. Other reasons for the rapid growth of the U.S. market could be: Greater awareness of lactose intolerance, a larger number of vegetarians, larger ethnic communities, and cost consciousness. With Genice being the only manufacturer of non-dairy frozen desserts, it was difficult to satisfy existing and potential customers without some duplication of products in the market place. However Genice was also attempting to help these companies avoid competing directly with one another by suggesting different package sizes, flavors, package shapes, etc. Hence in 1987 Maranellis Ice Supreme was launched for Unisoy (before Unisoy was acquired by Haldane), in a ½-liter format, sweetened with fruit juice, in 3 flavors—raspberry ripple, vanilla, and chocolate. The product was made from fresh soya milk, delivered to Genice by Unisoy. Another non-dairy frozen dessert launched in 1987 was Sunrise Carob Ice, a frozen soya vanilla-flavored bar covered with a carob coating, made for Soya Health Foods Ltd., Michael Cole's former company; the product sold extremely well.

In March 1989, the Haldane Foods Group Ltd., part of the Archer Daniels Midland Co. (ADM), acquired a 70% interest in Genice. Genice Foods approached the Haldane Group since Genice needed both cash and access to bigger markets in order to develop properly. Peter Fitch, head of the Haldane Group, has told Ray many times he didn't really

want to acquire Genice; Ray had to court him for 9 months before he agreed to acquire Genice. Haldane was an ideal partner, being one of the biggest health food manufacturers in Europe (they made mostly vegetarian main courses), but having no dessert products. Genice made mostly non-dairy frozen and chilled desserts. Also the cash backing from ADM was equally important in creating and developing new markets. ADM and the Haldane Group gave Genice the freedom to continue to develop and make products for companies (such as Soya Health Foods and Dayville Ltd.) outside the Haldane Group.

In April 1989 Sweet Sensation, another non-dairy frozen dessert, was launched for Granose Foods in a 3/4 liter pack composed of a rectangular plastic tub in a cardboard sleeve, in 4 flavors—tutti frutti, black cherry, raspberry ripple, and vanilla. Genice made this product for Granose before and after Granose was acquired by the Haldane Group. Another non-dairy frozen dessert products launched in 1989 was Vegedine Mousse a frozen mousse dessert in two flavors—carob & walnut, and strawberry. Vegedine was a very small company in Bournemouth, sales to health food shops were small, and the company soon went out of business.

Following the acquisition by Haldane, the pace of development speeded up at Genice. Previously, products had been produced from either powdered soya milk and soy protein isolates, or soya milk imported from Unisoy. In late 1989 a small soya milk plant was installed at Genice with the ability to produce limited quantities of tofu also. With the new availability of tofu, two new non-dairy frozen products were launched: (1) So Good Tofu Dessert for the Haldane Group, a 3/4 litre pack in a round cardboard tub flavored as a strawberry/vanilla split, or as wild blackberry; and (2) So Good Strawberry Bombes for the Haldane Group, a 100 ml vanilla flavored base with a strawberry puree center, coated with carob couverture, and sold in retail packs of four. Because of Haldane's extensive contacts throughout Europe, Genice products are now sold in 7 European countries. The company also made a brief foray into the kosher market in America, when they sold some So Good Strawberry Bombes to a distributor named Quality Foods in Long Island, New York, but Genice had a bad experience and ended up with an unpaid debt on their first shipment. About 4 years ago Ray exhibited some of his soya products for 2 years in a row at one of the New York Kosher Fests. There he met David Mintz of Tofutti fame. Ray would like to try to enter the New York market again some day; it's a big market.

Genice uses fresh soymilk (produced by Unisoy) to make the majority of its total volume of soy ice cream, and isolated soy protein to make rest. Powdered soymilk is not used because it is very expensive and too hard to obtain. Ray now feels that fresh soymilk gives a better soy ice cream. Genice is now producing a range of development samples for Dayville Ltd., which is going to re-launch their soy ice creams this year and they have picked the one made with

soymilk as being the best. From the production viewpoint, isolates are much easier to use, but product taste and overall quality is the key point. Moreover, organic soymilk can be used to make an organic soy ice cream, but there are no organic soy isolates.

Genice is still the only manufacturer of soya frozen desserts in the UK. However two strong, competing products are now being imported: Winner's Swedish Glace from Sweden and Tofutti from the USA. Three years ago Genice made more than 90% of the soy ice creams sold in the UK, but today that figure has dropped to an estimated 50%, with Winner in second place, followed by Tofutti. Ray is concerned that Winner could overtake Genice in soy ice creams this year. During 1994 Genice plans to rationalize and reformulate its soy ice cream product line in order to concentrate its marketing efforts more on its best products, to eliminate or merge its own brands of the same type that compete with one another, and to put more effort into sales of soy ice creams. Continued. Address: Founder, Genice Foods Ltd., Pinfold Lane, Llay Industrial Estate, Llay near Wrexham, Clwyd, LL12 OPX, Wales/Cymru, UK. Phone: 0978-853-787.

1513. Pierce, Ray. 1994. A brief history of Genice Foods Ltd. and their work with soy ice creams, yogurts, creams, and margarine. Part III (Interview). *SoyaScan Notes*. Feb. 4, 8, 10, and 16. Conducted by William Shurtleff of Soyfoods Center. Followed by an 8-page fax on 7 Feb. 1994.

• **Summary:** Continued: Genice developed its first soy yogurt in 1988; it was a chilled/refrigerated product that the company never actually launched. Genice has never made or sold a soy yogurt under the Genice brand, for reasons mentioned earlier—that the company wants to focus on product development and manufacturing, not marketing. Not long after April 1989, when Genice joined the Haldane Foods Group, they started to make Haldane Yoga, a chilled soy yogurt owned by the Haldane Group, but originally launched by the Regular Tofu Company in 1986. This and all subsequent soy yogurts made by Genice have been cultured products. Haldane Yoga product sold at the rate of about 500 to 1,000 cases per week, continuing until early 1990 when Genice developed a unique process for making pasteurized yogurts that have a 4-month shelf life at ambient temperatures. One other dairy company in the UK [Bridge Farm Dairies] was already producing an ambient stable product, but it suffered from protein degradation and did not contain large pieces of fruit. Genice attacked the problem from two directions—process design and product development. The process design concentrated on the necessity of pasteurizing the yogurt containing large chunks of fruit without degrading the soya protein. The product development consisted of producing a product with heat-stable natural flavors and colors at low pH (range: 3.6 to 3.8 when done). The results were highly successful.

The secret to the Genice process for making shelf-stable products is the “protein protection.” If the process is not done correctly, all the protein precipitates, resulting in a very poor lumpy product that looks like porridge. The TVC (total viable count) is less than 10 in each soy yogurt product right after packaging, so they are almost as sterile as if they had been treated by UHT. The pH ranges from about 3.8 to 4.0, which gives added protection. This allows them to sell their yogurts using unrefrigerated distribution, which is much more economical. In the UK, most refrigerated distribution is done only by very large food companies.

Genice now makes 4 different brands of non-dairy soya yogurts for sale in the UK in 12 flavors. (1) So Good Yoghert (launched in early 1990 in 3 flavors—strawberry, black cherry, and peach & passion fruit; this is the Haldane brand; the So Good name has no connection with the same name used by Sanitarium Foods in Australia); (2) Unisoy Soya Yogart (launched in late 1990 in 3 flavors- raspberry, peach melba, and black cherry; Genice made these yogurt products for Unisoy before they joined the Haldane Group; before that, they were made by Bridge Farm Dairies in southern England—which attempted to make a shelf-stable product using dairy technology); and (3) Granose Soya Yogert (launched in late 1990 in 4 flavors—peach melba, strawberry, apricot, and blackcurrant & apple; Granose became part of the Haldane Group in Jan. 1991); (4) Granose Hi-Fruit Premium Yogert (launched in late 1992, with double the fruit content, 20%, in 3 flavors—kiwi & passion fruit, nectarine and pineapple, and fruits of the forest). Note that there is some duplication of flavors among different brands.

Starting in 1992 Genice started to sell its soy yogurts outside the UK. First in 1992 the So Good line of soy yogurts was launched in Spain, in cups printed in Spanish, for ADM-owned Arkady ADM Iberica S.A. (Carretera de Hospitalet 42, Cornellà de Llobregat, Barcelona, Spain) with the addition of two new flavors—orange and natural. In late 1992 the Spaniards requested their own brand, so So Good was changed to Alisana; Four Soya Yogerts (120 gm each) were sold in each pack. The Spaniards are apparently becoming very health conscious, because Spain is now Genice’s biggest export market, taking about 20% of all the soy yogurt that Genice makes. In late 1992 the So Good line was launched in Sweden, Norway, and Denmark using, in part, the pre-existing Granose distribution network. One product, named So Good Soya Frutty, was sold to all 3 Scandinavian countries. The label was in Swedish and the names of all 3 distributors were on it. The distributors are: (1) Kung Markatta AB, Hjalmsberg, S-705 95 Örebro, Sweden (this is Genice’s second largest export market); (2) Alternative Mat A/S, AVD Import, Kubben, 2150 Arnes, Norway; (3) Grön Distribution, Hoje Gladsaxe Torv 2, 2860 Soborg, Denmark (Genice has not dealt with Grön since 1992). At about the same time the So Good Yoghert (with its regular English label) was introduced to Finland, distributed

by Oy Makrobios AB, Leksvall, 10600 Ekenas, Finland.

Then in early 1993 Genice’s So Good soy yogurt was launched in Italy, in English with a sticker applied by Genice, thru a company partly owned by ADM named AFG Italy S.r.l. (Via S. Cassiano 76, Trecate, Novara 28069, Italy) and in mid-1993 in Portugal with an English label through another ADM subsidiary, Natiris (Centro Dietetico Lda., Rua de Santo Antonia, Estrela No. 31-B, 1300 Lisbon, Portugal). Italy is one of the two fastest growing yogurt markets in Europe, and it may soon pass Sweden to become Genice’s second largest export market. Continued. Address: Founder, Genice Foods Ltd., Pinfold Lane, Llay Industrial Estate, Llay near Wrexham, Clwyd, LL12 OPX, Wales/Cymru, UK. Phone: 0978-853-787.

1514. Pierce, Ray. 1994. A brief history of Genice Foods Ltd. and their work with soy ice creams, yogurts, creams, and margarine. Part IV (Interview). *SoyaScan Notes*. Feb. 4, 8, 10, and 16. Conducted by William Shurtleff of Soyfoods Center. Followed by an 8-page fax on 7 Feb. 1994.

• **Summary:** Ray feels that these soy yogurts are excellent products. Consumers must have the same opinion since the market is growing very rapidly. “In retail terms, this soya yoghurt market is now worth around £2 million sterling (\$3 million), whereas it was worth only about £30,000 sterling in 1985.” The market was almost totally created in the last four years—since Genice started making soy yogurt using its unique process that gives a shelf-stable product.

Today Genice now sells about ten times as much soy yogurt as soy ice cream. Moreover, sales of soy ice cream are fairly static, while sales of soy yogurt are leaping ahead. Genice makes at least 90% of the soy yogurts sold in the UK. In short, Genice started as a non-dairy ice cream company, which has in fact turned into a non-dairy yogurt company! “The soy yogurts really sold themselves. It was amazing how they took off so well.” There are about 1,500 health food shops in the UK, and no more than half of those have a freezer, so they cannot sell ice cream. Even those with a freezer, usually have very limited frozen storage capacity and the competition for that small space (as from dairy ice creams) is intense. Almost all of those with no freezer also have no refrigerated storage; they sell mainly “pills and potions” etc.” So a refrigerated or frozen product can be sold in less than half of all health food stores. This gives shelf-stable products, such as Genice’s soy yogurts, a big advantage. Genice is moving its soy yogurts into Italy and Portugal in a bigger way, and is launching two new yogurts for Spain this year (competing soy yogurts are sold on a small scale in Spain). Other concepts and flavours will be introduced into the yoghurt area in 1994, together with the quest for other export markets continuing both in Europe and the rest of the world.

Genice uses fresh soymilk (produced by Unisoy) to make about 50% of its total volume of soy yogurt, and

isolated soy proteins to make the other 50%. Powdered soymilk is not used because it is very expensive and too hard to obtain. Isolates are more convenient to use but Ray now feels that fresh soymilk gives a slightly better product—though this is very subjective and different people have different opinions. Isolates also give an excellent soy yogurt.

One of the markets that Genice has not yet entered—and would like to—is Germany, where there are large sales of soymilk and twice as many health shops (Reform Houses) as in the UK. Since most of the Reform Houses do not have chilled or frozen cabinets, Genice's shelf-stable products would fit perfectly; they could be sold on the shelf next to the Muesli. In the smaller health food shops in the UK, Genice's shelf-stable soy products are usually sold unchilled, but in the bigger shops, like Holland & Barrett, they sold chilled, since they taste better after being chilled.

Other dairylike non-dairy products that Genice has made are as follows: In 1990 chilled So Good Soycream was launched as a non-dairy alternative to dairy double cream, but low in cholesterol, high in polyunsaturates, and low in saturates. It was made for Haldane in a little beige plastic pot with a green foil lid, packed at the Genice plant. It contains a trace of cholesterol because law requires that it contain 36% oil, including some palm oil. In 1991 a shelf-stable UHT version (completely sterilized, with a 9-month shelf life), now named Granose Soya Cream, was launched in a 225 ml Combibloc pack, made for Genice by a large dairy in Ireland which had Combibloc packaging equipment. The chilled So Good Soycream was discontinued. In 1992 Genice installed a vegetarian margarine plant, which also makes Granose Soya Margarine that is sold chilled. This margarine was developed in Germany, so they took over the business and reformulated the product.

Genice is doing very well. The plant has expanded to 15,000 square feet from its original 2,500—a 6-fold increase. Their turnover (gross sales) has doubled virtually every year since they have been in business. Being owned by ADM has been of great benefit to Genice because ADM has been extremely generous in providing the money that Genice needs for its ongoing expansion and implementation of new ideas. Genice would eventually like to enter the U.S. market (starting in New York) with its shelf-stable non-dairy yogurt products, since there are no such products in America.

When yogurt is pasteurized, the beneficial effects of the yogurt bacteria are nullified. But Ray was just told by Dr. Glen Gibson that oligofructose, a sugar, has the effect of promoting the growth of the small quantities of Bifidobacteria in the human digestive system. Thus a pasteurized soy yogurt could be made into an even healthier product if it were sweetened by oligofructose.

Ray is a native of Wales and his wife is a teacher who often teaches in Welsh. Both are happy to see the revival of the Welsh language. Ray is not a vegetarian, but he has a good feeling and high regard for vegetarianism, he likes

vegetarian food, and he has some vegetarian ideals but they go beyond the food to more ethical issues. He finds that many of the people in other companies that he deals with are more ethical people. He would estimate that 85-90% of the consumers who buy products made by Genice are vegetarians or vegans. Address: Founder, Genice Foods Ltd., Pinfold Lane, Llay Industrial Estate, Llay near Wrexham, Clwyd, LL12 OPX, Wales/Cymru, UK. Phone: 0978-853-787.

1515. Bahner, Benedict. 1994. Varied growth: In the steroids industry, the large-volume sector is not expected to show significant gains, but specialty steroids' future looks bright. *Chemical Marketing Reporter* 245(6):SR8. Feb. 7. In 22-page section titled "Intermediates '94—A CMR Special Report."

• **Summary:** Steroid production is based on a number of raw materials, among them several "soysterols" (soy sterols). The size of the world market for bulk steroids is estimated to be \$600 million, with about 50% of that figure representing corticosteroids (primarily hydrocortisone, hydrocortisone acetate, prednisolone, prednisolone acetate, and prednisone) and about 40% being specialty steroids (typically used as intermediaries for various drugs; produced on a company-to-company basis as building blocks for particular patented drugs, they never reach the open market). Major specialty steroids include dexamethazone and triamcinolone; this sector may be growing at 10-12% a year. But in terms of volume, corticosteroids make up about 75% of the bulk steroid market.

The four major players in bulk steroid production are Upjohn (USA), Roussel-Uclaf (France), Schering AG (Germany), and Akzo's Diosynth business unit (Netherlands). These companies belong to the Pharmaceutical Manufacturers Association (PMA).

In December 1993 Upjohn's \$60 million streamlining of its plant in Kalamazoo, Michigan, came on line; there it produces corticosteroids, two estrogen products (estradiol and estradiol cypionate), and some testosterone.

Sitosterol is a byproduct of natural vitamin E, of which Henkel is the largest maker. Last year the vitamin E market posted a unit sales growth of 35%; as long as it stays strong, the supply of sterols to the marketplace should be adequate.

But the entry of Archer Daniels Midland (ADM) into production of vitamin E (expected to take place in 1995) could raise the issue of sitosterol pricing. It is currently priced at about \$6/kg, up 50% from 1991. If prices move over \$7/kg, steroid producers will start to look for other raw materials for steroid manufacturing. Prices for hydrocortisone remain high, between \$900 and \$1,000/kg.

Unlike corticoids, the market for estrogens and progestins is growing, driven by increasing acceptance of estrogen replacement therapy in post-menopausal women. "Estrogens, which fell out of favor in the mid-70s because

of cancer fears, have made a comeback... and the popularity of estrogens is driving growth in progestins, which are being prescribed more frequently alongside estrogens.”

The leader in consumer products, Premarin, made by Wyeth-Ayerst Laboratories, has estimated sales of nearly \$1,000 million (\$1 billion); 80-90% of these sales are in the USA.

The market for androgens and anabolics (anabolic steroids) fell sharply following the decision of the DEA (Drug Enforcement Agency) to crackdown on illegal use of anabolic steroids. The main legal producer is Organon, a subsidiary of Akzo, in West Orange, New Jersey.

Note 1. This is the earliest document seen (Sept. 2001) that mentions Premarin in connection with soy—although it is not made from soy. According to a June 1998 news report on prescription drugs in America, Premarin is the most prescribed drug in America, with over \$1 billion a year in sales. It is used by older women for menopause and osteoporosis.

Note 2. This is the earliest document seen (Sept. 2001) that contains statistics about the estrogen industry and market—even though these estrogen products are not made from soybeans.

1516. Pierce, Ray. 1994. The origins of the Haldane Foods Group (Interview). *SoyaScan Notes*. Feb. 8. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Two men were instrumental in conceiving of and putting together the Haldane Foods Group: John Mahlich of British Arkady and Peter Fitch. Ray knows both men well and respects them greatly. Peter does a lot of the leg work, whereas John is the man who actually goes to ADM and requests the money. Ray sees John about twice a year and he is located nearby. John, who is about age 66, is an extremely alert and competent person—one of the most competent men Ray has ever met and, moreover, a very approachable gentleman. John has no particular personal interest in vegetarianism but he definitely understands it, sees its potential, has a strong commercial interest in that potential.

Peter Fitch has told Ray many times he didn't really want to acquire Genice; Ray had to court him for 9 months before he agreed to acquire Genice. Both British Arkady and the Haldane Foods Group report to ADM, but Ray thinks John Mahlich is responsible for both. John actually works at and is the top man at British Arkady. Bill Pringle worked for John, but Ray thinks Bill is now retired.

Brian Wellsby started Haldane Foods, and after his company was acquired by the Haldane Foods Group, he went to work for the Group for a while and then he left the Group in late 1989, after Genice was acquired.

A number of the heads of the companies in the Haldane Foods Group are not vegetarians. Of these companies, Granose and its top people are probably the most strongly committed to vegetarianism—in part because of its origins as

a Seventh-day Adventist company. Some people at Haldane are also committed to vegetarianism. Address: Founder, Genice Foods Ltd., Pinfold Lane, Llay Industrial Estate, Llay near Wrexham, Clwyd, LL12 OPX, Wales/Cymru, UK. Phone: 0978-853-787.

1517. Lensch, Lee. 1994. ADM's involvement with Midland Harvest and Harvest Direct (Interview). *SoyaScan Notes*. March 4. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** ADM's Soy Protein Division produces the Harvest Burger and Harvest Burger products. Harvest Direct is a separate company that has no affiliation with ADM, but that sells various food products (including ADM dry mixes) by direct mail. They buy products from ADM for their mail order business. ADM helped Harvest Direct to get started but ADM did not want to have or own a mail order company. ADM is glad they exist. They have many products in their mail order catalog that are not from ADM.

ADM also makes and sells 4 frozen products that Harvest Direct does not handle. These consist of 3 meatless Midland Harvest Harvest Burgers (Original Flavor, Taco Flavor, and Italian Style) and Midland Harvest Breakfast Patties. These were first produced in Jan. 1991, retail ready. ADM rarely sells foods retail but they have long sold some retail products in the Great Plains made by Martha Gooch / Gooch Foods (a milling and pasta company owned by ADM). The 4 Midland Harvest products was ADM's second retail line. In April 1990, before Harvest Direct was established, ADM started its first “public tasting” of the Harvest Burgers (as frozen patties) in Decatur. It took until September 1990 to get packaging for the product, and that month ADM made its first shipment, to Super Value supermarkets in Minneapolis, Minnesota, with Indianapolis being the real focus test market. So ADM sold directly to a supermarket chain, not to a food distributor. In Jan. 1991 the four frozen Midland Harvest products first really hit the grocery store shelves in Indianapolis as a test market. Since Jan. 1991 ADM has continued to expand the test market from Indianapolis to include Minneapolis, St. Louis, Chicago, Dallas, Fort Worth, Houston, San Antonio, Milwaukee, and Louisville. The purpose of this expanding test market was to see how the product would sell. As ADM saw how well it did sell, and kept getting more and more requests to expand, they expanded production and distribution. At the same time, they began to look for a company that could handle the product better than ADM could—since ADM is not really in the retail foods business. In mid- to late 1991 Safeway in California called ADM to enquire about the product; ADM said they were not yet ready to sell Harvest Burgers in California. Finally ADM signed an agreement with Pillsbury to distribute and sell these 4 products under the Green Giant brand.

Pillsbury started with the products in October and to

date they have increased their sales forecast for the year once and they are contemplating another increased forecast. Pillsbury noted: "Acceptance is quicker and wider than we anticipated which should allow us increased sales for fiscal 1994." So ADM is back in the position it likes to be in, as a manufacturer rather than a distributor to the retail trade.

Harvest Direct is also doing very well; they keep expanding their business. Address: Harvest Burger Manager, ADM, Decatur, Illinois. Phone: 217-424-2492.

1518. Mahlich, John. 1994. History and development of the Haldane Foods Group Ltd. Part I (Interview). *SoyaScan Notes*. March 8. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Several people have been involved in the evolution of the Haldane-Granose Division. Archer Daniels Midland Co. (ADM, headquartered in Decatur, Illinois) bought The British Arkady Co. Ltd. about 20 years ago. At that time Arkady had been in existence in the UK for about 35 years, was a large supplier of bakery ingredients, but also was a miller of full-fat soya flour. "Arkady was in the soya business and this was the prime reason why ADM was interested in us, other than, of course, the nature and shape of our company. The original decision to buy Arkady was Dwayne Andreas's, so Dwayne Andreas has always been there, behind everything that we have done, and usually, if not always, has basically approved any acquisition that we have made."

After ADM bought Arkady, Arkady installed textured vegetable protein (TVP) plants in Manchester to ADM's design. Arkady sold textured vegetable protein principally to the meat industry as part of a meat system (an analog, a sausage, etc.). They also sold some TVP to the pet food industry. Anna and Peter Roberts, the founders and owners of Direct Foods, Ltd. were buying Arkady's TVP in bulk, then packing it into small domestic retail packs. At about that time (John does not remember whether it was the Roberts' idea or Arkady's idea), Arkady developed the Sosmix and the Burgamix using Arkady's technology, and manufactured those products for Direct Foods. Because Direct Foods had become a reasonably sizeable company, and Arkady was selling them quite a percentage of their TVP, John (who was then the managing director of Arkady) and Bill Pringle (Arkady's technical director) thought that Arkady should buy Direct Foods; that would guarantee the continuity of Arkady's large sales of TVP to them. "We could run Direct Foods and we would have the profit that they were making out of our product as well as our own margins." John and Bill approached Anna and Peter, who had worked incredibly hard to build their small business and they were of an age where John felt they thought Arkady's offer was fair and they should take the money and just retain their health food shop in Petersfield and enjoy the fruits of their years of work. So the sale was a happy event of both parties. So in March

1985 Direct Foods became the first member of what would become the Haldane Foods Group.

At that time Peter Fitch was a development chemist with Arkady. He is a food technologist by training. John asked Peter if he would become General Manager of Direct Foods. Having gotten into this business, Arkady liked what they were doing, so they began to look at other ways of adding value to textured protein. John happened to be at a health food exhibition, where he met the woman who was running a company named Vegetarian Feasts. John already knew a little about this company, and shortly after the exhibition John approached her and offered to buy her business. He saw an opportunity to put a lot of textured protein into her range of frozen meals and to add value to textured protein in that way. That purchase was completed in Feb. 1986. Peter Fitch took on the general management of that company as well, and Sonia Newhouse (the founder and former owner) became a consultant. This was a small company and it was not very profitable—but it put Arkady in the frozen food business. So they then started to make a range of frozen vegetable burgers containing vegetable protein and various grains.

John then heard about a company named Vegetarian Cuisine Ltd. which basically was doing the same sorts of things as Vegetarian Feasts. Vegetarian Cuisine had a nice factory in Coventry, whereas Vegetarian Feasts had a factory in London that was very expensive. John saw the opportunity to put the two into one manufacturing unit and to reduce costs by sharing them. So British Arkady bought Vegetarian Cuisine in 1987.

By this time Arkady was on the treadmill toward developing a "group" of companies, but they did not yet have a clear vision of the nature of this group. "It was because we were playing the game on a hand's on basis that we saw the opportunities. But as our plans evolved, they became more and more clear."

Next Arkady bought Haldane Foods Ltd., which owned The Regular Tofu Company. The acquisition was finalized in August 1987. Haldane Foods had the best factory and offices in the still nameless group, and it was the biggest of the companies Arkady had acquired, and the one with the nicest sounding name. So British Arkady coined the name Haldane Foods Group Ltd., and began to use it as the first name for the new group of companies. With each new acquisition, Peter Fitch continued to be the Director General Manager leading the Group. Sometimes it was decided to keep the past management of individual companies on board, maybe as directorships or maybe as consultants, but in a variety of positions.

By late 1987 Arkady was getting fairly excited about production of frozen vegetable burgers. As they got into that market they found there was company named the Realeat Company, which was the dominant player in the frozen vegeburger business at that time, and which had been started "by a very capable and likeable man named Gregory Sams."

It seemed to John that he could advance the new Group's cause by buying Realeat. So they approached Gregory Sams and in September 1988 bought his business. That had great benefits for Arkady and the Haldane Foods Group because Realeat had no factory and no sales organization. One company was making the sachet mix, another company was selling it, another company was buying bulk mix from his sachet packer, and still another company was making it frozen; all in all a lot of people were taking a cut. So by tidying that all up and bringing it in house, Arkady had the chance to improve Realeat's financial status. Continued. Address: The British Arkady Co. Ltd., Skerton Road, Old Trafford, Manchester M16 0NJ, England, UK. Phone: 061-872-7161. Fax: 61-873-8083.

1519. Mahlich, John. 1994. History and development of the Haldane Foods Group Ltd. Part II (Interview). *SoyaScan Notes*. March 8. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: Next, in Feb. 1989, the Haldane Foods Group purchased a company named Kwaliti Foods. They made sauces, spreads, and dips. John liked the management, their products, and the price at which they offered to sell the company, which had a financial problem—they had run out of money. The Group subsequently changed the name of Kwaliti Foods into Saucemasters Ltd.

While owning Saucemasters, the Group started another company named Snackmasters Ltd., which was wholly owned by Saucemasters. Then in 1993 the Group sold Saucemasters, but retained ownership of Snackmasters, which they relocated in a new factory adjacent to the Haldane factory. It basically makes noodle- or rice-based vegetarian snack meals that contain textured protein and dried vegetables with a sauce sachet in each plastic cup. You pour hot water into the cup, leave for 4 minutes, and you have a very convenient and nutritious meal. This type of product is a big business in England; one company, Golden Wonder, dominates the market. But Snackmasters has carved out a niche by making ethnic vegetarian meals (Chinese, Indian, etc.), and using their sauce company to make the sachet of sauce. They have taken the product up-market by some ingenious developments and the company is thriving.

In March 1989, a month after buying Kwaliti Foods, the Haldane Group purchased Genice (pronounced JEN-ais) Foods, which makes non-dairy ice creams, yogurts, and margarines. "By this time we were deeply into the healthy food, health food, vegetarian business." Though this was the Group's first company to make non-dairy products, it fit well because their products were basically made from soya—either soymilk or soya protein isolates. "Not only were we developing a group of interesting companies that can make some profit, but we were also signaling to a very large audience that maybe others (such as the many food manufacturers who have been hesitant to use soya) should

get into the soya business. And ADM likes that, because the more it is obvious that soya is here to stay and that it has multitudinous uses, the more Dwayne Andreas's dream will come true. Truthfully, we do not fear competition; the more that are in the business, the merrier. If you can get companies like Unilever to start using soya, then you get good publicity on a global basis.

"Genice is doing a very good job, but I have to say truthfully that selling non-dairy ice cream is missionary work. You need converts, and if you don't get them you're not a happy missionary. It's just a fact that most people want products with more and more cream. But at Genice we were going in the opposite direction—but successfully, though with slow growth. That's a tough number but we are hanging in and more and more will be sold. The non-dairy yogurts, incidentally, are going exceedingly well. That's good business."

ADM is a very acquisitive organization. For this reason, John and Peter Fitch were always looking for promising companies to add to the group. In the 20 years that John has worked for them, he has bought more than companies—with many outside the Haldane Group. Dwayne Andreas was aware of each of the Haldane Group's purchases as they took place. "He was totally aware of what we were doing and obviously was approving as we went. "You have to remember that Dwayne Andreas is very much committed to the evolution of the soyabean. He certainly has shown the keenest of interest in everything that we have done. I report directly to ADM and I could not buy a business without the approval of Dwayne Andreas (or Jim Randall) and finally the ADM board of directors, which meets quarterly... Yet ADM is a very fast-moving animal, and you can't contain its dynamism by quarterly meetings. The whole thing is designed to move with speed. So some acquisitions have been made before the board meeting; the contract simply reads 'Subject to board approval.'"

In those days John used to go to the USA quite a lot because he was running the ADM-Arkady business there for ADM; it was a manufacturing business in Chicago, Illinois—it's now in Kansas.

In December 1990 the Haldane Group purchased Unisoy, a small soya company which was for sale and which made soymilk. In the early 1990s a situation developed where the Haldane Foods Group had a sales director who had been a previous employee of Granose Foods. He suggested that the Group might be able to buy the Granose Foods company. "He had a key to open that particular door. It was with his basic introduction that we approached Granose, and subsequently we bought all of Granose. Granose had built a brand new and beautiful factory which was about 40 miles north of London, and that fit it very well to the growth and pattern that we were following." So the Haldane Group moved the center of their operations out of the Haldane factory and into the Granose factory, where it now is. The

group still usually calls itself the Haldane Foods Group Ltd., but under some circumstances other names may also be used—such as the Granose Foods Group.

Granose was selling soyamilk that was being imported from a German manufacturer [DE-VAU-GE]. The Haldane Group decided to discontinue these imports, and now Unisoym is making all of the soyamilk for Granose that used to be imported from Germany. The quality of Unisoym's soyamilk is definitely as good as the German-made product, and now Granose has added many new soyamilk products to its range, with vitamin enrichment, etc. However, it seems like the total soyamilk market in the UK is no longer growing. Continued. Address: The British Arkady Co. Ltd., Skerton Road, Old Trafford, Manchester M16 0NJ, England, UK. Phone: 061-872-7161. Fax: 61-873-8083.

1520. Mahlich, John. 1994. History and development of the Haldane Foods Group Ltd. Part III (Interview). *SoyaScan Notes*. March 8. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: Perhaps the key concept that governed the formation of the Haldane Group was adding value to soya—even though that policy was never clearly spelled out. In one sense, each company was acquired, one by one, without any overarching plan, on its own merits. Yet all companies in the group (except Saucemasters) make value-added foods from soya. The Group is fundamentally a “healthy foods” company that makes only vegetarian foods (i.e. those which contain no meat, fish, or poultry). Most of the foods are also vegan in that they contain no animal products.

The Group has bought about 13 companies and each had its own niche, name and reputation. Each company had its own brands, each of which had a reputation, and the Group has tried to keep these and promote them.

The Haldane Group could not have developed without the very strong health food market in the UK, where there are more than 2,000 health food retail shops. Equally important is the strong interest in vegetarian foods in the UK. When British Arkady bought Direct Foods in 1985, supermarkets in the UK had no space at all for healthier foods or vegetarian foods. Now they all have a separate health food section and that section is steadily growing.

Companies like Birds Eye (owned by Unilever) stand like a praying mantis and wait until the Haldane Group has built the market for Vegebürgers to such a size that they can enter the market with their own vege burger backed by all of their marketing clout; they will try to push out competing products and steal your market. “They come into the supermarkets with their overriding discounts and they say ‘We’re already selling you £20 million. Put this product in and then you get another million pounds, plus you get a preferential discount, etc.’” This is a real concern as the Haldane Group becomes more of a force in the UK

market. Fortunately there are 350 million people in the entire European Community. Moreover the Haldane Group has a bright future because they are “extremely inventive” and they have many loyal customers. They are leaders and other companies are following.

“Most all of these companies that we bought were started by devotees of healthier foods or vegetarians.” They all started small but most did not realize what a big, expensive step it is to get into food processing. So many of the companies were founded on good ideas but were crippled because their founders lacked business experience and were undercapitalized.

The various products sold by the companies in the Haldane Group are being made in five factories: the Unisoym factory (soyamilk), the Genice factory (non-dairy yogurts, ice creams, and margarine), the Haldane factory (which makes all dry mixes), and the Granose factory (which makes frozen burgers and many other non-dry products).

The Group now sells a large amount of frozen vegetarian sausages. If you make a conventional skinless sausage, you must first make it in the skin, then case harden it, then finally remove the skin. But removing the skin costs you money. So the Group has gotten a unique machine (they were the first to get it, but there are now a few others in other companies) that makes skinless sausages from the start. The machine was invented by another British company of which John used to be a director. These skinless sausages have become a big business and the product is of excellent quality. The Group plans to introduce this sausage product in new forms, such as sausage roles in pastry.

The Haldane Group is also doing a lot of private labeling for supermarket chains. The big food companies in the UK spend many millions of pounds on advertising, and they can slip in a vegetarian product under a known brand name. An example is ADM's Harvest Burger sold under the Green Giant label in the USA, which led to a big increase Harvest Burger sales. The Haldane Group cannot afford to spend huge sums of money advertising its own brands. So they are finding that it is in their own interest to develop their own brands but at the same time to go to some of the supermarket chains and offer to make products under the supermarket's brand. This is one way the Haldane Group can find new growth. Continued. Address: The British Arkady Co. Ltd., Skerton Road, Old Trafford, Manchester M16 0NJ, England, UK. Phone: 061-872-7161. Fax: 61-873-8083.

1521. Mahlich, John. 1994. History and development of the Haldane Foods Group Ltd. Part IV (Interview). *SoyaScan Notes*. March 8. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The Group has an annual turnover (sales) of about US\$20 million. It is still looking for new business, but there are not many left to buy in the UK. The Group's UK operations are well organized and running well, with

good factories, product development, distribution. Now they have decided to take their products into continental Europe. “If you can’t get it right at home, you don’t want to take it abroad.” The Germans are the most health conscious eaters on the continent. This is a complex business because of a host of different conditions (laws, flavors, terminology, etc.) in each country, but the Group is presently trying to find its position in each of these markets. The Arkady Food Group (consisting of 7 companies that supply the baking industry with products) has manufacturing companies in Germany, France, Spain, Portugal, and Italy. Some of those are acting as distributors or agents for products from the Haldane-Granose Group. For example, in Spain, where there is a company named Arkady ADM Iberica, they have started a new division within that company called Alisana, which is selling the Haldane Group’s products. But each product and its promotional materials must usually be modified for each market. Eventually, when tonnage warrants it, the Group hopes to start production in the various countries because transportation costs are very high—especially for frozen products.

Concerning possible entry into the U.S. market, John emphasizes the difference between selling commodities and selling specialties. You must think big in selling commodities and think small in selling specialties. John thinks that ADM is committed to much the same vision as he is “but their day to day work causes them to think in megatons.” Yet the Harvest Burger may be changing that. ADM has recently employed Larry Cunningham to run their protein division. He has grown up in the business and he is extremely interested in the Haldane Group’s activities. John thinks that as time passes ADM will embrace more and more of the activities that the Haldane Group has been involved with since its beginning. Yet John does not see a separate group, like the Haldane Group, starting in the USA. Rather he thinks that the Haldane Group has at least six world-class products, and that these will be sold in the USA. The Harvest Burger is, in fact, based on some of British Arkady’s technology.

The Group has recently launched a new vegetarian product named Vegemince that John thinks has great potential in replacing what Americans call “ground beef” and what Britons call “mincemeat.” Made at the Granose plant, it is based on textured vegetable proteins, including wheat gluten. “It is an extremely ingenious product that we’ve got patents filed for. It has an excellent texture that gives the mouth pleasure.” The Group plans to sell it to other companies that manufacture meatless products. The Group is developing many new products, even though it now has more products than he wants.

To summarize: “We have a ‘healthy food’ Group. We have five excellent factories. We have a good product range that’s enlarging. We have some good developments coming up the line. We’ve got something that we can take

into Europe that I think can be taken worldwide. The more successful we are, the more competition there will be. “Many people have been involved in creating this group of companies. Peter Fitch is a good source of information because he really lives the Group every day of the week. His official title is Director General Manager. Peter reports to John, who is responsible for many other companies including British Arkady (in Manchester), the European Arkady companies, 3 feed mills and a trading company in Ireland, etc. John was the Group Managing Director of ADM International Holdings, which has been restructured and is now named ADM International Ltd.; under it are British Arkady Company UK, Haldane Granose Food Group UK, and Arkady Feeds Ireland. The five-person board of ADM International Ltd. consists Dwayne Andreas, James R. Randall, Michael D. “Mick” Andreas, G. Allen Andreas, Jr., and John (the only Englishman).

“The main thing to remember is that this is all part of ADM, it has all been approved by Dwayne Andreas and the ADM board, and its very much in line with ADM’s philosophy.” Dwayne believes that soy products will play a key role in feeding this world. “To Dwayne, that is a mission.” John hopes that the work of the many people in the Haldane Group may help Dwayne realize his dream. Address: The British Arkady Co. Ltd., Skerton Road, Old Trafford, Manchester M16 0NJ, England, UK. Phone: 061-872-7161. Fax: 61-873-8083.

1522. Dafarty, Rasik. 1994. Current prices of soy protein products (Interview). *SoyaScan Notes*. March 15. Conducted by Walter J. Wolf of NRRC, Peoria, Illinois.

• **Summary:** Soy flours 14-16 cents/lb. Soy protein concentrates, alcohol process 50-60 cents/lb. Soy protein concentrates, acid process 70-80 cents/lb. Soy protein isolates 130-160 cents/lb. Address: Archer Daniels Midland Co., Decatur, Illinois. Phone: (217) 424-5414.

1523. **Product Name:** WMR4 (lactose free, all vegetable, nutritional powder product) and NutriBev (Dry Soy-Based Milk Alternative).

**Manufacturer’s Name:** Archer Daniels Midland Co.

**Manufacturer’s Address:** 4666 Faries Parkway, Box 1470, Decatur, IL 62525. Phone: 800-637-5850.

**Date of Introduction:** 1994 March.

**Ingredients:** WMR4: Corn syrup solids, isolated soy protein, partially hydrogenated soybean oil, sugar, tricalcium phosphate, maltodextrin, sodium hexametaphosphate, salt, artificial flavors, mono and diglycerides, sodium stearoyl lactylate, magnesium sulfate, vitamin C (ascorbic acid), vitamin A (palmitate), iron (ferric orthophosphate), vitamin D, zinc oxide, calcium pantothenate, vitamin B-2 (riboflavin), niacinamide, vitamin B-6 (pyridoxine hydrochloride), vitamin B-12, vitamin B-1 (thiamine mononitrate), folic acid.

**Wt/Vol., Packaging, Price:** 25 kg or 144 gm.

**How Stored:** Shelf stable.

**New Product–Documentation:** Kahn, E.J., Jr. 1987.

“Profiles: The absolute beginning” [Dwayne Orville Andreas and ADM]. *New Yorker* 62:41-68. Feb. 16. See p. 41. A soy-based milk substitute called Nutri-Bev is a food supplement for Third World children. Nutri-Bev isn’t sold. It comes in six flavors and it’s given away. ADM has been doing research on it for 25 years, and now they are improving it even more with fructose, which is thought to improve its mouth feel. It costs only 1/10th as much as cow’s milk and it’s nutritionally better. After all, says Dwayne Andreas, “some millions of people can’t tolerate cows’ milk. We’ve been frustrated every time we’ve tried to push this product. Do you realize that for a mere twenty-five billion dollars you could give a quart of this drink every day of the year to five hundred million people, and—presto!—you’d have the end of hunger? And there are enough soybeans in United States government storage right now to do the job. This is the most exciting long-range product we have. It’s to milk what margarine turned out to be to butter. I draw some comfort from reminding myself that it took margarine twenty-five years to get off the ground.”

ADM annual report. 1994. p. 14. NutriBev is a new milk alternative made largely from soy protein isolates and concentrates; it has the same nutritional value as milk but can be produced free of lactose.

Talk with Phil Fass, product manager. 1994. Oct. 4 and 14. WMR4 was launched in March 1994; it is one and the same with NutriBev. WMR4 was not a stand-alone product before the NutriBev program was conceived. At present, there is no product on the market with a NutriBev label. Some people are looking at test marketing various products. WMR4 has been sold commercially to make a milklike product that has no name in Third World feeding programs. So NutriBev is still a concept that is waiting to happen. The registered trademark for NutriBev has no hyphen.

Brochure titled “Nutri-Bev & WMR4 as Presented by ADM,” sent by Phil Fass of ADM. 1994. Oct. 10. WMR4 [whole milk replacer] is a lactose free, all vegetable, nutritional powder product. It is a free-flowing white powder that has been specially processed to dissolve very quickly in water. Using water at 45°C (warm) will facilitate mixing. The resulting product has the appearance and mouthfeel of normal whole milk. WMR4 can generally be substituted on a one for one basis for whole milk liquid or powder. Mix 130 gm WMR4 powder with 900 gm water to make 1 liter of finished product. It contains protein, fat, carbohydrates, calories, minerals, and vitamins equal to whole milk. It contains no lactose or cholesterol, making it a healthy alternative beverage. WMR4 can be used to make milklike products, hot chocolate drink, frozen desserts, yogurt, soft cheese (Ricotta, Quark, Queso Fresco, Farmers Cheese, etc.)

The Nutri-Bev Program is an exciting marketing

program specifically developed for foreign countries interested in marketing a liquid, soy-based, flavored children’s drink. ADM will license the Nutri-Bev label for a nominal fee [or an organization can use its own brand name and label]. ADM supplies the base product, WMR4, in a powdered, stable form. The base will be used in conjunction with a sweetener, flavor, and stabilizer to make a finished liquid product. Technical assistance will be supplied by ADM as needed. WMR4 does not contain any dairy fat and therefore will not develop the rancid off-flavors which are commonly associated with products containing dairy fat (whole milk powder). It has much better flavor stability than whole milk powder; the latter declines very rapidly at 50°C.

Technical Data. 1994. Jan/Feb. Gives nutritional analyses of Nutri-Bev drink and Chocolate drink. Gives formulas for using WMR4 to make: Frozen dessert. Fudge chocolate pudding. Cooked custard. Cultured yogurt (Swiss-style with fruit on top, or fruit on bottom).

Spot in Soyafoods (ASA, Europe). 1995. Spring. p. 4. “ADM launches lactose free and low cholesterol whole milk replacer.” WMR4 is available in the UK from ADM Ingredients Ltd., Church Manorway, Erith [on the River Thames just east of London], Kent DA8 1DL, England. Phone: +44 1322 443000.

Dixie Diner’s Club Official Newsletter and Catalog. 1996. Jan. Vol. 2, issue 1, p. 3. “NutriBev Soy Beverage: Delicious and satisfying—a drink that is soy-based and offers all the goodness of a quart of *whole milk* without cholesterol and lactose... and 30% of your daily calcium in a prepared cup.” The 5 oz package (makes about 1 quart of liquid soy beverage) sells for \$1.98 plus at least \$4.99 postage. 12 packages are \$1.79 each. A color photo shows the package. The name of the manufacturer is not given.

1524. Hayhow, Sally; Messina, Mark. 1994. The soy solution: Might this humble bean have a critical role in preventing heart disease and cancer? *Vegetarian Times*. March. p. 77-78, 80, 82-84.

• **Summary:** A growing body of scientific evidence indicates that soyfoods can help in preventing heart disease and cancer. Soy protein has been shown to reduce the “bad” type of cholesterol, known as low-density lipoproteins (LDL). But the public is largely unaware that eating soyfoods may lower blood cholesterol markedly, thereby reducing heart disease risk. As a result of the lack of publicity given to these important scientific studies, a powerful, palatable form of preventive medicine is not being used.

One long section discusses isoflavones, which are plant estrogens that are only about 1/100,000th as potent as human estrogen. This weak estrogen activity may be responsible for their anticancer effects in hormone-related cancers such as breast cancer. Estrogen increases cancer risk by binding to receptors in breast cells. Isoflavones mimic estrogen, attaching to the receptors, and effectively blocking

human estrogen. The most widely used drug in breast cancer treatment, tamoxifen, works in a similar way. Soyfoods are one of the only plentiful food sources of isoflavones.

Six little “sidebar” illustrations explain: Add a quarter pound of cubed, firm tofu to your stir fry: 13 gm of soy protein + 40 mg isoflavones. Pour half a cup of soymilk on your morning cereal: 10 gm soy protein + 20 mg isoflavones. Replace ¼ of the wheat flour in your bread with soy flour: 3 gm soy protein + 5 mg isoflavones (assuming a 3-cup loaf cut into 16 slices). Snack on a quarter cup roasted soynuts instead of peanuts: 18 gm soy protein + 50 mg isoflavones. Add a quarter cup TVP per person to chili: 11 gm soy protein + 35 mg isoflavones. Mix a tablespoon of miso into a cup of water for a warming broth: 1 gm soy protein + 5 mg isoflavones.

1525. Kevin, Kitty. 1994. Analogs: Fabulous fakes. How five companies make the all-American burger meatless. *Food Processing (Chicago)* 55(4):39-40, 42, 44. April.

• **Summary:** This article leads off the “Foods of Tomorrow” section. “Meatless burgers are going mainstream—sort of.” The five companies are Worthington Foods (Worthington, Ohio—Grillers), Wholesome & Hearty Foods, Inc. (Portland, Oregon), Fantastic Foods, Inc. (Petaluma, California), Archer Daniels Midland/Pillsbury (Decatur, Illinois), Sharon’s Finest (Santa Rosa, California). Green Giant Harvest Burgers are made by ADM and distributed by Pillsbury. The basic ADM ingredient is texturized soy protein concentrate. A color photo shows four flavors of frozen Harvest Burgers.

Note: This is the earliest English-language document seen (Nov. 2015) that contains the term “texturized soy protein concentrate.” Address: Associate editor.

1526. National Corn Growers Association. 1994. The world of corn. St. Louis, Missouri. 40 p. 22 x 22 cm.

• **Summary:** A factbook about corn in the USA. Page 17 shows the value of major U.S. crops in 1993. Corn is worth \$16,597 million, soybeans \$11,735 million, hay \$10,909 million, wheat 7,713 million, cotton \$4,220 million, and tobacco 2,837 million. The two states with the biggest corn acreage are Iowa and Illinois (p. 19). The main products made from corn are starches, syrups, dextrose (incl. ethanol), solubles, gluten and hulls (incl. corn gluten feed, corn gluten meal, and corn germ meal), and germ (p. 20-22). The main food and industrial uses for corn in 1993 are fuel alcohol (426 million bushels), beverages (as HFCS; 346,000 bu), and industrial starch (178 million bu). Use of corn in fuel ethanol production has grown from 25 million bushels in 1975 (the first year recorded) to 460 million bu in 1993. Illinois and Iowa are by far the leading ethanol producing states. Use of corn in corn sweetener production has grown from 207 million bushels in 1975 (the first year recorded) to 640 million bu in 1993. More than 60% of all corn is used as livestock feed. “A bushel of corn fed to livestock

produces 5.6 pounds of retail beef, 13 pounds of retail pork, 19.6 pounds of chicken, and 28 pounds of catfish.” There is a corn checkoff program but the rates vary from state to state. Address: 1000 Executive Parkway #105, St. Louis, Missouri 63141. Phone: (314) 275-9915.

1527. *Soyfoods (ASA, Europe)*. 1994. News from ADM. 5(1):2. Spring.

• **Summary:** “Hidde van der Wal has been appointed Sales Director of ADM’s Protein Division. He is based at ADM Europoort and his responsibility is to promote ADM’S major brands of soya isolates, concentrates and textured vegetable proteins throughout Europe.

“ADM has recently won a \$100 million contract with a Ukraine company. ATON (a large private company) for the supply of food ingredients, including soya proteins, soya-based milk powders and 135 million servings of Harvest Burger—ADM’s proprietary vegetarian burger.”

1528. *Soyfoods (ASA, Europe)*. 1994. The Nutresco Foods story. 5(1):6-7. Spring.

• **Summary:** Nutresco Foods was founded in Harare, Southern Rhodesia (in today’s Zimbabwe) in 1962, as a result of work carried on by the United Nations (UN) in Guatemala. Many of the Indian tribes there used a root resembling the manioc or cassava as their staple food. Since this crop contained only 3% protein, many of the people suffered from severe protein shortages. The World Health Organization concluded that their diet needed to be enriched, and they selected soybeans to provide the enrichment. Then, with the help of the Food and Agricultural Organization (FAO), the local tribal leaders were persuaded to cooperate in growing soybeans. They were taught the agricultural techniques, and the processes for making soy flour—which was subsequently mixed with cassava meal. The health of the people improved dramatically.

The story of the experiment with soya in Guatemala was presented in a paper by Dr. Barry Lewis of the then University of Rhodesia. He became interested in the idea of enriching maize (corn) meal with soya flour. He managed to persuade two retired businessmen to set up a small factory [Nutresco] in Salisbury specifically to process soybeans and to mix the full-fat flour with maize. “Tests showed that the product was acceptable from a taste point of view but when it was distributed by the Ministry of Health, it was not well received because the people of the area were suspicious that the product had been ‘doctored’ because of the slight difference in color.

After Nutresco’s unsuccessful attempt to enrich “mealie meal,” the company turned its attention to a traditional local beverage known in Zimbabwe as Mahewu—based on fermented corn, millet, and sugar. By adding pre-cooked soybean meal to the corn flour (mealie meal), a highly nutritious beverage was produced. When used in a relief

feeding program in Zimbabwe, the effect on the people's health was dramatic. This success led to the development of a number of different types of soy-fortified mahewu.

"Other low-cost nutritious foodstuffs have been developed over the years, mainly geared towards the bulk food supplier, the needs of famine relief organisations, and selected supermarket and health food lines. Emphasis has been placed on utilising, as far as possible, locally produced or manufactured ingredients. Products include: Hypro-beans (pre-cooked soybeans), pre-cooked full-fat, low-fat and defatted soya meal/flour, pre-cooked maize meal, hi-protein biscuits, peanut butter/spread, powdered soups, fortified health and convalescent drinks, textured vegetable protein (TVP), relishes and instant dog meal. Nutresco's most recent product is a soya based 'bread improver' which has considerable potential in Zimbabwe and surrounding countries. Where necessary independent nutritional analysis has been carried out on Nutresco products and further details of all products are available on request.

"Currently Nutresco Foods 75 permanent employees (including five management and staff and four supervisors) and 33 contract workers on its 2700 square metre factory site. Its shareholders are the Commercial Oilseed Producers' Association of Zimbabwe and the Cerin Investment Company Ltd (a shareholding company of commercial cereal producers). Current growth is 20% and future policy is to diversify into bulk feeding mainly looking at the export market.

"Since 1990, Nutresco Foods has been a United Nations High Commission for Refugees 'Approved Supplier'.

"For further information contact The General Manager, Nutresco Foods P/L, P.O. Box St. 61, Southerton, Harare, Zimbabwe. Tel. +263(4)63697/8/9, 65915, 62644."

1529. Duggan, David. 1994. Problems with the Flier patent assigned to Ralston Purina (Interview). *SoyaScan Notes*. June 13. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** David is an anti-trust attorney, not a patent attorney. On 5 July 1990 the federal circuit court of appeals, which hears appeals concerning patent cases in the United States, ruled that Ralston Purina Company had procured the famous Flier patent (No. 3,940,495. Feb. 24, 1976. Application filed 17 Jan. 1973) by fraud on the patent office. The case is number 909 F.2D 1494 (Staley vs. Ralston Purina).

Price Heneveld (a law firm of patent lawyers in Grand Rapids, Michigan) apparently represented Ralston Purina on both the original application and in subsequent litigation.

There was apparently earlier litigation involving Far-Mar-Co, Staley, Cargill, etc. The first case was apparently Ralston Purina vs. Far-Mar-Co of Kansas. He believes that Ralston Purina filed the lawsuit in Oct. 1976. The judgment was in or about 1981—showing the slow pace of federal litigation. The case was tried in the 10th federal judicial

circuit (district of Kansas), which is statistically the worst, in the sense that more cases are later overturned from that circuit by the U.S. Supreme Court. He finds it interesting that Ralston chose to file its first case in that circuit. There is law to the effect that if you engage in fraud on the patent office and then use that fraud in an attempt to control or monopolize the relevant market, that is illegal, and may be the basis for a anti-trust lawsuit.

In 1976, after Ralston Purina won the case against Far-Mar-Co in Kansas, Ralston started sending demand letters to many other companies that were supposedly infringing this patent—including Staley, Cargill, Central Soya, Griffith Laboratories, Miles Laboratories, Nabisco, Anderson Clayton, General Mills, Nestle, Riceland Foods, Dawson Mills, General Foods, Grain Processing Corp., etc. Ralston was protecting its rights.

In 1985 the Far-Mar-Co case was upheld, saying that Ralston Purina indeed had the rights to the Flier patent (Case no. 772 F.2D 1570). However Far-Mar-Co did not raise the issue of fraud. So it took another 5 years for the court to reach that question—which it decided in 1990.

David's main questions are: (1) Is textured vegetable protein [actually textured soy flour] a distinct segment of some relevant market? (2) Did Ralston Purina try to exclude other competitors from that market. (3) Were there substitutes for the product on which Ralston Purina had a patent? David's firm is in the process of representing a former player in the industry, a major trading company; they may represent a consortium of companies that were effected by the Ralston Purina's "ill gotten gains."

Update: Talk with David Duggan. 1996. April 26. His firm was representing the Lauhoff Residuary Trust in a case against Ralston Purina Co. Lauhoff is a grain company in Danville, Illinois. They were sued by Ralston, which claimed that they had infringed the patent without paying royalties. Lauhoff initially disregard the demand letter threatening a suit. Then they sold the company, but did not properly disclose to the buyers that a lawsuit was pending or had been threatened. Lauhoff then lost the case against Ralston in about 1986 or 1987. So the new owners sued the formers owners for failure to disclose. David argued that the amount paid by Lauhoff to settle the lawsuit was fraudulently paid. The case, which was very complex and convoluted, was thrown out of court by the judge because the statute of limitations had expired—they brought the case too late. Moreover, the patent was nearing its expiration date, or had expired. David believes that there was some pretty serious frauds on the courts in litigation to enforce the patent. David tried to present a RICO (Racketeering Influenced and Corrupt Organizations) Act argument. It provides for triple damages. David tried to approach some of the smaller players like Far-Mar-Co but he did not approach ADM. The patent law was recently changed to 20 years from the point of application; formerly it was 17 years from the point of

grant. Address: 321 S. Plymouth Court, Suite 800, Chicago, Illinois 60604. Phone: 312-663-0670.

**1530. Product Name:** Beef(Not) (Textured Soy Flour).

**Manufacturer's Name:** Dixie USA, Inc. (Marketer-Distributor).

**Manufacturer's Address:** P.O. Box 55549, Houston, TX 77255. Phone: 1-800-347-3494.

**Date of Introduction:** 1994 June.

**Wt/Vol., Packaging, Price:** 8 oz package or 2 lb cannister.

**How Stored:** Shelf stable.

**New Product–Documentation:** Dixie Diner's Club Official Newsletter and Catalog. 1996. Jan. Vol. 2, issue 1.

Holly McCord. 1996. *Prevention* (Emmaus, Pennsylvania). Aug. p. 67. "Menopause naturally: Got hot flashes? get soy!" Beef(Not) textured soy protein granules contains 62 mg of isoflavones per ¼ cup dry.

Talk with then letter (fax) from Robert A. Beeley, chairman of Dixie USA Inc. 1996. July 31. Beef(Not) was introduced in June 1994. It is basically ADM TVP.

**1531. Product Name:** Realeat Fishless Fish Cakes.

**Manufacturer's Name:** Haldane Foods Group.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 908 211311.

**Date of Introduction:** 1994 July.

**Ingredients:** Soy protein.

**Wt/Vol., Packaging, Price:** 320 gm box of four. Retail for £1.19 (7/94, England).

**How Stored:** Frozen.

**New Product–Documentation:** Spot in Soyfoods (ASA, Europe). 1994. Summer. p. 5. "Haldane launches Fishless Fish Cakes." The product is made from a blend of vegetable proteins (including soya) and potato with a golden crumb coating. Free of all animal products and additives, they are suitable for vegetarians and vegans.

**1532. Product Name:** Realeat Vege Menu (Dry Mix).

**Manufacturer's Name:** Haldane Foods Group.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 908 211311.

**Date of Introduction:** 1994 July.

**Ingredients:** Soy protein.

**Wt/Vol., Packaging, Price:** 125 gm pillow pack. Retail for £0.79 (7/94, England).

**How Stored:** Frozen.

**New Product–Documentation:** Spot in Soyfoods (ASA, Europe). 1994. Summer. p. 5. "Haldane launches Fishless Fish Cakes." Haldane has also extended its line of dry products with this dry mix made from textured vegetable protein blended with herbs and spices. It has a 12 month shelf life.

1533. Kelley, Ann J. 1994. They're meatless wonders but Harvest Burgers reap praise from taste-testers. *Florida Times-Union (Jacksonville)*. Aug. 11.

• **Summary:** Members of this newspaper's consumer panel were asked this week to prepare some Green Giant all vegetable Harvest Burgers for their families. Most of the panelists rated the product's flavor as "good." Assorted favorable comments: "I thought they were great." "You couldn't tell it wasn't meat."

1534. Ono, Yumiko. 1994. Catering to part-time vegetarians' tastes. *Wall Street Journal*. Aug. 24. p. B1, col. 3; p. B2, col. 5.

• **Summary:** "There are only about 12 million self-professed vegetarians in America who shun all meat, but companies believe the vegetarian pitch appeals to any nutritious-conscious consumer..." More than 75% of Americans eat meatless meals twice a week, according to a survey by HealthFocus, Inc., a market research firm in Des Mines, Iowa. *Vegetarian Times*, a monthly magazine, says its circulation has doubled in two years to 340,000 in 1993, in part because part-time vegetarians started buying it. And 14 out of 67 varieties of Lean Cuisine dinners are now meatless. In April Linda McCartney, wife of rock star Paul McCartney, introduced to the USA a line of frozen dinners called Linda McCartney's Home Style Cooking Meatless Entrees. Fairmont Foods of Minnesota makes the products. Worthington Foods, of Worthington, Ohio, makes a wide variety of meatless products. And Pillsbury markets Green Giant Harvest Burgers, made by ADM. Address: Staff reporter.

1535. Organic Processing Corp. 1994. The organic industry's ingredient supplier (Ad). *Natural Foods Merchandiser*. Aug. p. 22.

• **Summary:** "Whole soybeans. Meal & flour. TVP & soy oil. Liquid soy extract. Protein concentrate. Whole wheat & unbleached flour. Degermed corn flour & grits. Corn malt syrup." Note: No address is given, but the company is located in Ohio.

1536. Wang, Huei-ju; Murphy, Patricia A. 1994. Isoflavone content in commercial soybean foods. *J. of Agricultural and Food Chemistry* 42(8):1666-73. Aug. [28 ref]

• **Summary:** Analysis of the isoflavone contents in commercial soybean foods revealed that non-fermented soybean foods had greater levels of glucosides, while fermented soybean foods had greater levels of aglycones.

Isoflavones are one class of phytochemicals and are found in soybeans in large amounts. Twelve isomers of isoflavones were quantified: three aglycons and nine glucosides. Soybeans contain two major isoflavone aglycons, genistein and daidzein, and a minor one, glycitein. In

the seed, the isoflavones are present primarily as Beta-glucosides. The nine glucosides are: daidzin, genistin, glycitin; 6"-O-acetyldaidzin, -genistin, or -glycitin; and 6"-O-malonyldaidzin, -genistin, or -glycitin.

This paper gives data on the concentration and distribution of isoflavones in 29 commercial soybean foods, grouped into three types: Soy ingredients, traditional East Asian soy foods, and second-generation soyfoods. Four values are given for each product in micrograms per gram, on an "as is" basis: daidzein, genistein, glycitein, and total isoflavones.

(1) Soy ingredients: Vinton 81 90: 600, 954, 82, 1636. Vinton 8191: 240, 648, 107, 995. Green vegetable soybeans: 546, 729, 79, 1354. Soy flour: 226, 810, 88, 1124. TVP #1: 473, 707, 202, 1382. TVP #1: 484, 702, 156, 1342. Soy isolate #1: 77, 273, 115, 466. Soy isolate #2: 115, 392, 102, 610. Soy isolate #3: 122, 393, 99, 615. Soy concentrate: trace, 13, 42, 56.

(2) Traditional soy foods: Roasted soybeans: 563, 869, 193, 1625. Instant soy beverage #1: 311, 617, 109, 1037. Instant soy beverage #4: 407, 665, 111, 1183. Tofu (73% moisture): 146, 162, 29, 337. Tempeh: 273, 320, 32, 625. Bean paste (ko chu jang in Korea): 272, 245, 77, 593. Fermented tofu: 143, 224, 23, 390. Honzukuri miso (rice and soybeans): 79, 177, 38, 294.

(3) Second generation soyfoods: Soy hot dog: 34, 82, 34, 150. Soy bacon: 28, 69, 24, 122. Tempeh burger: 64, 196, 30, 289. Tofu yogurt: 57, 94, 12, 164. Soy Parmesan: 15, 8, 41, 65. Soy Cheddar cheese #1: 2, 5, 27, 34. Soy Cheddar cheese #1: 34, 40, 35, 109. Soy mozzarella cheese: 11, 36, 30, 76. Flat soy noodle: 9, 37, 39, 85.

Some manufacturers use ethyl alcohol extraction to prepare soy protein concentrates; this process removes a substantial portion of the isoflavones. The products examined for this paper which had the lowest content of isoflavones (all less than 100 micrograms per gram) were: soy cheddar cheese A 34, soy protein concentrate 56, soy Parmesan 65, soy mozzarella cheese 76, flat noodle 85.

"Proposed anticarcinogenic doses of soybean isoflavones range from 1.5 to 2.0 mg per kg of body weight per day (Hendrick et al, 1994). There are a number of soy food choices that will fit this dose requirement without the need to consume unusual amounts of these soy foods."

Isoflavone standards and extraction of isoflavones: Authentic standards of daidzein and genistein were obtained from commercial sources (ICN Pharmaceuticals, Plainview, New York, and Calbiochem Corp., San Diego, California). Daidzein and genistein were from previous work in the laboratory (Murphy 1981). The starting material for extracting isoflavones was defatted soybean flour. It was, in turn, extracted with acetonitrile (ACN) and 0.1 N HCl [hydrochloric acid] (1:5:1 w/v/v) according to the procedure of Murphy 1981. Address: Food Science and Human Nutrition, 2312 Food Sciences Building, Iowa State Univ.,

Ames, Iowa 50011.

1537. Webber, John. 1994. Soybean gets new president: Larry Horn will move to Quincy from his job as a senior vice president of a Canadian company that processes oilseed. *Herald-Whig (Quincy, Illinois)*. Sept. 8. p. 1A.

• **Summary:** Larry Horn, a Mississippi native and graduate of Mississippi State University, has been "senior vice president of CanAmera Foods, which crushes soybeans and canola seed, and processes the oil and meal. The firm is a joint venture involving Central Soya, Saskatchewan Wheat Pool and Manitoba Pool Elevators." Horn helped organize the Ontario Oilseed Association, and is a former chairman of the Canadian Oilseed Processors Association. He is also a director of the U.S. Canola Association.

Horn will become president of Quincy Soybean on Oct. 1, succeeding Mike Foster, according to Thomas McKenna, president and CEO of Moorman Manufacturing Co. Foster was named president of Moorman's feed business on July 1.

"MoorMan's, Quincy Soybean, and Quincy Design and Manufacturing Inc. are the three core firms under the Moorman Manufacturing Co. corporate umbrella. The arrangement is the result of a corporate restructuring program that began several years ago.

"Quincy Soybean employs about 340 at its storage and crushing facility on Gardner Expressway."

Talk with Mike Foster, former president of Quincy Soybean Co. 2005. Sept. 17. Of the 3 divisions of Moorman Manufacturing Co. listed above, MoorMan's refers to a relatively new name for the feed company, and Quincy Design and Manufacturing Inc. refers to a sheet metal design and fabrication plant, which made equipment, especially feeders for livestock. It was a very small division; when Moorman's total sales were around \$1 billion, the sheet metal business was only \$5-10 million. At some time after 1994 Moorman sold that division. Moorman Manufacturing Co. had these 3 divisions before it purchased Quincy Agri Sales, which is now Seedwest, a division of ADM Edible Bean Specialties.

When Mike returned to Moorman Mfg. Co. from Quincy Soybean in 1994, the feed division and the holding company were one and the same. People often referred to both as "Moorman's" for short. Shortly after returning, Mike was involved in establishing the holding company, still named Moorman Manufacturing Co., and separating it from the feed division, which was named MoorMan's, Inc. Address: H-W staff writer.

1538. Sinclair, Jim. 1994. New developments at the National Soybean Research Laboratory (Interview). *SoyaScan Notes*. Sept. 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Jim's boss, Dr. Donald Holt, wants him to write a generic draft of a proposal to seek funding for the

database of the NSRL–VertSoy. It will be made up of a number of components—such as seeking funding for SIRIC (they will probably go to a different type of funding agency). They are also working on StratSoy, whose funding has already been guaranteed. The project is well on its way; they have been working on the proposal and they have a video to be shown to the United Soybean Board (USB) at their next meeting. StratSoy is an expert system-type program for assisting soybean checkoff boards in their decision-making process on how to award competitive grants so that their money is put to its best use.

Note: This is the earliest English-language document seen (March 2019) that mentions StratSoy.

Darin Duval is a bright, young, well-trained person in computers and databases. Barton Clark is in his 60s and he represents the library administration. He will be involved in planning the new ag library. Duval, Jim, and Paul Hickson will start preparing the generic proposal. Agricultural Library at U of I has an 800-square-foot room to house documents. The college of agriculture is going through a major reorganization. As soon as the approval for reorganization is given by the faculty senate, later this year, a master plan kicks in.

On Sept. 28, Martin L. Andreas, Senior Vice President at ADM and Dwayne Andreas' nephew, is coming to the University of Illinois to present the second annual George A. Fluegel memorial lecture, sponsored by NSRL and the University of Illinois College of Agriculture. His subject will be “‘New uses’ for soybeans and agriculture.” The Dean has told Jim that he can informally present to Martin the plans for the lab and its potential, but he cannot directly ask him for funding. Marty is in charge of new uses at ADM. Most of the ADM Foundation money goes to public activities, such as supporting PBS programs, local boy scouts, Millikin University in Decatur, etc.

Bill thinks: The key concept is a Soybean Information Center, consisting of the best databases on the subject, an extensive library of books and journal articles, and an archives. We want to establish an information center where any person who is looking for information on soybeans will find it all in one place.

Jim is interim director of NSRL for 3 years; his tenure ends in the fall of 1995. He will be age 67 this year. He works half time for NSRL and half time for the plant pathology department. NSRL's annual budget is \$50,000 not including his salary and that of his secretary. Address: Acting Director, National Soybean Research Lab. (NSRL), 170 NSRL, 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: 217-244-1706.

1539. Archer Daniels Midland Co. 1994. Annual report. P.O. Box 1470, Decatur, IL 62525. 42 p. Sept.

• **Summary:** Net sales and other operating income for 1994 (year ended June 30) were \$11,374 million, up 15.9%

from 1993. Net earnings for 1994 were \$484.1 million, down 14.8% from 1993. Shareholders' equity (net worth) is \$5,045 million, up 3.3% from 1993. Net earnings per common share: \$1.40, down 11.4% from 1993. Number of shareholders: 33,940.

ADM's decline in profits was due largely to the great Midwestern flood of 1993 and rise in corn costs. Today ADM has 165 operating plants, 300 grain elevators, 2,000 barges, and 10,000 railroad cars. On any given day, together with affiliates in Europe, the company has 100 cargo ships on the high seas.

ADM Began processing corn in 1971, with a single wet-milling plant that had an annual processing capacity of 104,000 tons. Today ADM has an annual wet and dry corn processing capacity of 14.2 million tons. Corn is the origin of ADM's river of dextrose, from which is made HFCS, sorbitol, cornstarch, and ethanol. It is fermented to yield lysine, threonine, lactic acid, citric acid, and MSG. New products from corn fermentation scheduled for production by ADM in late 1994 include xanthan gum (a high-performance stabilizer in syrups, salad dressings, etc.), tryptophan, and vitamin C.

In recent years the U.S. government “has been providing strong incentives for farmers to grow more corn and fewer soybeans, thus turning the oilseed growing business over to Canada, Brazil, Argentina, India and the European Union (EU)—all while U.S. acreage shrank by 10 million acres... Consumers all over the world got a major setback when trade negotiators in Paris sat around a shiny table quarreling over which one should take the biggest cut in the production of oilseeds. The result was that the United States gave up its policy of being competitive in world markets for vegetable oil and the EU agreed to drastically reduce oilseed production. French farmers, proud of their productivity, protested.” Many countries are in dire need of more cooking oil. “It was agreed that Europe would first idle several million acres and then be allowed to produce oilseeds on those acres for industrial purposes only. The result is obscene. The EU is requiring processors to take perfectly good cooking oil worth \$1.65 a gallon and turn it into diesel fuel worth perhaps 40 cents.

A sidebar on p. 13 gives ADM's views opposing the U.S. government's efforts to reduce the amount of cropland, mainly to reduce surpluses but also for soil conservation. A graph shows that world oilseed acreage has risen dramatically since 1967, while that in the USA rose slowly from 1967 to 1982, then fell thereafter.

NutriBev is a new milk alternative made largely from soy protein isolates and concentrates; it has the same nutritional value as milk but can be produced free of lactose. The Harvest Burger plant is being greatly expanded to meet the product's rapid growth in sales. “The USDA's new school lunch regulations will soon make it possible for school districts to be reimbursed for using 100% soy

products such as Harvest Burger. In addition, schools will be required to reduce average fat levels in meals. A number of fat-reduced products contain ADM soy isolates. ADM's soy products are thus well positioned as extenders or a stand-alone products. Before the new regulations were announced, ADM provided testimony on the benefits of soy protein at a number of USDA hearings. We have put increased emphasis on increased soy protein research. We are also isolating some of the components in soy that are said by many scientists to inhibit cancer and some types of diabetes." A half-page color photo shows the Green Giant Harvest Burger and its package. A new lecithin plant was fully integrated into the existing oil refinery at Europoort, Netherlands, increasing efficiency substantially.

Pages 16-18 discuss ADM's worldwide procurement network and its unique partnership with A.C. Topfer.

Page 41 shows the officers of ADM's subsidiaries and divisions: David H. Swanson is chairman of Premiere Agri-Technologies, Inc. Larry H. Cunningham is president of ADM Protein Specialties Division. John R. Mahlich is managing director of The British Arkady Co., Ltd.

Update: March 1995. The Republican congress is now downsizing the U.S. government and trying to balance the federal budget. Yet ADM is quite dependent on government subsidies, especially for their most profitable products such as ethanol and PL-480 food products. How vulnerable does this make ADM, which is the largest manufacturer of ethyl alcohol in the world? One cannot tell from reading ADM's annual report. Address: Decatur, Illinois.

1540. NSRL. 1994. The National Soybean Research Laboratory and the University of Illinois College of Agriculture present the second annual George A. Fluegel Memorial Lecture: 'New Uses' for Soybeans and Agriculture, by Martin L. Andreas of the Archer Daniels Midland Co. (Leaflet). Urbana, Illinois. 1 p. Single sided. 28 cm.

• **Summary:** The lecture will be held on 28 Sept. 1994, at 2:00 p.m. in the National Soybean Research Laboratory Auditorium, Room 149, Environmental and Agricultural Sciences Building, 1101 W. Peabody Drive, Urbana.

Mr. Martin L. Andreas serves as Senior Vice President and Executive Assistant to the Chief Executive of Archer Daniels Midland Company. He also holds active positions with the Corn Refiners Association, the Renewable Fuels Association, the American Sugar Alliance, the Alternative Agricultural Research and Commercialization Center, and the Illinois Agricultural Leadership Foundation. Address: Urbana, Illinois.

1541. AGP-Ag Processing Inc a cooperative. 1994. Annual report: Partners in food production. 12700 West Dodge Road, P.O. Box 2047, Omaha, Nebraska 68103-2047. 20 p. 28 cm.

• **Summary:** Net sales for 1994 (year ended Aug. 31) were

\$1,377.370 million, up 13.0% from \$1,218.614 million in 1993. Earnings before income taxes: \$42.727 million, down 4.4% from the \$44.659 million in 1993. On the inside front cover is a brief essay about the "150th anniversary of the Co-operative Movement 1844-1894." AGP is owned by 380,000 farmers and 351 local cooperatives. "Today 700 million people around the world share the cooperative form of business. In the U.S., 120 million people are members of over 47,000 cooperatives."

This year AGP's board of directors "declared a patronage payment of \$35,786,000. Additionally the board declared a revolvment of stockholders' equity of \$14,280,000, bringing AGP current into the 1989 equity balances."

"The combined capacity of our seven [soybean] processing plants ranks AGP fourth in the U.S. in terms of soybean processing capacity." The plants purchase the equivalent of 250,000 acres of soybeans each month for processing. Each day, AGP merchandisers sell 8,000 tons of soybean meal to cooperatives and other companies for the manufacture of feeds."

"In August 1994 AGP purchased all of Maple Leaf Foods Inc.'s Western Canadian deed plants" in Alberta, Canada.

In Nov. 1994, AGP and ADM formed a new company named Consolidated Nutrition, L.C., owned 50-50 by AGP and ADM. It consists of the combined assets of AGP, L.P. and Master Mix Feeds (which was founded in 1935 by Central Soya Inc.) "In July 1994, ADM purchased most of Central Soya's feed and nutrition operations, including Master Mix Feeds."

A color map (p. 18), with 9 symbols, shows all of AGP's business locations in the United States, Canada, and the Caribbean. Another color map (p. 20) show where all of AGP's shareholders are located. Color portrait photos show (1) Knobbe and Lindsay. (2) The towering desolventizer-toaster at the Mason City, Iowa, plant. (3) Aerial view of the St. Joseph, Missouri, plant. (4) The towering 1.7 million bushel capacity grain storage terminal at Lincoln, Nebraska, now leased by AGP. (5) A barge leaving AGP Grain's 4.2 million bushel grain terminal at Duluth, Minnesota. (6) A man holding a small pink pig. (7) The Farmers Cooperative Elevator Co. at Everly, Iowa. (8) Each of the nine members of the board of directors. Address: Omaha, Nebraska. Phone: (402) 496-7809.

1542. Joachim, David. 1994. The joy of soy: Welcome to the kitchen of Dorothy Bates—soyfoods pioneer. *Vegetarian Gourmet (Montrose, Pennsylvania)* No. 11. Autumn. p. 28-33.

• **Summary:** Dorothy, age 73, graduated from Iowa State University with a degree in food, nutrition, and journalism. Then she began her career as a home economist for Swift & Company, a Chicago-based food company. In 1945 she

married and moved to Hawaii, where her two children were born. In 1968 [actually about 1973 or 1974] her daughter-in-law Cynthia prepared a few simple dishes at Dorothy's home in Connecticut using tofu, tempeh, soy sauce, and textured vegetable protein. This had a profound effect on the direction of Dorothy's life. Sensing a story, Dorothy called the food editor from the local newspaper [Elizabeth Squires of the *Wilton Bulletin* in Wilton, Connecticut] to photograph the dishes and write about soy products. Now age 50, and a lover of the rich desserts of French cuisine, Dorothy had little idea that she would eventually be writing vegetarian cookbooks—such as *The Tempeh Cookbook*, and *The TVP Cookbook*.

Contains 9 soyfoods recipes, including: Super-easy chocolate mousse (with silken tofu), and Whipped topping (with firm tofu).

A sidebar (p. 31-32) discusses soybeans, diet, disease prevention, and genistein.

1543. *SoyaScan Notes*. 1994. What is the Dietary Supplements Health Education Act (DSHEA, also called the Hatch Act) (Overview). Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** DSHEA (pronounced du-SHAY) is the Dietary Supplements Health Education Act (also called the Hatch Act, after Senator Orrin Hatch, Republican of Utah). When it was passed on 15 Oct. 1994, the whole world of nutraceuticals was revolutionized, and the number of products has continued to increase dramatically. This Act made it much easier to sell dietary supplements without FDA approval. It essentially put the burden of proof on the FDA. The law allowed food and beverage manufacturers to add anything from creatine to chromium to their products as long as they don't claim to "diagnose, prevent, mitigate, treat, or cure a specific disease." Before Oct. 1994 the manufacturer of a supplement had to prove that it was safe. But after that date the FDA has to prove that it is harmful before they can require a company to withdraw or recall the product. The actual language of the Act makes "amazing reading. The Act is a watershed event for the health food industry in the USA—and particularly for the nutritional supplement industry. During the next few years it will lead to the introduction of many new soy products, most notably soy isoflavone pills—such as ADM's Novasoy, which was first sold commercially in Nov. 1997.

Update: By 1998 some people found it "totally unbelievable" that any company could market any supplement, herb, or herbal mixture (even if it was unsafe or in unsafe doses) without prior FDA approval. The FDA has only about three scientists working in the supplement field and there are some 50,000 supplements on the market. There is a long history of mutual antagonism and distrust between the supplement industry and the FDA (see *More Than One Slingshot: How the Health Food Industry Is Changing America*, by Frank Murray and Jon Tarr (1984)). The

supplement industry applied considerable political pressure to get the FDA out of the business of regulating supplements such as vitamins and minerals, most of which were perfectly safe. The FDA realized it did not have the resources to monitor and regulate this large and burgeoning industry, so they largely stopped all regulation. With supplements, the rule became "buyer beware." The problem has become much more complex and acute because of the advent of nutraceuticals, which blur the line between traditional drugs (medicines, which must be safe and effective) and traditional supplements (such as vitamins and minerals). By 1998 the pendulum had begun to swing the other way, and the supplement industry began to come under increasing criticism from health professionals. On 17 September 1998 the prestigious *New England Journal of Medicine* (NEJM) ran three articles and an editorial on this subject. The editorial said that it is time for scientists to stand up to the supplement industry. On Sept. 19 the *New York Times* wrote an editorial in response to the NEJM editorial titled "Unregulated dietary supplements" and Jane Brody wrote an article on the same subject.

Ipriflavone, which is regulated and sold as a drug in Asia and Europe, is now being sold in the USA as a supplement. A synthetic compound, it has been researched for 20 years, thousands of women have taken it, and it has many properties similar to isoflavones. The advocates of ipriflavone note that it is just like the natural compounds in soybeans, so it is safe. Likewise, the soy isoflavone advocates refer to the extensive research data on ipriflavone to argue that the soy isoflavones are both safe and effective.

1544. Archer Daniels Midland Co. 1994. First quarter report to shareholders, and a report on the 71st Annual Shareholders Meeting. Box 1470, Decatur, IL 62525. 16 p. 20 x 9 cm.

• **Summary:** Comments by president James R. Randall. ADM is a growth company that continues to grow in three basic ways. First, by continuing to expand the basic businesses: crushing, refining, milling, etc. Second, to grow vertically and upgrade basic products into higher margin items. Central Soya's feed division was purchased along with a worldwide network of premix plants to give ADM excellent distribution of its amino acids and vitamins for animal feeds. By the end of 1995, ADM will be producing all three of the vitamins known as antioxidants. "Our soy protein businesses also continue to grow. Our European concentrate plant is now at full capacity and is being expanded. Our U.S. isolate and concentrate business is well ahead of previous years." Pillsbury's sales of ADM's vegeburgers are "up nearly 900 percent over a year ago. Our third growth area is to grow internationally. There are 94 million new people added to the face of the globe annually and feeding people is our business." These people are being added in "Asia, Africa, Central and South America, places where we have little or no presence, and we need to be there.

In the past year we have formed partnerships and have plants in Turkey, Greece, Bulgaria, Hungary, and Czechoslovakia in Eastern Europe. ADM is forming new alliances in Asia.

Comments by Michael Andreas, vice chairman of the board and executive vice president. There is no free trade in today's world. "Twenty years ago soybean farmers in the U.S. couldn't agree on a program for soybeans because the cost to produce them varied so widely from north to south. So they opted for so-called free trade with a low loan rate as a safety net. It all sounded pretty good. Over the last 15 years, however, I observed the following. Ten million acres of soybeans disappeared from the U.S., while areas in Argentina and Brazil increased 14 million acres where land was cheaper and subsidized credits were available. An additional 18.7 million oilseed acres were planted in Canada and Europe, again with heavy subsidies. Twenty-two soybean factories [crushing plants] were closed in our country, while fifty sprung up in South America and Europe. Our share of the world market in soybean products was cut in half. In fact, over 20,000 soybean farmers left the business, and 50,000 jobs were lost at home. And you know we still have the same program today.

"Let's look at Japan. They are truly the masters of managed trade. After the war, Japan put an extremely high tariff on imported vegetable oil but none on raw materials like soybeans and canola, so they could create jobs at home. Factories sprung up in the '50s and '60s like wildfire when they set their systems in place. Canada responded by growing more and more oilseeds and subsidizing exports with cheap freight to the ports. Canada became a colony again. They got no factories, no jobs. Why not?"

"Japan had all the factories because they could pay a premium for raw materials (in this case subsidized raw materials), run their factories, and charge the consumers double the market for their products. Taxes on the profits were collected by the government and used to help subsidize automobile exports. Sound complicated? As I said, this was managed trade, and it worked like a charm.

"And don't think for a minute that China hasn't learned from these tricks of the trade. They're putting the same systems in place as fast as they can."

Comments by Dwayne O. Andreas, chairman of the board and chief executive. He discusses the many accomplishments of the Clinton administration, including opening up trade with China. "The second thing he did that is absolutely super for agriculture and ADM is that he got NAFTA through the Congress over the opposition of his labor constituency, one of the greatest achievements for trade of this century. Our exports to Mexico have tripled just since NAFTA, and they are going to triple again." Address: Decatur, Illinois.

1545. *Soyfoods (ASA, Europe)*. 1994. People on the move. 5(3):3. Autumn.

• **Summary:** Philip Gaffney has been appointed National Accounts Manager for Cauldron Foods in Bristol, UK. A member of the Hero Group, Cauldron is Britain's largest producer of tofu and a variety of chilled and frozen healthy meatless products.

John G. Reed, Jr., has been named ADM's Vice President and Chief Executive in Europe. In 1982 Reed joined ADM in the U.S. as Vice President. He will relocate at ADM's European Headquarters in Erith [on the River Thames just east of London], Kent, England.

1546. *Soyfoods (ASA, Europe)*. 1994. In depth: Food Ingredients Europe. 5(3):6-7. Autumn.

• **Summary:** Food Ingredients Europe, the international exhibition of food ingredients, was held this year on Oct. 4-6 in London, England, at Earl's Court. This was the biggest FIE in its 9-year history, with more than 500 exhibitors. The American Soybean Association (ASA) had a very successful booth at the U.S. Pavilion. One of the most interesting new products was Befine, from a company named VPS Europe. This unique, patented soya-based granule, sold fresh or frozen, mimics the texture of ground meat but it is not TVP or textured soy protein concentrate. Made from organic whole soybeans, it contains 18% protein. ADM Protein Specialties Division introduced their new WMR4, a dry soymilk based on soy protein isolate. Protein Technologies International exhibited Supro brand Isolated Soy Protein and Fibrin brand soy fiber. A line of texturized Danprotex (H-29, B-39, and F) and functional Danpro (DS) soy protein concentrates were launched by Central Soya Aarhus A/S, a member of the Eridania/Beghin-Say agro-industrial group. Kikkoman Trading Europe exhibited their naturally fermented soy sauces in liquid and dehydrated forms. Other soy sauce exhibitors included Henry Lamotte GmbH and Mandarin Soy Sauce Inc. Loders Croklaan exhibited a new soya concentrate line. Alsace-based Sojinal, which supplies soy products to the food industry, exhibited along with their new sister company, Sevenday. SFI Netherlands BV (SFI = Special Food Ingredients, formerly Solnuts Inc.) exhibited their line of dry roasted soynuts. Also present were Stern Lecithin and Soja GmbH & Co. KG, Sapa and Dafa Associès (makers of Dafasoy for the food, dietetic, and pharmaceutical industries), Soya Mainz & Co. KG and Solbar Hatzor (soy protein concentrates), Dalgety Food Ingredients International (with the former Spillers Premier Products), Lucas Meyer GmbH (with a phosphatidyl choline lecithin powder and a de-oiled lecithin for frozen doughs), Edelsoja GmbH, Celia SA, Freeze-Dry Foods GmbH, and GMB Proteins (a division of Bush Boake Allen Ltd.). The address and fax number of each company is given.

1547. Soyfoods Association of America. 1994. Get the soy edge (Ad). *Vegetarian Times*. Nov. p. 71-74.

• **Summary:** This 4-page advertorial, with 17 color photos, is

sponsored by the following organizations: ADM, DevanSoy Farms, Inc., Eden Foods, Inc., Lightlife Foods, Lumen Food Corp., Morinaga Nutritional Foods Inc., Soyfoods Association of America, Tofutti Brands Inc., Worthington Foods.

“Did you know you can fit soy into your diet without giving up your favorite foods? Try soy burgers, soy ice cream, soy yogurt, soy hot dogs, soy flour, soy cream cheese, soy sausage, soy chili, soy frozen juice bars, soy margarine, soy milk, soy tacos, soy sour cream, soy sloppy joes, soy ‘chicken’ patties...” Address: Palo Alto, California. Phone: 415-327-1444.

1548. Limpert, Bill. 1994. The Soy Protein Council and Cargill, Inc. (Interview). *SoyaScan Notes*. Dec. 29. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** For the last 8-10 years the Soy Protein Council (which was founded in 1971) has had only 3 full members: ADM, Cargill, and Central Soya. As the number of members has decreased, the dues that each member company pays has increased. Protein Technologies International does not belong and pays no dues. He does not know why PTI does not belong, yet they participate in some meetings when there is specific legislation that affects them, and they also participate in lobbying on behalf of soy proteins.

The only soy protein products that Cargill makes are defatted soy flour, textured soy flour, and flavored textured soy flour (as for Schilling or McCormack). These products, which are all produced at one plant in Cedar Rapids, Iowa, often end up as ingredients in consumer food products, but Cargill (like ADM) does not sell any consumer products. Very little Cargill products end up in pet foods any more.

A company that makes full-fat soy flour is HiPro Food Products, Inc., 775 Colorado Ave. South, Minneapolis, Minnesota 55416 (Phone: 612-545-0151; Bob Cross, president). They have a plant in New Germany, Minnesota.

Update: 1997 Oct. 16. The Soy Protein Council still only has the same three full members. PTI still has not joined. Address: Research Chemist, Technical Services Manager, Cargill, Inc., Research Dep., P.O. Box 5699, Minneapolis, Minnesota 55440.

1549. *Soybean Quarterly (Nebraska Soybean Board, Lincoln, Nebraska)*. 1994. Award winning conditioning program relies on soy power. 1(1):1, 4.

• **Summary:** “Athletes who dine at the University of Nebraska training table are getting some of their power and energy from soybeans. UNL (University of Nebraska at Lincoln) strength and conditioning coach Boyd Epley serves a powdered drink mix called Energy Balance to athletes who want to increase their energy, endurance and strength. The primary ingredient in the mix is isolated soybean protein.” Note: Energy Balance is made in Syracuse, Nebraska, by Pharma Chemie, run by Miak Pieloch. It contains soy protein

isolate purchased from ADM.

1550. **Product Name:** Supreme, Number 1, and Eezee.

**Manufacturer’s Name:** Sasko International.

**Manufacturer’s Address:** P.O. Box 4315, Luipardsvlei 1743, South Africa. Phone: +27 11762 5300 x-116.

**Date of Introduction:** 1994.

**New Product–Documentation:** Spot in Soyfoods (ASA, Europe). 1995. Spring. p. 4. “Sasko International at Sial ‘94.” Sasko makes and supplies foods, from consumer goods to nutritional assistance programs. “Under the brand names Supreme, Number 1, and Eezee they produce a range of soya products, such as flavoured, cubed TVP, flavoured minced TVP, soups and gravy powders. In addition they manufacture soya milk powder and other high protein drink powders. The TVP based products are available in a number of flavours including ‘monkey gland’! whilst a range of fruit flavors are used for the high protein drink powders. The company also produces cereal mixes and batter mixes using soya, and a protein, mineral and vitamin enriched drink also based on soya.”

1551. Egerstrom, Lee. 1994. Make no small plans: A cooperative revival for rural America. Rochester, Minnesota: Lone Oak Press, Ltd. 294 p. Illust. Index. 23 cm. [200\* + 242 footnotes]

• **Summary:** Journalist Egerstrom argues for a “new generation” of farmer-owned cooperatives based on value-added processing. A quotation on the back cover by reviewer Michael Boehlje of Purdue Univ. (Indiana) summarizes it well: “Agriculture is changing from a way of life to a business, and a business that manufactures food products rather than raises commodities. Egerstrom has documented this change... His fundamental theme, that farmers through collective activities and specifically through cooperatives can shape this transformation of the food system and rural communities is not only interesting and enjoyable reading, but should stimulate and challenge farm leaders to become more pro-active in guiding and directing the industrialization of agriculture.” An appendix (p. 245-48) lists 50 “New Generation” cooperatives.

Contents: Foreword, by Bob Bergland (U.S. Secretary of Agriculture, 1977-1981; Congressman from Minnesota 1971-1977). Preface. 1. Agrarian myths & the Northwest culture. 2. Reviving the “good old days” after everything’s changed. 3. Observing change. 4. The Netherlands experience. 5. American experience. 6. Technology & knowledge transfer. 7. The more things change. 8. The need for a new approach to development. 9. Cooperatives: The new wave movement for community development. Afterword, by C.T. (Terry) Frederickson. Acknowledgments.

At the end of many chapters are “Notes,” for example (p. 248-49) “The top ten basic questions you should ask before you [a local or state government] approve or are

involved in an economic development project.” A good project brings real, durable benefits to the community; it must offer more than the single goal of creating jobs.

The title of this book is based on “Howard Cowden’s business motto for building Farmland Industries [headquartered in Kansas City, Missouri] into a modern agribusiness and petroleum giant.” Engraved in the cooperative’s boardroom wall, it reads: “Make no little plans; they have not the power to stir men’s souls” (p. 10-11).

“Governments have lost both the legal authority to intervene in farm markets and arbitrarily raise farm incomes by raising prices, and the budgetary means to do so. International trade agreements [e.g., WTO, NAFTA] ban the former; political support and government budget priorities limit the latter.” In Feb. 1994 U.S. Secretary of Agriculture said: “I have seen the handwriting on the wall... U.S. budget support for agriculture will continue to decline” (p. 11-12). There is now bipartisan consensus on this key point.

The following (mostly soybean crushing cooperatives) are mentioned or discussed: AGRI Industries, Inc. (p. 237). Cenex (89-91, 128, 141-43, 138, 150, 173, 193, 219, 222, 234-36, 257). ConAgra Inc. (p. 129, 131, 133, 144). Dean Foods (p. 131). Farmers Union Grain Terminal Association (GTA) (p. 133, 170). Farmland Industries (13, 52, 115, 128-30, 134, 136, 173, 229, 235, 258). Far-Mar-Co (p. 130). Gold Kist, Inc. (p. 51, 134). Honeymead (p. 133-34). Land O’Lakes (p. 115, 128, 130, 134, 138-40, 150, 154, 165, 169, 190, 219, 222, 235). Monsanto (p. 165).

Note 2. The title of this book is taken from a quotation attributed to the great American city planner and architect Daniel Burnham (1846-1912), who is quoted as saying: “Make no little plans. They have no magic to stir men’s blood and probably will not themselves be realized” (Moore 1921).

Note 2. Farmland Industries was the largest agricultural cooperative in North America when it declared bankruptcy in 2002. Address: Maplewood, Minnesota.

1552. Kilburn, Roger. 1994. My favorite TVP recipes. Decatur, Illinois: Harvest Direct, Inc. vii + 56 p. No index. 25 cm.

• **Summary:** Contents: TVP (a registered trademark of the Archer Daniels Midland Co., Decatur, Illinois). Foreword. More about TVP. Main dishes. Soups and stews. Luncheon. Appetizers and side dishes. Snacks. A color photo on the cover shows Roger Kilburn (wearing glasses, short hair, and a short beard) by a table with his favorite TVP dishes. Address: President, Harvest Direct, P.O. Box 4514, Decatur, Illinois 62525. Phone: 1-800-835-2867.

1553. Leng, Vikki. 1994. Earthly delights: Everyday vegetarian cooking. Over 750 simple and delicious recipes for everyday meals and special occasions. Sydney, Australia: Thorsons. 352 p. Illust. (color). Index. 29 cm.

• **Summary:** This attractive cookbook, containing many large color photos printed on glossy paper, contains many recipes for and much information about soyfoods throughout the book. One chapter titled “Tofu and soy products” (p. 283-89) includes: Basic tofu (a recipe for making tofu at home). Quick tofu. Frozen tofu. Parboiled tofu. Textured vegetable protein (TVP, made from frozen tofu). Spicy textured vegetable protein (TVP, made from frozen tofu). Mediterranean style TVP (made from frozen tofu). Marinated tofu. Tofu paprika. Spicy grilled tofu. Tiny tofu parcels. Spicy tofu. Tofu foccacia bake. Tofu and sesame balls. Roasted okara. Curry flavoured okara. Soy and ginger balls (with 2 cups cooked soy beans {p. 124}, ground to a pulp or 3 cups okara). Okara felafels.

The glossary (p. 341-46) includes: Miso, nigari, nori, okara, sesame seeds, soy flour, soy milk, soy sauce, tahini, tempeh, textured vegetable protein (TVP), and tofu.

See also: Miso (p. 28), okara (p. 124, 265), soy beans, cooked (p. 124), soy bean sprouts (p. 257).

Part III of this book is titled “The vegetarian diet” (p. 334-40). On the inside rear dust jacket is portrait photo of Vikki Leng and a brief biography. She first came to public attention over ten years ago as “Vikki the Vego,” the “amusing and well-informed advocate for eating for health and pleasure with a special love for vegetarian cuisine.” Address: Melbourne, Australia.

1554. Much, Marilyn. 1995. Seeds bear fruit at Archer Daniels Midland: Profits surge at huge grain processor thanks to growing sales of higher margin additives. *Investor’s Business Daily*. Jan. 5.

• **Summary:** A photo shows ADM Chairman and CEO Dwayne Andreas who said that his company’s business has doubled every six years for the past 20 years. In 1994 ADM had bad luck because of the great Midwest floods; earnings dropped 11% even as revenues rose 16% to \$11.4 billion. ADM’s strategy is to nurture core businesses, like milling of corn, wheat, and soybeans, while expanding and upgrading products into higher margin items.

Over the past few years ADM has used new technologies to extract amino acids from corn. Today ADM is a leader in the production of amino acids like lysine and threonine, which are used as livestock feed supplements. It will soon start making tryptophan for use in livestock feeding. Andreas estimates that consumption of such value-added products is growing anywhere from 6% to 25% a year. That explains why he has invested several hundred million dollars in making these items. “This investment includes the January acquisition of Central Soya Co., one of the largest global distributors of multivitamin products.” [Note: In Jan. 1994 (not 1995) a subsidiary of ADM acquired Central Soya’s feed division—but not the entire Central Soya company].

Analyst David Nelson of NatWest Securities predicts that ADM’s earnings overall will grow at a compound annual

rate of 9% to 12% over the next 5 years as the firm reaps the benefits of its wise investments, and as agricultural trade becomes more liberalized. That's up from only 3% from 1990-1994. For example, the market for ADM fructose has exploded. ADM plans to diversify into new bioproduct categories. Long-term, Andreas plans to produce all six antioxidant vitamins from natural sources—and penicillin.

ADM's soy protein business is growing rapidly. Six years ago the company invented a new way to isolate [concentrate?] soy protein and make a product similar in taste and texture to meat. This is used as an ingredient in the Harvest Burger patties marketed at retail by Pillsbury's Green Giant.

Andreas has found that liberalization of agricultural trade through NAFTA and GATT has been of tremendous benefit to ADM and similar companies. ADM is now shipping to China vastly increased amounts of vegetable oil. "The company has shipped \$26 million of a total \$100 million order from Ukraine for soy protein to be used in milk. And the former Soviet Union has asked ADM if it can supply it with 3 million tons of milk from soy protein in the future, says Andreas." Address: Staff reporter.

**1555. Product Name:** Green Giant Breakfast Patties [Sausage Style].

**Manufacturer's Name:** Green Giant Div., The Pillsbury Company (Marketer-Distributor). Made in Decatur, Illinois, by ADM.

**Manufacturer's Address:** Pillsbury: 2866 Pillsbury Center, Minneapolis, MN 55402-1464. Phone: 1-800-998-9996.

**Date of Introduction:** 1995 January.

**How Stored:** Frozen.

**New Product–Documentation:** Ad with coupon (1/3 page,

color) in Vegetarian Times. 1995. March. p. 22. A photo shows the front of each package/label. The patties contain "81% less fat" than comparable meat patties. They are "All vegetable. Cholesterol free."

Talk with Doug Schmalz of ADM. 1995. July 19. This product is now on the market.

Talk with Green Giant consumer information person. 1995. July 31. The Green Giant Breakfast Patties were launched on 1 Jan. 1995.

**1556. Product Name:** Green Giant Breakfast Links [Sausage Style].

**Manufacturer's Name:** Green Giant Div., The Pillsbury Company (Marketer-Distributor). Made in Decatur, Illinois, by ADM.

**Manufacturer's Address:** Pillsbury: 2866 Pillsbury Center, Minneapolis, MN 55402-1464. Phone: 1-800-998-9996.

**Date of Introduction:** 1995 January.

**Ingredients:** Water, soy protein concentrate, corn oil, isolated soy protein, methylcellulose, hydrolyzed protein (made from soy protein, wheat gluten, corn gluten), natural flavor, spice, salt, malt extract, autolyzed yeast extract, maltodextrin, beet powder, zinc oxide, niacinamide, ferrous sulfate, copper gluconate, vitamin A palmitate, calcium pantothenate, thiamine mononitrate, vitamin B-6 hydrochloride, riboflavin, vitamin B-12.

**Wt/Vol., Packaging, Price:** 8 oz paperboard box. Retail for \$2.19 (8/95, California).

**How Stored:** Frozen.

**Nutrition:** Per 3 links (85 gm): Calories 110, calories from fat 45, total fat 5 gm (8% daily value; saturated fat 0.5 gm), cholesterol 0 mg, sodium 340 mg (14%), total carbohydrate 5 gm (dietary fiber 4 gm, sugars <1 gm), protein 12 gm.



Vitamin A 0%, niacin 15%, vitamin B-12 15%, zinc 30%, copper 10%, calcium 6%, vitamin C 0%, iron 10%, riboflavin 6%, Percent daily values are based on a 2,000 calorie diet.

**New Product–Documentation:** See previous page. Ad with coupon (1/3 page, color) in *Vegetarian Times*. 1995. March. p. 22. A photo shows the front of each package/label. The links contain “81% less fat” than comparable meat sausages. They are “All vegetable. Cholesterol free.”

Talk with Green Giant consumer information person. 1995. July 31. The Green Giant Breakfast Links were launched on 1 Jan. 1995.

Product with Label purchased at Safeway supermarket in Lafayette, California. 1995. Aug. 1. 8½ by 4¼ by 1 inch paperboard box. Green, dark green, white, and purple. Color photo of 3 links next to pancakes and 3 raspberries on a plate. Green Giant logo. On front panel: “81% less fat than pork sausage. All-vegetable. Zero cholesterol. 10 links.” Back panel: Have a hearty breakfast that’s good for you! Questions or comments? 1-800-998-9996. A table compares the nutritional composition of 68 gm uncooked Green Giant Links and pork sausage: Fat: 5 gm vs. 27 gm. Saturated fat: 0.5 gm vs. 10 gm. Cholesterol: 0 mg vs. 45 mg. Calories: 119 vs. 280.

1557. Pillsbury Company. 1995. Like any guy, he occasionally craves a burger (Ad). *Vegetarian Times*. Jan. p. 25.

• **Summary:** The top half of this full-page color ad contains an illustration of the jolly Green Giant. The bottom half tells about Green Giant Harvest Burgers, with a photo of the package and of a burger between buns with all the trimmings. Green Giant is a registered trademark of The Pillsbury Company. Harvest Burgers is a registered trademark of ADM.

1558. Soglowek, Eli. 1995. Soglowek–Israel’s biggest meat processor has been making meatlike products for 8 years (Interview). *SoyaScan Notes*. Feb. 14. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Eli is the son of one of the owners of this family-owned business, which started processing meat in Israel 55 years ago (i.e. in 1940) and is today the country’s largest meat processor, making sausages, pizza, dough, pasta, etc. The family came to Israel from Germany. Soglowek (also spelled Zoglabeck or Zoglovek or Zoglowek) is located at 8 Ha Gatton Blvd., P.O. Box 70, Naharya, Israel–10 minute’s drive from Tivall. Soglowek started making meat alternatives after Tivall and today they are Tivall’s main competitor in Israel. The CEO of Tivall today is Gazi Kaplen, and the man who developed Tivall’s products is Michael Shemer, who studied in the USA, wrote his PhD thesis in 1973 on soy protein at the University of Illinois, learned about meatlike products there, then later worked for

General Mills.

Tivall started making meatlike products in 1985 and Soglowek started 1-2 years later, making their products under the brand Zoglo’s mainly from textured soy protein concentrates and wheat gluten. Their main products are Veggie Burgers and Veggie Cutlets (a kind of schnitzel). They buy their textured concentrates from both ADM and Central Soya, and their wheat gluten probably in Israel. Soglowek sells some of its meatlike products in Israel, but also exports large quantities to Europe and the United States. Address: 300 East 90th St., Apt. 4B, New York, NY 10128.

1559. Arnold, Kathryn. 1995. The joy of soy. *Delicious! (Boulder, Colorado)*. Feb. p. 34-36. [3 ref]

• **Summary:** The soybean “has long been revered by vegetarians as a nutritional powerhouse. However, the real secret is that soyfoods may help prevent disease.” They are cancer fighters and good for the heart. A table (p. 36) lists 12 different types of soyfoods and their uses: Tofu, tempeh, okara, miso, natto, TVP, soymilk, soy grits, soy flour, soy cheese, soy sauce, soy yogurt.

Note: This periodical, which began publication in about 1983, is published for natural products consumers by New Hope Communications in Boulder, Colorado. As of March 1998 some 425,000 copies of *Delicious!* are distributed each month to over 900 health food retail stores throughout the United States.

1560. Messina, Mark; Messina, Virginia. 1995. Soybeans linked to health benefits. *Vegetarian Voice (Dolgeville, New York)* 20(4):10-11. Winter.

• **Summary:** Contents: Introduction. Soy and heart disease. Soy and cancer. Other roles for soy. What if you can’t tolerate soy. The whole diet approach.

A table shows the isoflavone content of selected foods: Soymilk (1 cup) 40 mg. Tofu (½ cup) 40 mg. Tempeh (½ cup) 40 mg. Miso (½ cup) 40 mg. TVP, cooked (½ cup) 35 mg. Soy flour (½ cup) 50 mg. Soybeans, cooked (½ cup) 35 mg. Soy nuts (1 ounce) 40 mg. Isoflavones (unlike vitamins) are not destroyed in conventional cooking methods.

1561. Gruenwald, R. Jay. 1995. Update on The Simple Soyman, The Bountiful Bean, Long Life Foods in Minnesota, and Kyoto Food Corp. (Terre Haute, Indiana) (Interview). *SoyaScan Notes*. March 13. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Jay has been with The Simple Soyman for 12 years. On 23 Sept. 1994 The Simple Soyman bought The Bountiful Bean, moved it from Ridgeway to Milwaukee, and merged it into The Simple Soyman. In Dec. 1994 he moved the new larger company to a new address: 3901 North 35th St. (P.O. Box 16677), Milwaukee, Wisconsin 53216. Phone: 414-444-TOFU. Simple Soyman still produces Hummus and Taboolie [both contain tofu], tempeh, and tofu under the

Bountiful Bean brand. The Simple Soyman will continue to make its Deepockets (Calzone-style [Italian] and Empanada-style [Mexican]; both contain frozen tofu), dips, spreads, etc. Most are made with soy. The company does a lot with frozen tofu, using it in place of TVP, which causes intestinal gas. The business is still struggling, “but hopefully with the addition of The Bountiful Bean business and distribution in Madison, we’ll get going. Being in this for 12 years now, we’ve got to start making a living at it pretty soon. Basic tofu is still not very profitable. We started working out of the Magic Bean’s kitchen with one product. When they went bankrupt we basically bought their equipment and moved to 4877 N. Green Bay Ave., Milwaukee, Wisconsin. The building we are in now is 4,500 square feet. The factory is nicely laid out.”

R. Jay has heard from a packaging company that a new tofu company named Long Life Foods is scheduled to start in Perham, Minnesota. They are said to be using a special type of package (not water pack) which gives the tofu a very long shelf life.

Kyoto Food Corp. (KFC) in Terre Haute, Indiana, declared bankruptcy in about May or June 1994. He heard that KFC had a verbal agreement from a big chain like Kroger to carry their tofu, then Azumaya, which was the brand Kroger was carrying, lowered their price. So Kroger stayed with Azumaya and that dealt the death blow to KFC [not true; see March 1995 interview with William Roach]. They were trying to sell their building and plant (which they owned and designed to make tofu) for about \$1.3 million. He thinks that the company was run by a couple, an American man and a Japanese woman [William and Toni Roach]. Bruce Rose is thinking of buying the company. Address: Owner, The Simple Soyman, 3901 North 35th St. (P.O. Box 16677), Milwaukee, Wisconsin 53216. Phone: 414-444-8638.

1562. *Wall Street Journal*. 1995. Cargill Inc. names Ernest Micek to post of chief executive. March 29.

• **Summary:** Ernest S. Micek, age 59, was named chief executive officer of Cargill Inc. effective Aug. 8 [1994], and will succeed Whitney MacMillan, age 65, who is retiring from management but will continue as chairman. Mr. MacMillan has been Cargill’s chief executive for almost 18 years. The great-grandson of the founder, W.W. MacMillan, his retirement will end that family’s direct management of the company.

The largest closely held firm, Cargill had sales / revenues of \$47.1 billion during the fiscal year ended 31 May 1994.

Micek, already a director, was elevated last year to the president’s office from his position as the executive vice president of Cargill’s vast food sector. Since Mr. Micek has a degree in chemical engineering, the move is widely seen as a sign that Cargill might increasingly emphasize refining new

products and “so-called biochemicals from grain: a booming business that arch-rival Archer-Daniels-Midland largely pioneered.” Mr. Micek has directed Cargill’s moves into refining sweetener (high fructose corn syrup) from corn, and (more recently) ethanol fuel and plastics from corn. Address: Staff Reporter, *Wall Street Journal*.

1563. Anderson, Robert L.; Wolf, Walter J. 1995.

Compositional changes in trypsin inhibitors, phytic acid, saponins and isoflavones related to soybean processing. *J. of Nutrition* 125(3S):581S-588S. March. Supplement. First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease. [57 ref]

• **Summary:** Contents: Introduction. Proteins. Trypsin inhibitors. Phytic acid. Saponins. Isoflavones. Conclusions.

“This review discusses the changes in content of trypsin inhibitors, phytic acid, saponins and isoflavones as soybeans are processed into the conventional protein ingredients, flours, concentrates and isolates, as well as some of the traditional Oriental soybean foods.”

The latter include soy sauce, miso, tofu, soymilk, okara (residue from soymilk), tempeh, fermented bean curd [sufu]. Also discussed are soy infant formula, dehydrated soymilk, wheat-soy pancake mix, raw soy flour, full-fat soy flour, texturized / textured soy flour, TVP, texturized soy protein concentrates, soybeans, soybean hulls (seed coat), soybean hypocotyl (radicle), spun soy protein isolate fiber, defatted soy flour, soy hot dog, soy bacon (tempeh bacon), tempeh burger, tofu yogurt, soy Parmesan. Address: Bipolymer Research, NCAUR, ARS/USDA, Peoria, Illinois 61604.

1564. Hendrich, S.; Xu, X.; Wang, H.-J.; Murphy, P.A. 1995. Neither diet selection or type of soy food significantly affect bioavailability of isoflavones fed in a single meal to young adult females (Abstract). *J. of Nutrition* 125(3S):805S-806S. March. Supplement. First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease.

• **Summary:** “To characterize soybean isoflavone bioavailability, 10 adult females, ages 19-33 y, were fed 0.9 mg/kg body weight in soymilk at breakfast in time-controlled basic foods, time-controlled self-selected, or ad libitum diets. In a second study, isoflavone doses of 0.8-1.2 mg/kg were given at breakfast as tofu, tempeh, soybeans and TVP.” The various foods and diets were fed to all subjects in random order.

“Urinary recovery of daidzein was significantly greater than that of genistein, and the recovery did not vary with soyfood or diet.” Address: Food Science Dep. and Human Nutrition, Iowa State Univ., Ames, IA 50011.

1565. Smith, Michelle. 1995. Minutes of Soyfoods Association of America general meeting. Held March 11 at the Anaheim Convention Center. San Francisco, California. 3 p. Unpublished typescript.

• **Summary:** The general meeting, which lasted from 8:30 to 10:00 a.m., was followed by a board of directors meeting (10:00 to 11:30). Mark Messina reports that the United Soybean Board (USB) is sponsoring dietitian seminars in 26 cities across the USA. The budget for each seminar is \$8,000. Manufacturers can exhibit products at seminars for a fee of \$75 per table. The 2nd Annual Soyfoods Symposium will be held in Brussels in 1996. The \$200,000 needed to fund the project will hopefully be raised mostly through the private sector.

Tim Redmond notes that SAA has budgeted \$16,000 to conduct a nationwide consumer survey on soyfoods. The first portion of the survey was sent to 20,000 consumers. Of the 15,000 that responded, 2,000 people (13.3%) said they eat soyfoods at least once a week. The second portion of the survey, consisting of a 4-page legal-size questionnaire, will be sent out by mid-March to 1,000 of the 2,000 regular soyfood consumers. Responses should be back in 4 weeks, and will be tabulated. The report will be written by Starr Track [Sarah & Peter Starr]. The survey committee will review and finalize the report which will then be available to the public.

New people and companies present at the meeting were Myron Cooper of Westbrae, Allan Routh and Raquel Supallo of SunRich, Gil Garcia of Tofu Shop, Ed Pedrick and Elmer Schettler of Devansoy, Richard Eluk of Clofine, Jack Painter of ADM, Yvonne Lo and Jan Remak of Vitasoy, Sarah and Peter Starr of Starr Track, and Suzanne Shelton Foley of the Shelton Foley Group. Address: Executive Director, Soyfoods Assoc. of America, One Sutter St. #300, San Francisco, California 94104. Phone: 415-393-9697.

1566. Wittenburg, Bonnie. 1995. Archer Daniels Midland Company: NYSE-ADM. Minneapolis, Minnesota: Dain Bosworth. 38 p. 28 cm.

• **Summary:** This is an updated and expanded edition of the excellent original report published in Dec. 1993. Concerning ADM management and board of directors: Chairman Dwayne Andreas is now age 77 and president James Randall is 70. It is uncertain when either will retire. Michael (Mick) Andreas, age 45, vice chairman of the board and executive vice president, is Dwayne Andreas' son and heir apparent. All operating divisions of ADM have reported to Mick Andreas for the past 3 years, and he apparently has major input on expansion plans and capital investment. A workaholic, he "joined ADM in 1971 after receiving a bachelor's degree in business from Northwestern University. At ADM he has worked as a commodity merchandiser in the United States and in Brussels, Belgium. He is said to love trading and he continues to keep a desk on the trading floor at ADM; it is not unusual to spot him there. Mick Andreas is past president of ADM's soybean processing division and has generally supervised ADM's commodity trading and marketing worldwide since 1980."

The market value of his ADM stock is approximately \$10.1 billion, compared with \$408 million for Dwayne Andreas' stock and \$102 million for Lowell Andreas'. Address: 60 South Sixth St., Minneapolis, Minnesota 55402-4422. Phone: (612) 371-2728.

1567. Allen, Andrea Horwich. 1995. Can isoflavones give soy mainstream acceptance? *Food Product Design*. May. p. 20-21.

• **Summary:** Researchers now believe that a family of phytochemicals present in soy, called isoflavones, may actually reduce the risk of atherosclerosis by preventing the formation of plaque on artery walls. One isoflavone, genistein, which is present only in soy, also fights cancer by inhibiting the growth of cancer cells. Genistein appears to mimic the effects of estrogen so that the body produces less of that hormone, thus reducing the risk of estrogen-dependent cancers, especially breast cancer. One study of Japanese men suggests that those who eat a diet high in soy protein have a lower incidence of prostate cancer.

Representatives from Morinaga Nutritional Foods, Westbrae, and Pillsbury Green Giant are trying to take advantage of the new discoveries by educating their customers. The FDA seems unlikely to be ready to approve a soy-related health claim such as "Includes your daily intake of soy." ADM, who makes the Green Giant frozen burgers, is said to retain Mark Messina, PhD, as a consultant. A large photo shows a carton of WestSoy Low Fat Soy Drink (Vanilla). Address: Assoc. Editor.

1568. Archer Daniels Midland Co. 1995. Third quarter report to shareholders. Decatur, Illinois: ADM. 4 p.

• **Summary:** Enclosed with this quarterly report is a research report on ADM written by Bonnie Wittenburg of the Dain Bosworth investment firm. "We do feel that Ms. Wittenburg has done a thorough job of describing our business and the markets in which we operate. We also thought the abundance of information herein would be of interest to you." Signed, Dwayne O. Andreas, Chairman.

ADM's net sales were up 9% for the quarter, and net earnings were up 50.2%. ADM earned \$0.38 a share. "This is ADM's 274th cash dividend and 254th consecutive quarterly payment, a record of 63 years of uninterrupted dividends. There are 516,072,234 shares of ADM stock outstanding." Address: Decatur, Illinois.

1569. *Bluebook Update (Bar Harbor, Maine)*. 1995. UK Soya Milk Alliance petitions EU. 2(2):3. April/June.

• **Summary:** Three leading soymilk manufacturers in the UK (Vandemoortele (UK) Ltd., Haldane Foods Group, and Plamil Foods Ltd.), have formed the Soya Milk Alliance in order to petition the European Union (EU) to accept the term "soya milk." This decision followed a ruling on 16 June 1994 by the EU Milk Management Committee that the term

“soya milk” could not be used on soymilk packages in the UK or Europe. The basis of the Committee’s decision is EC Regulation 1898/87 of July 2, 1987, which states that the term “milk” is prohibited from use when the food does not contain any dairy ingredient. However the UK government has repeatedly drawn the Commission’s attention to clause 3.1 which grants exemptions for foods “the exact nature of which is clear from traditional usage.”

The campaign to save the term “soya milk” has gained considerable momentum as 23 ministers have already signed a petition addressed to the Commission. According to the Alliance, many more ministers have agreed to sign the petition.

1570. Packaged Facts. 1995. The meat and dairy alternatives market. New York, NY: Packaged Facts. xii+ 162 + 42 + 6 p. May. 28 cm.

• **Summary:** In 1994 retail sales of these products reached an all-time high of \$286 million, and these sales are projected to top \$660 million in 1999. This very interesting report can be ordered from Packaged Facts, 625 Avenue of the Americas, New York, NY 10011. Phone: 212-627-3228. Price: \$2,150. The authors were Sarah and Peter Starr, though their names do not appear in the report. The product director was David Lumis.

Contents: Part I: The products. Scope of the report (Vegetarian products sold as meat or dairy alternatives, products not covered), history of the industry (an emerging market, part of the vegetarian movement, soybeans—an ancient food of Asia, soybeans arrive in the new world in the 18th century, Kellogg family starts health foods industry, makes first meat analogs, Seventh-day Adventists and others produce tofu and meat alternatives in the 1920s, Henry Ford early proponent of soybeans, meat analogs commercially developed in the United States in the 1940s, non-dairy beverages, growth of “Americanized” meat and dairy analogs booming), product definition (foods used to replace meat or dairy products, description of ingredients—tofu, tempeh, soymilk, okara, soy protein concentrates and isolates, textured vegetable protein, wheat gluten and seitan), product categories (three main categories of meat and dairy alternative products, meat alternatives, dairy alternatives, prepared meals), government regulations (the FDA and FTC, NLEA labeling considerations {went into effect in May 1994, making the USA the world’s first country to have mandatory nutrition labeling}, soy protein allowed in meat products without special labeling, bovine growth hormone), industry associations (the Soyfoods Association of America, the American Soybean Association, the Vegetarian Awareness Network).

Part II: The Market. Introduction (Retail sales of meat and dairy alternative products by category—1989-94—graph, retail sales of dairy alternatives products by segment—1989-94—graph), market size and growth (market

is difficult to monitor, 1994 retail sales estimated at \$286 million, dairy alternatives surpass \$142 million, meat alternatives soar to \$132 million, prepared meals grow steadily to over \$12 million, estimated retail sales of meat and dairy alternative products by category—1989-1994—table, growth in milk substitutes segment leveling off but still in double digits, cheese alternatives segment also experiences slight slow-down in 1994, non-dairy desserts—a slow-growth segment, estimated retail sales of dairy alternative products by segment—1989-1994—table), factors in market growth—overall market (maturing population and interest in nutrition, new dietary guidelines, medical community accepts plant-based diet, studies show vegetarian diet equals a healthier—longer life, soy might help to prevent heart disease and cancer, consumers now approve of vegetarian diets, increased demand for vegetarian foods, youth adopts meatless meals, exposure through foodservice, mass market begins to support meat and dairy alternatives, products in wider distribution, innovative new products, improved technology equals better taste, increased funding for soyfoods through foreign capital, pricing continues to limit market, image—taste and texture still a problem), factors in market growth—meat alternatives (concern about health hazards of meat, fat calories targeted by labeling law, an alternative to chicken and fish, ecological and social considerations will propel meatless meals, meatless meals difficult to handle by foodservice), factors in market growth—dairy alternatives (milk substitutes enter dairy case, awareness of lactose intolerance on the rise, taste profile limits acceptance, cheese alternatives—are they healthier?, projected retail sales of meat and dairy alternative products by category—1994-1999—graph {p. 34}, projected retail sales of dairy alternative products by segment—1994-1999—graph {p. 35}), projected market growth (overall market to reach \$662 million in 1999, meat alternatives and prepared meals to lead growth, projected retail sales of meat and dairy alternative products by category—1994-1999—table, growth of milk substitutes and other dairy alternatives expected to slow somewhat by 1999, projected retail sales of dairy alternative products by segment—1994-1999—table), market composition (meat alternatives will outsell dairy alternatives, share of sales by product category—meat and dairy alternatives—graph, soy-based ingredients most frequently used in meat-like products, protein ingredients used in meat-like products by number of products made with ingredient—1990-1992—table, bulk of dairy alternative sales from milk substitutes, share of sales by product segment—1989 vs. 1994—graph, sales by retail outlet, share of sales by retail outlet—meat and dairy alternatives—1994—graph).

Part III: The marketers. The marketers (About 30 significant marketers—most small, major companies move into the market, meat alternatives—other mass-market players, meat alternatives—natural foods players, the leaders in milk substitutes, cheese alternative market leaders, the

leaders in non-dairy desserts, prepared meals market leaders, selected marketers and brands of meat and dairy alternative products—chart), market and brand shares (mass-market leader Worthington Foods challenged by ADM/Pillsbury Green Giant Harvest Burger, wholesome and hearty growing fast, Boca Burger boogies by the Bystanders, marketer and brand shares of meat alternative products sold through supermarkets—1993 vs. 1994—table, natural foods sales of meat alternatives more fragmented, Worthington is leader in natural foods stores, White Wave and Lightlife hold second and third place, estimated marketer and brand shares of meat alternative products sold through natural foods stores—1994—table, many small regional players capture local markets, Eden Foods leads in milk substitutes, estimated marketer and brand shares of milk substitute products mass-market and natural foods stores—1994—table, Imagine Foods' Rice Dream is leading rice beverage, other vegetable beverages, Tree of Life's Soya Kaas holds leading share of cheese alternatives market, estimated marketer and brand shares of cheese alternative products sold through natural foods stores—1994—table, Tofutti holds top market share in frozen desserts, Fairmont Foods establishes lead in supermarkets, marketer and brand shares of prepared meals sold through supermarkets—1994—table, natural foods prepared meals—many brands and no one leader), competitive situation—overall market (marketers compete primarily through new product introductions, growth through mergers and acquisitions). Continued.

1571. Packaged Facts. 1995. The meat and dairy alternatives market (Continued—Document part II). New York, NY: Packaged Facts. xii+ 162 + 42 + 6 p. May. 28 cm.

• **Summary:** Contents: Continued from p. vi. Part III: The Marketers. Competitive situation—meat alternatives (Worthington pioneers Seventh-day Adventist vegetarian market, Miles Laboratories acquires Worthington—places Morningstar Farms in mass market, tofu drives natural foods market, soy frank marketers exploit tofu opportunities, tempeh—another meat alternative ingredient gains interest, wheat-based alternative seitan expands presence, Worthington places tofu patties in natural foods stores—changes hands again, Wholesome and Hearty develops foodservice distribution, meatless burger market heats up, patty competition fierce in natural foods arena, ADM/Pillsbury alliance brings soy burgers to mass market, Worthington fights back, category differentiates in the early 1990s, soy attacked by soy-free burger companies, meat alternative marketers cut the fat, low-fat sausages and franks, tightly targeted vegetarian fun foods and snacks, mass-market companies introduce ground meat analogs, natural product companies follow suit, Wholesome and Hearty seeks retail growth, others seek lucrative foodservice market), competitive situation—milk substitutes (early market limited to ethnic community, Edensoy a big hit—Vitasoy responds,

new lines introduced, competition—domestic manufacturing and larger containers bring down soy beverage prices, flavors and packaging distinguish early products, Westbrae introduces first low-fat soymilk, fortification has become key selling point, Eden's fortified product suits strict vegetarians, new package sizes expand market, re-closable—easy to pour, rice beverages—line extensions grab shelf space, Wholesome and Hearty's almond beverage, 100% organic products, a fresh—new market—some products shift to dairy case, mass-market interest), competitive situation—cheese alternatives (Seventh-day Adventists start category, first natural foods cheese alternative, Soyarella, not dairy-free, handful of marketers compete on price in natural foods arena {Soya Kaas, TofuRella by Brightsong / Sharon's Finest, Cemac Foods, Galaxy Foods, White Wave}, new products parallel dairy-based mass market, a move toward lower fat and fat-free, seeking the most melt-able cheese, Sharon's finest finds innovative ingredients, marketers target vegan market), competitive situation—non-dairy desserts (Tofutti dominates, dairy-free puddings—one major player {Imagine Foods sells a rice-based non-dairy pudding}, non-dairy yogurt has yet to catch on—but White Wave's Dairyless, a non-dairy soy yogurt, seems to be the only major natural foods brand in this category), competitive situation—prepared meals (flavored tofu and seitan expanded into meals, Legume is early innovator, cheese alternatives in prepared meals, other companies dive into prepared meals, action has been in natural foods, supermarket products have not succeeded), competitive profiles (The Archer Daniels Midland Co.—Grand Metropolitan PLC—Pillsbury division partnership, Amy's Kitchen Inc., A&A Amazing Foods Inc., Boca Burger Co.—Sun Foods, Eden Foods Inc., Fairmont Foods of Minnesota Inc., Fantastic Foods Inc., The Hain Food Group Inc., Imagine Foods Inc., Lightlife Foods Inc., Sharon's Finest, Tofutti Brands Inc., Vestro Natural Foods Inc., Vitasoy—USA Inc., White Wave Inc., Wholesome and Hearty Foods Inc., Worthington Foods Inc., Yves Veggie Cuisine Inc.), marketing trends (updated packaging, burger market segmenting into natural and mass market, Worthington—a master at working both markets, hamburger look-alikes crossing back into natural foods, veggie patties crossing into mass market, nostalgia—creating brand loyalty, marketers expanding into other categories, moving into the frozen breakfast section, retail displays, pushing into new distribution channels), new product trends (new—improved packaging, light and healthy, product names emphasize healthy, fat-reversal—mass-market burger-substitutes gaining fat, ground meat alternatives, new flavors and varieties—many gourmet and upscale, ethnic—especially Mexican and Southwestern, convenience, technology produces better mimics, mixing soy with grains and other ingredients, mainstreaming health foods, natural ingredients preferred—organic even better, selected new product introductions—meat and dairy alternatives—1994-March

1995–chart), advertising expenditures (most advertising not measured, specialty magazines are preferred medium, radio is another alternative, little consumer advertising, Worthington outspends competition, ADM-Pillsbury spends millions to launch Harvest Burger in 1994, Eden Foods targets mass market, Fantastic Foods' first major spending), advertising positioning (good health is overlying theme, and fat is prime concern, vegetables are a solution to a bad diet, milk substitutes advertised to lactose-intolerant market, highlighting a sense of the familiar, foods children love, traditional burger images used to woo mass market, vegetarian appeal used for meatless patties, organic is important feature in natural foods, examples of consumer advertising), consumer advertising (consumer promotions not heavily used, money-off coupons from several companies, new lines offer more generous rebates, recipes and books educate consumers, in-store promotions—the White Wave Center, marketers join forces in advertorial, sponsoring sports events—a healthy fit, 25 years of earth day, non-profit tie-ins, Turtle Island's recycling program, other types of promotions, examples of consumer promotions), trade advertising and promotions (three key trade publications, trade ads also used as consumer ads, trade ads scheduled to run in convention issues, trade ads announce growing business, editorial promotions, reaching retailers, example of trade ads). (Continued).

1572. Packaged Facts. 1995. Retail sales of meat alternatives: 1989-1994 (in million dollars) (Document part). In: Packaged Facts. 1995. The Meat and Dairy Alternatives Market. New York, NY: Packaged Facts. 162 + 42 + 6 p. See p. 17, 19, 51-52. May. 28 cm.

• **Summary:** A graph (p. 17) shows that sales of meat alternatives (in million dollars) rose from \$69.8 in 1989 to \$85.7 in 1991 to \$115.5 in 1993 and \$131.6 in 1994. The average annual sales growth for this period was 13.6%. In the past two years, however, sales of meat alternatives have increased by 15.2 and 18.0%.

Concerning the accuracy of these figures, page 19 notes that sales in these markets are difficult to quantify because a large share of retail dollar volume moves through natural foods stores, where sales are mostly untracked, and because various information sources define meat and dairy alternatives products differently. Therefore these “estimates are based on information provided by Soyatech, Inc., the Soyfoods Center, Information Resources, Inc., the natural foods trade, and various manufacturers.”

A table (p. 51) shows the market shares of major manufacturers of meat alternatives sold through supermarkets (NOT including natural food stores) in 1993 and 1994. The 1994 market shares were as follows: Worthington Foods 64.5% (Morningstar Farms brand 63.8% and Natural Touch brand 0.7%). ADM/Pillsbury 21.8% (up from only 8.0% in 1993). Wholesome & Hearty Foods

(Garden products) 7.9%. Yves Veggie Cuisine 2.1%. Sun Foods (Boca Burger) 1.4%. Other 2.3%. Source: Information Resources, Inc.; Packaged Facts.

A second table (p. 52) shows estimated market shares of major manufacturers of meat alternatives sold through natural food stores in 1994: Worthington Foods 30.4% (Natural Touch, Loma Linda, Worthington brands). White Wave 9.8%. Lightlife Foods 6.5%. Yves Veggie Cuisine 5.8%. Wholesome & Hearty Foods (Garden products) 4.8%. Fantastic Foods (Nature's Burger) 3.9%. Sun Foods (Boca Burger) 3.0%. Other 35.8%. Source: Packaged Facts.

Wholesome & Hearty Foods (Portland, Oregon): In March 1985 this company introduced the Gardenburger, a non-soy vegetarian patty into natural foods restaurants and college cafeterias. Foodservice remains Wholesome & Hearty's core business and accounts for about 70% of the company's sales. Today, over 22,000 foodservice outlets offer the company's various meatless patties (p. 59). In 1992 Wholesome & Hearty began an aggressive drive to introduce its Garden products line into retail stores—both natural foods and mass market.

1573. *Natural Foods Merchandiser*. 1995. Soyfoods Association elects officers. June. p. 14.

• **Summary:** The SAA recently announced the results of elections held at Expo West in Anaheim last March. Rick McKelvey of Lightlife Foods (Greenfield, Massachusetts) was elected president, Myron Cooper of Westbrae Natural Foods (Gardena, California) was elected vice president, and Dan Burke of Pacific Soybean & Grain (San Francisco) was re-elected treasurer. Continuing on the board are: Peter Golbitz of Soyatech, Inc.; Yvonne Lo of Vitasoy, U.S.A.; Tom Redmond of American Soy Products; Jack Painter of Archer Daniels Midland; Mark Messina, PhD; Harry Tanikawa for House Foods America; Lester Wilson, PhD, of Iowa State University; and Mike Rohan of the American Soybean Association.

1574. Kilman, Scott; Burton, Thomas M.; Gibson, Richard. 1995. An executive becomes informant for FBI, stunning giant ADM: Price fixing in agribusiness is focus of major probe; other firms subpoenaed. A microphone in the briefcase. *Wall Street Journal*. July 10. p. A1, col. 6; p. A8, col. 1. Monday.

• **Summary:** Mark E. Whitacre, age, 38, is a biochemist at ADM, considered by many a boy wonder of American agriculture. But for the past 3 years he has been leading a double life—He is also an undercover operative for the FBI—spying on his own company. In 1992 he went to federal investigators to blow the whistle on officials of his own company.

1575. *Mankato Free Press (Minnesota)*. 1995. Archer Daniels Midland stock plunges after investigation. July 10.

p. 5-6.

• **Summary:** “Decatur, Illinois (AP)—A widening Justice Department criminal investigation into the nation’s corn processors is causing Wall Street to shed stock in targets Archer Daniels Midland Co.” and CPC.

The companies being investigated have received search warrants or subpoenas for documents and testimony before a federal grand jury sitting in Chicago.

The probe, which is “international in scope,” involves price-fixing and predatory pricing of lysine, citric acid, and high-fructose corn syrup.

ADM’s shares 5.9% on Friday to close at \$17.75, the lowest since October.

1576. Edwards, Cliff. 1995. Grain, soybean giant may be investigated. *Albuquerque Journal*. July 11. p. D8. [1 ref]

• **Summary:** This Associated Press report relies heavily on a story published in *The Wall Street Journal* on July 10. ADM processes about one-third of America’s grain and soybeans. In 1992 Mark E. Whitacre, a high-ranking official at ADM, went to the FBI to report irregularities. Working for the FBI he went undercover and, using a briefcase rigged with a recorder, he secretly taped meetings between ADM and other agribusiness companies. ADM stock lost about \$2 billion in one week, falling to \$15.87½ on the NYSE. The BioProducts Division of ADM is said to have lost money in the last 3-4 years as the company launches new products. ADM and competitors Cargill Inc., A.E. Staley Manufacturing Co., and CPC International Inc. have said a federal grand jury in Chicago has either subpoenaed their records or executives or was expected to. Address: Associated Press.

1577. Quintanilla, Carl; Wilde, Anna D. 1995. You dirty rat, says Decatur, Ill., of mole at Archer-Daniels: People think Mark Whitacre betrayed them and ask why he turned to FBI. *Wall Street Journal*. July 13. p. 1. Thursday.

• **Summary:** The humorous story begins: “How could Mark. E. Whitacre do such a thing?” For the past 3 years the 38-year-old Mr. Whitacre, president of ADM’s Bio-Products Division and a model citizen, has been a secret FBI informant, taping conversations of his colleagues as part of a criminal price fixing investigation. No charges have yet been filed against ADM. ADM is very popular in Decatur, Illinois, and the mood in town seems to have turned decidedly against Mr. Whitacre—even among church-goers. Mr. Whitacre lives in the tiny town of Moweaqua, 17 miles from Decatur, in the palatial estate (complete with stables and swimming pool) once owned by ADM Chairman Dwayne O. Andreas. There he has always been considered a model citizen and nice person. He is a Rotary Club speaker, a new trustee of Millikin University, and known for adopting troubled kids.

Many citizens in town “would rather judge Mr. Whitacre a rat” than contemplate that ADM might be fixing prices. Says one 70-year-old retiree: “Mr. Whitacre’s not furthering

his career much, but he’s certainly a man of his convictions.”

The price of ADM stock has fallen 15% since last Friday. A photo-like sketch shows Mr. Whitacre. Address: Staff reporters.

1578. Archer Daniels Midland Co. 1995. ADM reports unaudited earnings of \$0.44 a share in fourth quarter and \$1.55 a share in fiscal year (News release). Decatur, Illinois. 1 p. July 17.

• **Summary:** “Net earnings for the year ended June 30, 1995 were \$795,915,000 equal to \$1.55 per share based on 514,967,000 average shares outstanding. Net earnings for the same period a year ago were \$484,069,000 equal to \$0.93 per share on 520,295,000 average shares outstanding, as adjusted above. Thus net earnings were up by 64.4% over the previous year.

“Results of the current year quarter and year included a gain of \$0.07 per share on the sale of the Company’s British Arkady bakery ingredient business.”

For more information contact D.J. Schmalz at ADM. Phone: 217-424-5413. Address: Decatur, Illinois. Phone: 217-454-5200.

1579. Schmalz, Doug J. 1995. ADM sells its British Arkady bakery ingredient business, but keeps Haldane Food Group and other parts of British Arkady (Interview). *SoyaScan Notes*. July 19. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** ADM sold British Arkady’s core business, which was basically dough and improvers, to Unilever. This core business in Manchester represented about half of British Arkady’s total business. ADM kept the following parts of British Arkady: S.I.O. (a fats and oils company in France), the feed businesses in Ireland (they do some grinding but do not crush soybeans), and the entire Haldane Foods Group Ltd. (located midway between Oxford and Cambridge in Newport Pagnell, Buckinghamshire, England). The machines (extruders) that make TVP are still located in the old British Arkady plant in Manchester because they were an integral part of the plant. Unilever is now tolling (producing) the product for ADM, but eventually ADM will probably take its extruders out of the Manchester factory and move it to one of their other plants.

The amount of money involved in the sale was relatively small. This story will probably not be discussed in detail in ADM’s annual report.

Follow-up talk with Mr. Garton of British Arkady in Manchester. The deal to sell British Arkady’s bakery ingredient business was finalized on June 12. As far as he knows, the only story was a very brief one in the *Manchester Evening News* on about June 13, based on a Unilever press release. There might be a story in the *Financial Times* (London) on about June 13th. Address: Vice President, ADM, Decatur, Illinois. Phone: 217-424-5413.

1580. Stoneback, Diane. 1995. Veggie burgers enter mainstream market. *Sun-Times (Chicago, Illinois)*. July 19.  
 • **Summary:** “Can America’s love affair with the all-beef patty be shaken? It won’t be easy, but the Jolly Green Giant may be big enough to do the job.” A large photo shows packages of Green Giant Harvest Burgers (meatless) in three flavors: Southwestern Style, Italian Style, and Original Flavor. The caption: “When mighty Green Giant introduced its Harvest Burgers into supermarkets, it signaled vegetarian burgers’ entry into Middle America’s diet.” Address: Food Editor, Morning Call (Allentown, Pennsylvania).

1581. Burton, Thomas M.; Kilman, Scott; Gibson, Richard. 1995. Corn plot. Investigators suspect a global conspiracy in Archer-Daniels case: They see signs of collusion with firms in Europe, Japan on grain products. Let’s go to the videotape. *Wall Street Journal*. July 28. p. A1, A5. Friday (West).  
 • **Summary:** It looks like an international conspiracy, complete with videotapes and hundreds of audio tapes of key meetings—thanks in large part to the help of whistle-blower and top ADM executive Mark E. Whitacre, age 38, who headed the fast-growing BioProducts division and reported to Michael Andreas. Since his undercover role was disclosed, Mr. Whitacre has been barred from ADM facilities, but he remains on the company payroll.

Federal investigators are working with a Chicago federal grand jury. The investigation is focusing on: ADM executives—Vice President Michael D. Andreas and Group Vice President Terrance S. Wilson (head of ADM’s corn processing division). Andreas, age 46, who runs many of the daily operations of the \$12.5 billion-a-year grain processing giant, has long been considered the heir apparent to his father, 77-year-old Dwayne Andreas, chairman and CEO. Although Michael Andreas has a reputation as a super-salesman and has long been groomed for the top post, he has stayed out of the public spotlight.

One key subject of the investigation is lysine, a fermented by-product of corn processing. It is made by feeding corn-derived dextrose to microorganisms. A videotape appears to show collaboration among competitors to limit the supply of lysine in order to keep prices high. Lysine, an amino acid, is added to the feed of hogs and chickens to speed growth of their lean muscle. Other possible evidence of a conspiracy comes from internal company documents obtained by the government during the past 3 years. They show lysine target sales and actual monthly sales of each manufacturer including Ajinomoto Inc. and Kyowa Hakko’s BioKyowa unit (both of Japan), and ADM itself. Though not well known, lysine is a big profit-maker and a key ingredient in the feed industry. About 500 lb/year are made and keeping the price high is worth millions of dollars to manufacturers. The Japanese were the first to make lysine commercially in the 1960s. ADM, which calls itself

“supermarket to the world” has a reputation for entering a new market in a big way. It did that in the case of lysine, constructing what is believed to be the biggest fermentation plant in the world at its sprawling complex at Decatur, Illinois. ADM entered the lysine market in 1991 and today can produce about 250 million lb/year of lysine, about half the world’s total output.

ADM’s market entry triggered a slide in lysine prices for well over \$1 a pound to nearly 60 cents. Then in 1992, for reasons that aren’t clear, prices rebounded sharply to about \$1 a pound—despite the much larger supply of product. This area is of special interest to investigators. Some lysine users believe their ability to switch to soybean meal, a natural source of lysine, keeps synthetic lysine prices in check. However poultry growers are more dependent on synthetic lysine because birds each much less feed, making soybean meal a less effective source of lysine.

ADM is believed to have spent roughly \$1,500 million establishing its BioProducts division, which Mr. Whitacre ran during the 3 years he surreptitiously helped the U.S. government gather information about possible ADM price collusion. Products made by the BioProducts division, in addition to lysine and citric acid, include lactic acid, monosodium glutamate, and xanthan gum. They are believed to generate some of the company’s highest profit margins and about 15% of ADM earnings.

Another key subject is citric acid, also derived from corn processing, which is used in the detergent, food, and beverage industries. ADM entered the citric acid market in 1991 when it bought a thriving manufacturing plant from Pfizer Inc.—and today it is the leading U.S. maker of citric acid. ADM is said to have documents showing citric acid sales targets and actual sales for ADM, the Hoffman-LaRoche Inc. U.S. unit of Switzerland’s Roche Holdings Ltd. and Germany’s Bayer AG (which makes citric acid at its plant in Elkhart, Indiana).

Besides studying lysine and citric acid, federal investigators are also looking at high-fructose corn syrup and possible violations of antitrust laws in connection with its sale. ADM is one of the biggest manufacturers in the \$3 billion-a-year worldwide market. 75% of the product is used to sweeten soft drinks.

The federal investigation is now 3 years old. Investigators are still examining documents they seized from ADM headquarters in late June. Other companies are still handing over to the government documents subpoenaed by the grand jury.

1582. **Product Name:** Harvest Direct Protean (Dry Mix—Alternative to Ground Meat) [Original Flavor, Taco Mix, Cheeseburger Flavor, Garden Herb Flavor, Chili Mix, Italian Flavor, Grill Flavor, Barbecue Mix, Sausage Flavor].  
**Manufacturer’s Name:** Harvest Direct, Inc.  
**Manufacturer’s Address:** P.O. Box 4514, Decatur, Illinois

62525. Phone: 800-637-5850.

**Date of Introduction:** 1995 July.

**Ingredients:** Taco mix: Soy protein concentrate, textured soy flour, tomato powder, corn starch, dehydrated onion, modified oat flour, maltodextrin, spices and spice extractives, hydrolyzed soy protein, salt, onion powder, garlic powder, paprika (for color), malt extract, caramel color, natural flavor, cocoa powder, citric acid.

**Wt/Vol., Packaging, Price:** 4 oz foil pouch.

**How Stored:** Shelf stable.

**New Product–Documentation:** Talk with Monty Kilburn, Catalog Director of Harvest Direct. 1996. Sept. 17. These products, made by Harvest Direct (not by ADM), were introduced in July 1995 and now are sold to health food stores nationwide. Leaflet (color, 8½ by 11 inches) sent by Monty Kilburn. 1996. Sept. 18. The front shows color labels of the 9 products. The back gives a general description of the products. “New product features: Fat free. Cholesterol free. Vegetarian. Complete dry mix. Just add water. New foil pack. Nine great flavors.”

Sample products with Labels of Taco Mix and Barbecue Mix sent by Harvest Direct. 1997. March 11. 5¼ by 7½ inches. Foil pouch. 4 oz (113 gm). A color photo on the front panel shows the prepared recipe. “Fat free. Cholesterol free. The all-vegetable alternative to meat.”

1583. Kilman, Scott; Burton, Thomas M. 1995. Archer fires informant, charges theft. *Wall Street Journal*. Aug. 8. p. A3, col. 4; p. A14, col. 1.

• **Summary:** ADM fired Mark E. Whitacre, president of the company’s BioProducts division, for allegedly stealing at least \$2.5 million from the firm. An illustration (dot-style) shows Whitacre. The Justice Department relied on Mr. Whitacre for 3 years to secretly record meetings between senior ADM officials and executives of competing producers of lysine and citric acid. Address: Staff reporters.

1584. Poppe, George. 1995. Current prices and types of soy protein products (Interview). *SoyaScan Notes*. Aug. 9. Conducted by Walter J. Wolf of NRRC, Peoria, Illinois.

• **Summary:** Edible soy protein isolates are 130-135 cents/lb. Industrial soy protein isolates are 100 cents/lb. Edible casein is 225 cents/lb (price quoted in current issue of *Chemical Marketing Report*).

Types of industrial isolates available: (1) Unhydrolyzed, high viscosity. Not used much. (2) Hydrolyzed, lower viscosity. Used extensively. (3) Hydrolyzed, chemically modified. Reacted with phthalic anhydride or other anhydrides. ADM has a new product available. It is ‘more hydrolyzed and chemically modified and gives brighter coatings.’ It apparently is used for coatings used on six pack cartons for beer and Coke, etc.

“The main use of industrial soy isolates is in paper coating. Soy flour isolates are no longer used in the plywood

industry. That application has been completely displaced by phenolic resins, etc. Some isolate is also being used to glue the laminated paper cones used by the textile industry for winding of yarns.” Address: Archer Daniels Midland Co., Decatur, Illinois. Phone: (217) 424-2471.

1585. Kilman, Scott; Burton, T.M.; Gibson, R. 1995. Ever more serious—ADM informant faces widening allegations; he attempts suicide. U.S., told by corn processor of forged checks, now is investigating Whitacre. Discovered in closed garage. *Wall Street Journal*. Aug. 14. p. 1, A4.

• **Summary:** “The government’s high-level informant in the Archer-Daniels-Midland Co. antitrust investigation, Mark E. Whitacre, is hospitalized after trying to kill himself at his home south of the company’s” headquarters in Decatur, Illinois.

Mr. Whitacre was fired earlier last week after the company accused him of stealing \$2.5 million. ADM now believes Mr. Whitacre may have stolen \$5 million.

A dot-style illustration shows Mark E. Whitacre.

1586. Kilman, Scott. 1995. Archer 10-K filing shows 28 lawsuits by shareholders. *Wall Street Journal*. Aug. 18. p. B3B. Friday (West).

• **Summary:** In its annual 10-K filing, ADM stated that the suits were filed against the company or its officers and directors in the wake of the antitrust investigation by the U.S. Department of Justice. The lawsuits were triggered by the drop in ADM stock after Wall Street learned in late June that ADM is the focus of an industry-wide investigation on possible price-fixing related to 3 corn-derived products: high-fructose corn syrup, lysine and citric acid. Nobody has yet been charged as a result of the antitrust investigation.

1587. Burton, Thomas M.; Kilman, Scott; Gibson, Richard. 1995. ADM asserts ex-official diverted over \$9 million. *Wall Street Journal*. Aug. 21. p. A2, A6. Monday (West).

• **Summary:** ADM officials say former ADM executive Mark Whitacre, age 38, diverted more than \$9 million to a Swiss bank account through a phony contract with a Swedish agricultural company named ABP International in Lund, Sweden.

1588. Burros, Marian. 1995. Fresh tofu: Safe cooks buy carefully. *New York Times*. Aug. 23. p. C1, C8.

• **Summary:** “Eight containers of tofu were purchased recently from six corner markets in New York City. Two of the containers were commercially packaged and sealed; six had tofu that was floating in water and required a store employee or a customer to pick it up by hand, with tongs or with a plastic bag. The tofu was analyzed by Certified Analytical Group Inc. of Plainview, Long Island, for the total level of bacteria; for coliform, which is indicative of unsanitary handling and storage conditions; for E. coli,

which indicates fecal contamination, and for yersinia, a food-poisoning organism historically associated with tofu.

“None of the samples contained yersinia. Both of the prepackaged containers of tofu—Kinugoshi and Mori Nu brands—had relatively low levels of total bacteria and no *E. coli*. Mori Nu had a level of coliform high enough to indicate unsanitary conditions... But all the tofu that was floating in water had extremely high levels of total bacteria and very high levels of coliform; four contained *E. coli*.”

“Consumers can protect themselves by buying tofu only in sealed packages and by cooking it at high temperatures, until it reaches 160 degrees internally—in other words very hot.” Contains two recipes, incl. Ma-Po bean curd. A photo shows tofu being sold loose from open tubs of water.

**1589. Product Name:** Soy Manna (Textured Soy Protein).  
**Manufacturer’s Name:** American Health & Nutrition, Inc.  
**Manufacturer’s Address:** 508 Waymarket Dr., Ann Arbor, Michigan 48103. Phone: 313-994-7400.

**Date of Introduction:** 1995 August.

**Ingredients:** Incl. organic soybeans.

**Wt/Vol., Packaging, Price:** Bulk.

**How Stored:** Shelf stable.

**New Product–Documentation:** Ad in Organic Food Business News (Altamonte Springs, Florida). 1995. Aug. p. 8. “Certified organic. Made without hexane and other solvents used in all non organic TVP. Wholesome nutty flavor. Easily digestible. 45% high quality protein. Versatile food uses such as burgers, breakfast and entree mixes.” In an article accompanying this ad, David Singsank, co-owner, says his company is now selling an organic soy protein product named Manna to wholesalers for use in bulk bins in co-ops and natural food stores. It has a chewy texture and will cost wholesalers \$0.75 to \$0.90/lb.

1590. Minnesota Soybean Research & Promotion Council. 1995. Welcome to Minnesota, the land of 10,000 lakes and 35,000 soybean producers! Where agriculture is the leading industry and soybeans are the number one cash crop! (Leaflet). North Mankato, Minnesota. 1 p. Single sided. Aug. 28 cm.

• **Summary:** This 1-page leaflet signed by Donald Nickel (Chair of the Minnesota Soybean Research & Promotion Council) and Kevin Paap (President of the Minnesota Soybean Growers Association) begins: “Minnesota has had a long and prosperous history of producing soybeans, which many people refer to as ‘The Miracle Crop.’ Soybeans first came to Minnesota back in the early 1930s as a ‘plow down’ crop to add nitrogen to the soil for other crops. Since that time, Minnesota has continued to increase its soybean production from a mere 30,000 bushels in 1934 to 230,000,000 bushels in 1994. The 1994 harvest was valued at just over 1 billion dollars. Minnesota is third in the nation in soybean production.” Note: Soybeans were actually

first being grown in Minnesota by January 1900 (See W.H. Stoddard, 1900).

“More interesting facts: Soybeans are grown in 75 of Minnesota’s 87 counties. Over 40% of the soybeans grown in Minnesota are exported throughout the world... Mankato, Minnesota, home of two major soybean processors [Honeymead Products Co. and Archer Daniels Midland Co.—ADM] with an overall crushing capacity of nearly 180,000 bushels per day, is the largest soybean processing city in all of North America... Minnesota ranks 2nd in the nation in turkey production, 4th in the production of pork, 5th in milk production, and 6th in overall red meat production... We’re also proud to report that 96 percent of Minnesota’s newspapers are printed with soy ink.” Address: 360 Pierce Ave., Suite 110, North Mankato, Minnesota 56003. Phone: 507-388-1635.

1591. Kilman, Scott; Burton, Thomas M. 1995. Archer-Daniels inside inquiry triggers departure or suspension of managers. *Wall Street Journal*. Sept. 22. p. A4, col. 2.  
• **Summary:** “An internal investigation by Archer-Daniels-Midland Co. has triggered the departure or suspension of three prominent managers with ties to Mark E. Whitacre, the former-executive-turned-federal informant in a government antitrust investigation.

“Archer-Daniels’ internal inquiry has uncovered evidence suggesting that some managers, including the head of its Mexican operations, received questionable payments from the company through the use of phony invoices, people familiar with the events say...” Address: Staff reporters.

1592. Bovard, James. 1995. Archer Daniels Midland: A case study in corporate welfare. Cato Institute Policy Analysis No. 241. Washington, DC: Cato Institute. 27 p. [138\* ref]  
• **Summary:** Executive summary: “... “ADM has cost the American economy billions of dollars since 1980 and has indirectly cost Americans tens of billions of dollars in higher prices and higher taxes over that same period. At least 43 percent of ADM’s annual profits are from products heavily subsidized or protected by the American government. Moreover, every \$1 of profits earned by ADM’s corn sweetener operation costs consumers \$10, and every \$1 of profits earned by its ethanol operation costs taxpayers \$30.”

Note: Cato Institute is a libertarian think tank.

“Perhaps the most honest and thorough analysis of the effect of ethanol on farm income and taxpayers and consumers was done by the USDA’s Office of Energy in 1986.”

“Since the USDA report came out, the amount of corn used for ethanol production has increased by more than 300 million bushels a year. Going on the report’s assumptions, that means that soybean prices have been 12 cents a bushel lower than they otherwise would have been—a loss of \$300 million to soybean farmers on their 1994 harvest of 2.5

billion bushels.[51]

“A more recent USDA analysis, published in November 1993, concluded that increased ethanol production would decrease soybean prices, boost variable production costs for livestock by \$462 million, and result in an overall loss of \$133 million for farmers outside the northern plains, the Corn Belt, and the Great Lakes states.[52].”

Notes: [51] “Agriculture Dept. New Crop Estimates,” *Journal of Commerce*, November 10, 1994, p. 8.

[52] Mark Peters, “The Clean Air Act Amendments of 1990 and Agriculture,” *Feed Situation and Outlook*, U.S. Department of Agriculture, November 1993, p. 27. Address: Associate Policy Analyst, Cato Institute.

1593. Archer Daniels Midland Co. 1995. Annual report. P.O. Box 1470, Decatur, IL 62525. 42 p. Sept.

• **Summary:** Net sales and other operating income for 1995 (year ended June 30) were \$12,671 million, up 11.4% from 1994. Net earnings for 1995 were \$795.9 million, up 64.4% from 1994. Shareholders’ equity (net worth) is \$5,854 million, up 16% from 1994. Net earnings per common share: \$1.47, up 65.2% from 1994. Number of shareholders: 34,385.

On the cover is an American flag and a photo of President John F. Kennedy with the famous quotation from his 1961 inaugural address, “Ask not what your country can do for you—ask what you can do for your country.” ADM contributed \$6.5 billion last year to America’s balance of trade.

On page 3 are graphs showing rising global consumption of soybean meal and vegetable oils from 1964 to 2004, and lysine from 1975 to 2004. For lysine, the equivalent of ten more ADMs will be needed in the next 10 years, for vegetable oil 5 more ADMs, and for soybean meal one more ADM.

On pages 4-5 is a speech delivered by President Eisenhower in 1953 urging the USA to export more food and fewer weapons. Ike’s program [Public Law 480 or Food for Peace] resulted in \$50 billion in exports to needy countries from 1954 to 1994.

“While the whole of ADM’s business can be divided into families of products and services, virtually all can be summarized in a single thought: value-added.” ADM makes peanut oil at a mill in Augusta, Georgia. “Soybean oil: Our Europoort facility in the Netherlands remains the world’s busiest soybean processor, while in the United Kingdom plans are underway to install a new state-of-the-art vegetable oil refinery and packaging plant at Erith [on the River Thames about 13 miles east of the center of London]. Crushing and refining operations are also being modernized in Hamburg, Germany. These terminals give us access to the three most important rivers in Europe—the Rhine, Elbe and Danube—all the way to the Black Sea” (p. 7).

ADM makes vitamin E from soybean oil distillate. With

the completion of a new state-of-the art facility in Decatur, Illinois, ADM has begin to make distilled monoglycerides from soybeans (p. 9).

“BioProducts: ADM BioProducts traditionally introduces at least one new fermentation product each year: in the past year the newcomer was xanthan gum for both food and industrial applications. In 1996 ADM BioProducts expects to add ascorbic acid (vitamin C), astaxanthin and biotin to a lineup that includes monosodium glutamate, sorbitol, citric and lactic acids and their salts. ADM’s vitamin C will be produced in a brand-new world-class facility in Decatur. Other products planned for the near future include penicillin, vitamin B-12 and beta-carotene.

“Amino acids for the feed industry remain a major focus of ADM BioProducts. Units to produce threonine and tryptophan are now in full production. This, along with our interest in a methionine plant, makes ADM the only company offering all four leading amino acids: lysine, methionine, tryptophan and threonine” (p. 13).

Isolated soy protein: Construction of increased isolate capacity has begun at Europoort (Netherlands) and in the USA. “Low nitrite ProFam 781 was successfully introduced into the European infant formula market during the past year. The Pacific Rim and former Soviet Union are growing markets for isolates.” Harvest Burgers: “Since the beginning of our joint venture with Pillsbury 46 million Harvest Burgers have been sold under the Green Giant label... In Europe Harvest Burger products are now being carried by a German supermarket chain with over 2,300 stores. Another German firm is introducing a line of Harvest Burger frozen entrees that will eventually be marketed in seven EC countries” (p. 15).

“Other soy-based foods: Work is underway on a soy-based dry mix that is the nutritional equivalent of milk. This product would be distributed at little expense wherever starvation exists or powdered milk is too expensive. The product has a shelf life of over a year, requires no refrigeration and is made by adding water.

“A similar product is being developed as a milk alternative for North America. This flavored cholesterol-free product would be carried in the refrigerated dairy section of supermarkets and would appeal to the lactose-intolerant (31% of Americans) and other health-conscious consumers. A frozen dessert version of this product is also being developed. In the United Kingdom Haldane Foods offers the soy-based Vege Mince, Vege Bites, Vege Steaks, yogurt and ‘pot noodles’” (p. 15). A full-page color photo (p. 14) shows rich soymilk being poured onto a bowl of cereal and fruits.

“Cogeneration is an efficient low-cost source of energy and steam and is the source of power for our seven largest plants in the U.S., the U.K., Ireland, Germany, and the Netherlands. Our cogeneration system is decades ahead of most U.S. technology, and offers substantial savings over traditional power sources. The key is ADM’s fluidized bed

technology which enables the cogeneration plants to run on an unusual mixture of high-sulfur coal, discarded tires and limestone” (p. 21).

“Note 11—Antitrust investigation and related litigation: The Company, along with a number of other domestic and foreign companies, is the subject of a grand jury investigation into possible related crimes in the food additives industry. The investigation is directed towards possible price-fixing with respect to lysine, citric acid and high fructose corn syrup. Neither the Company nor any director, officer or employee has been charged in connection with the investigation.”

Stephen Yu, managing director of ADM Asia Pacific, Ltd. is unrelated to the Stephen Yu who was a tofu pioneer and founder of Victor Food Products, Ltd. (of Toronto, Ontario, once Canada’s largest tofu manufacturer). Address: Decatur, Illinois.

1594. Archer Daniels Midland Co. 1995. 95-96 food ingredient catalog. Supermarket to the world. P.O. Box 1470, Decatur, IL 62525. 43 p.

• **Summary:** A quotation by David Brinkley on the cover states: “Farmers are the only indispensable people in this planet.”

ADM Arkady (p. 8, Olathe, Kansas)—Wheat gluters: Provim ESP vital wheat gluten, Whetpro-75 vital wheat gluten, Whetpro-80 vital wheat gluten, SQ-48 meat emulsion binder, Meatbind-3000 meat emulsion binder.

ADM lecithin (p. 16-18). Basic types are: Standard lecithins (4 Yelkin products), Capsule grade lecithins (8 Capsulec products), Complexed lecithins (6 Beakin, 2 Performix, and 4 TLV products), Purified lecithin (Yelkin Gold). Modified lecithins (1 Yelkin and 4 Thermolec products), Deoiled lecithins (3 Yelkin products).

ADM Milling (p. 21, Overland Park, Kansas). Do-Pep vital wheat gluten, Soy fortified bulgur, Soy fortified sorghum grits, Wheat soy blend.

ADM Packaged Oils—Refined packaged vegetable oils (p. 26-33): Soybean oil is used in many of these products. Product categories: Liquid shortening, salad oil, cube margarine, puff pastry, butter flavored oil, popcorn oil, cube shortening, butter blends and spreads.

ADM Protein Specialties (p. 34): Isolated soy proteins. Ardex D & Ardex D Dispersible, Ardex D-HD, Ardex DHV Dispersible, Ardex R, Ardex F & Ardex F Dispersible, Ardex FR.

Page 35: Pro Fam 646, Pro Fam 781, Pro Fam 970, Pro Fam 972, Pro Fam 974 & 974 Fortified, Pro Fam 981, Pro Fam 982, Pro Fam 985.

Page 36: Arcon (Soy protein concentrates): Arcon G (“Low PDI, free flowing grits. Applications: Protein supplement systems”) Arcon F (“Low PDI, free flowing fine powder. Applications: Protein supplement meat systems”), Arcon VF (“Low PDI, free flowing very fine

powder. Applications: Protein supplement meat systems”), Arcon S & Fortified S. (“High PDI, free flowing flour. Applications: Protein supplement meat systems emulsion stabilizer”). Arcon T (Textured soy protein concentrates): Arcon T & Fortified Arcon T (“Variety of textures, sizes, colors. Applications: Ground meats, fish, poultry”). TVP (Textured vegetable protein): TVP & Fortified TVP (“Variety of textures, sizes, colors. Applications: Ground meat in beef patties, sausage, vegetarian foods, meatloaf mix, etc.”). Bacon Bits (Bacon like flavor, color, texture. Applications: Salad toppings, garnish item”). Nutrisoy flours/grits (defatted soy flour & grits): Nutrisoy defatted soy flakes, Toasted Nutrisoy grits, Nutrisoy 7B flour, Bakers Nutrisoy, Nutrisoy flour, Toasted Nutrisoy flour. Note: This is the earliest English-language document seen (Dec. 2007) that uses the term “Arcon T” to refer to textured soy protein concentrate. ADM says the product was introduced in Jan. 1989.

Page 37: Soylec (lecithinated) and refatted soy flours: Nutrisoy 220T, 15% refatted Bakers Nutrisoy, Soylec C-15, Soylec C-6, Soylec T-15. Soy Milk: WMR1 (whole milk extender), WMR4 (contains no lactose, cholesterol, or animal fats). Address: Decatur, Illinois.

1595. Archer Daniels Midland Co. 1995. Notice of annual meeting. P.O. Box 1470, Decatur, IL 62525. 15 p. Sept.

• **Summary:** Proxy statement: On pages 3-4 is a table showing, for each member of the ADM board of directors, the person’s name, age, principal occupation or position, and directorships of other publicly owned companies, year first elected as director, shares of ADM common stock owned, and percent of this class of stock owned. For example, Dwayne O. Andreas, age 77, is chairman of the board and CEO, and is a director of Salomon Inc. He was first elected as a director in 1966 and now owns 23.8 million shares, or 4.72% of the class.

Other major shareholders are: H.D. Hale, age 70, 13.8 million shares. J.K. Vanier, age 67, 9.1 million shares. L.W. Andreas, age 73, 6.1 million shares. Michael D. Andreas, age 46, 6.0 million shares. G.O. Coan, age 59, 2.7 million shares. O.G. Webb, age 59, 2.0 million shares. Martin L. Andreas, age 56, 1.5 million shares. S.M. Archer, Jr., age 72, 1.4 million shares. J.R. Randall, age 70, 1.1 million shares.

Dwayne O. Andreas and L.W. Andreas are brothers. Martin L. Andreas is their nephew. Michael D. Andreas is the son of Dwayne O. Andreas.

The 1995 salaries of some of the top executives are: Dwayne O. Andreas \$3,612,171. J.R. Randall \$1,686,004. Michael D. Andreas \$1,136,004. H.D. Hale \$887,521. Address: Decatur, Illinois.

1596. Pillsbury Company. 1995. Great summer grilling! Like any guy, he occasionally craves a burger (Ad). *Vegetarian Times*. Sept. p. 20-21.

• **Summary:** This ad appears on two facing pages. On the

left side of the left page is a tall one-third page ad titled “Great summer grilling!” A color photo shows a package of Green Giant Harvest Burgers, with a recipe for Primavera Picnic Patties, using 4 Harvest Burgers. The full right pages is devoted to the ad (which first appeared in this magazine in Jan. 1995) titled “Like any guy, he occasionally craves a burger.”

1597. Kilman, Scott; Ingersoll, B.; Abramson, J. 1995. Risk averse. How Dwayne Andreas rules Archer-Daniels by hedging his bets: CEO works with rivals, gives to both parties and invests in the media. Soy meatballs on the menu. *Wall Street Journal*. Oct. 27. p. 1, A8.

• **Summary:** A very well researched and written profile of Dwayne Andreas and how he applies the concept of hedging to every aspect of ADM’s business life. Andreas was born on 4 March 1918 in Worthington, Minnesota, the son of a Mennonite farmer. From 1936 to 1938 he attended Wheaton College in Illinois. From 1938 to 1945 he was executive officer of Honeymead Products, a family-owned company. From 1945 to 1952 he was vice president of Cargill.

In [Nov.] 1947, when ADM Chairman Shreve Archer died after choking on a chicken bone, Dwayne Andreas was age 29 and vice president of a rival firm. For the next 18 years, Mr. Andreas built a name for himself in the grain industry and became a millionaire in the process. He left Cargill and returned to Honeymead, where from 1953 to 1960 he was an executive and the chief shareholder. From 1960 to 1966 he was executive vice president of Farmers Union Grain Terminal Association, a cooperative. By 1965 ADM was foundering (it had never quite recovered from the loss of its leader) and the founding families were ready to sell a sizeable share to Mr. Andreas, to make him a director, and to groom him for the top job. So in 1966 Andreas accepted the offer, joining ADM as a director and member of the executive committee. He spent the rest of his career leaving as little as possible to chance. Now age 77 and a diminutive 5 feet four inches tall, he “runs the giant publicly-trade grain-processing company like a private family concern. Secrecy is so tight that ADM doesn’t even release quarterly revenues. Mr. Andreas once proudly told analysts, “Getting information from me is like frisking a seal.” In 1970 Andreas was named ADM chief executive officer, and in 1972 he was elected chairman of the board.

ADM is now America’s largest commodity processor, with annual revenues of \$12.7 billion. Including stock dividends, ADM’s stock value has climbed at an average annual rate of 17% over the past decade—outpacing the stock market’s annual return of roughly 15%, as measured by the Wilshire 5000 Equity Index. ADM earnings soared 64% during the last fiscal year to a record \$795.9 million.

Notwithstanding criticism that ADM’s board is dominated by Mr. Andreas plus his family and friends, Wall Street sees no possibility of a serious battle for corporate

control, and little chance that any other company could pay at least \$8.7 billion (ADM’s market capitalization) to buy the company.

ADM is a major beneficiary of federal price supports for sugar (they make ADM’s high-fructose corn sugar an economical product) and of the 54-cent-a-gallon excise tax break on ethanol (since ADM is the dominant producer of the corn-based fuel additive). Mr. Andreas helps preserve these twin towers of legislative largesse by hedging. ADM leads corporate America in contributing to both political parties. “Since 1981, the company has given more than \$800,000 to the Democratic Party and more than 1.5 million to the GOP” (Republican Party).

Pie charts show that ADM is the market leader in four major U.S. markets, controlling an estimated 35% of all corn refining (followed by Staley, Cargill, and CPC International), 31% of high-fructose corn syrup (again followed by Staley, Cargill, and CPC), 28% of oilseed processing (followed by Cargill 25%, Bunge 16%, Ag Processors 14%, Central Soya 10%, and others 7%), and 26% of wheat milling (followed by ConAgra 25%, Cargill 12%, Cereal Processors 6%, and others 31%).

Doing business with competitors has long been one of Mr. Andreas’s hallmarks. As he likes to say, “Keep your friends close and your enemies closer.” In 1992 ADM built a 3.5-mile pipeline to neighboring A.E. Staley Mfg. Co., one of its biggest rivals in the high-fructose corn syrup business. (Together the two companies control half of the \$3 billion market.) The pipeline allows either company to call on its neighbor in an emergency for raw material, thus reducing risk.

Four ADM board members are Andreas, and an additional six of the 17 directors are ADM executives, retired executives, or relatives of senior managers. At ADM major decisions are made at the very top, mainly by three men: Dwayne Andreas, his son Michael Andreas (who is in charge of many day-to-day operations), and James R. Randall, who has been president of ADM for 20 years. Top managers operate without budgets or much paperwork. “Decisions are often made in the executive dining room over a lunch of Archer-Daniels soybean cuisine.”

“Once Mr. Whitacre helped arrange a luncheon between Mr. Andreas and visiting executives of a company participating in the lysine meetings in hopes of taping them discussing price fixing. But Mr. Andreas spent the entire lunch talking to his bewildered guests about his favorite product, soy-based meat substitute, then sent them off with a big bag of the stuff.

In August 1994 he told this story concerning his views on competition: “The gazelle must run faster than the fastest lion or be eaten. And the lion must outrun the slowest gazelle or starve. It doesn’t matter whether you are a lion or a gazelle; when the sun comes up, you’d better be running.”

“He delights in being the most powerful man in

American agriculture, regaling his guests over soy meatballs and catfish with stories of his back-channel diplomacy for American presidents... But Mr. Andreas's enjoyment of *Realpolitik* shouldn't be confused with a lack of conviction friends and associates say. He is passionate about the virtue of spreading soy-based food around the world.—albeit generally at a tidy profit—and about the perils of soil erosion. His uncle was an evangelist and young Dwayne spent hours in revivalist tents listening to the preachers. Mr. Andreas preserves some of that fervor in his own speeches about government and business policy.”

In recent years ADM has been sued by Ralston Purina Co. for alleged technology theft. Ralston claimed patent infringement and misappropriation of trade secrets involving a soy protein product. This case is now entering the pretrial discovery phase.

Mr. Whitacre has alleged that ADM pays some top executives through illegal channels. ADM in turn has accused Mr. Whitacre of stealing more than \$9 million from the company.

Meanwhile ADM has continued its upbeat institutional ads that have blanketed the television networks and many publications for years. In a sort of ratings hedge, the company also spent millions advertising on ABC's "This Week with David Brinkley," NBC's "Meet the Press," and CBS's "Face the Nation." From Jan. 1994 to April 1995 ADM spent \$4.7 million advertising on "Meet the Press" and \$4.3 million on "Face the Nation." ADM is also the leading corporate underwriter for the PBS MacNeil/Lehrer Newshour, providing \$6.8 million or 27% of the program's annual budget.

A point-style portrait illustration shows Dwayne O. Andreas. Address: 1. Decatur, Illinois; 2-3. Washington, DC.

1598. Archer Daniels Midland Co. 1995. First quarter report to shareholders, and a report on the 72nd Shareholders Meeting. Box 1470, Decatur, IL 62525. 16 p. 20 x 9 cm.

• **Summary:** This is the first quarterly report since Mark Whitacre made various allegations against ADM and since the Department of Justice announced its investigation of alleged price fixing. The 72nd shareholders meeting was held on 19 Oct. 1995 in Decatur. Brief introductory remarks of Dwayne O. Andreas: He is "personally outraged that the apparent misconduct of one, two, or more individuals has cast such a cloud over this great corporation, which has more than 70 years of unblemished history." Mr Andreas has asked ADM's counsel, Richard P. Reising, to make a statement at this time which Mr. Andreas fully endorses.

Remarks of Mr Reising: On August 4, 1995 ADM terminated Mr Whitacre for the theft of at least \$2.5 million of Company property. ADM reported information concerning this theft to the Department of Justice, which convened a grand jury in the Central District of Illinois to investigate the alleged thefts. "The grand jury has received documents from

ADM relating to Mr Whitacre's thefts of up to \$9 million of ADM funds. The Department of Justice has confirmed that there is *no credible evidence* that Mr Whitacre's thefts were part of any plan by ADM to funnel compensation to its executives. ADM traced some of the funds that Mr Whitacre stole from ADM to a Whitacre Swiss bank account... The Swiss authorities instituted a criminal investigation of Mr Whitacre, and... froze Mr. Whitacre's accounts.”

Long statement by Honorable Brian Mulroney about the Justice Department investigation and ADM's response.

Consolidated statements of earnings. ADM's net sales and net earnings for the 3 months ended SEpt. 30 were up slightly compared with comparable figures from the same period one year ago.

Comments By James R. Randall, President, who notes that ADM's net worth has been doubling about every six years. How does ADM do it? By adhering to a few basic fundamentals of business. They stay lean and work hard to improve productivity. They stay in the one business they know: transporting, storing, processing, and merchandising of agricultural commodities and products. They invest heavily in their plants, making sure they have the most modern equipment and latest technologies to ensure their position as the lowest cost producer. They keep a good balance sheet with sufficient cash on hand to take advantage of any good business opportunities that may come their way. They make great efforts to recruit and train top management talent. "The best days for ADM are still ahead of us. Here are a few reasons. The world is starting the biggest surge in food demand in its history. Asia will go from 3 billion people eating 15 grams a day of meat, milk, and eggs to 4 billion people eating 55 grams of animal protein. China is increasing its meat consumption by 3 million tons per year. The same is true for much of the rest of the world... Our total daily processing capacity for all products is now nearly 6,000,000 bushels per day, of 160,000 tons per day. Partnerships in the U.S. and abroad will add another 15,000 tons." A graph shows the rapid growth in ADM's total processing capacity from about 90,000 short tons/day in 1986 to 175,000 tons/day in 1995 (with affiliations). During the last 5 years, ADM spent \$3.4 billion for construction of new plants, expansion of existing plants, and acquisition of new businesses. ADM is the world's largest producer of soy protein, and the only company that produces all the soy products: flour, grits, concentrate, and isolate. ADM is now doubling its isolate capacity with plants in the United States and Europe.

Comments by Dwayne O. Andreas, chairman of the board and CEO, at the 1995 annual meeting. He discusses ADM's recent history, growth, acquisitions, and alliances. Address: Decatur, Illinois.

1599. Jordaan, Elizabeth M.S. 1995. The use of soya beans in South African feeding schemes. Paper presented at the Third Bi-Annual SoyAfrica Conference. 3 p. Held 3-5 Oct.

1995 at Johannesburg, South Africa. Organized by Aproma.  
 • **Summary:** The paper begins: “The humble soya bean is known as the little giant of protein foods. It contains nutrients that make a poor diet good and a good diet better. It is indeed regarded as the wonder food of the future.” Yet it also possesses disadvantages: trypsin inhibitors, the polysaccharides raffinose and stachyose that cause flatulence, and “that unpleasant beany taste.” To make use of the good in soya beans, and eliminate the negative, “modern technology has come forward with new products—textured vegetable protein (TVP) and textured soya concentrate.”

“With a texture and appearance similar to that of animal foods, these soya products can be used as an extender or substitute for meat, fish and poultry.”

1. Ordinary households: The use of dried legumes, including soya bean products, has always been advocated by the Department. This is the one and only way for many households for many households to make ends meet.

2. Farming communities: Similar to that of ordinary households. 3. Industry: Soya is used in pies, polonies (like sausages) and spreads. 4. Institutions: Experience has taught that soya products are not very popular in the Western diet. The beany taste is probably the most important disadvantage.” It is best to use no more than 25% in any dish. “In the Correctional Services use is made of equal parts of mince and chunks in stews and other combined dishes. In the Defence Force the approach is to make use of fresh foods to as large an extent as possible. Soup powders are used as sauces in the non-Westernized diet and for soup dishes in the Westernized diet.” Soya products are also use in school boarding houses, provincial hospitals and in mining hostels.

5. Feeding schemes of the Department of health: Three programmes are discussed. “It is concluded that emphasis should once again be placed on the first category of users, namely the ordinary household. If children and young children are educated about the use of soya products at home, the chances are that these products would be much better accepted by the youth when offered in institutions as well as at a later stage in life.” Address: Dep. of Health, Pretoria.

1600. *Ontario Soybean Growers' Marketing Board Newsletter*. 1995. Soy crush expands. Oct. p. 4.

• **Summary:** There are only two soybean crushers in Canada, CanAmera Foods (in Hamilton, Ontario) and ADM Agri-Industries (in Windsor, Ontario). Both are investing millions of dollars to expand and upgrade their facilities. It is predicted that soybean crushing capacity in Canada will increase by 25%, to approximately 50 million bushels/year, when these improvements are finished in 1996. Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

1601. Roberts, Justin J. 1995. Trends in soybean processing and utilization. Paper presented at the Third Bi-Annual SoyAfrica Conference. 43 unnumbered pages. Held 3-5 Oct.

1995 at Johannesburg, South Africa. Organized by Aproma.  
 • **Summary:** This paper consists entirely of graphics (prints of overhead transparencies showing many charts and tables).

Background with regards to soy products in general: Healthy and nutritious, protein rich with all essential amino acids, rich in fibre, rich in vitamins and minerals, low in sodium and potassium, cholesterol free and low in fat, probiotic.

Typical soy products available in the RSA [Republic of South Africa]: soybeans, untoasted full fat soya flour, toasted full fat soya flour, micro-milled soya flour (100 mesh), soya mince (coloured or uncoloured)—tvp, textured soya concentrate—tsc (red crumble frozen), uncoloured frozen (coloured and uncoloured frozen chunks), soya chunks (coloured and uncoloured), soya isolate (90% protein), soya concentrate (70% protein).

Typical soya applications in the RSA (many are listed).

Soyabeans (defatted flake products): Food uses, industrial uses of soya flour and grits, soyabean meal (feed uses, industrial uses), soy isolate (edible uses, industrial uses).

Soyabeans (natural full fat products): baked soyabeans, seed, soyabean sprouts, stock feeds. Full fat soya flour (8 uses), roasted soyabeans (8 uses), soyabean derivatives (soymilk, tofu, miso, tempeh, etc.).

Oil products: crude soyabean oil (glycerol, fatty acids, sterols {stigmasterol, sitosterol, tocopherol, hormones}), refined soyabean oil (edible uses {9 uses listed}, medicinals, technical [industrial] uses {12 uses listed}), soyabean lecithin (edible uses {emulsifying agent, nutritional, stabilizing agent, surface active agents, anti-spattering agents, pan grease}, technical [industrial] uses {9 uses are listed}).

Soy products (7 benefits listed). Typical soy products available in South Africa (18 are listed again). Soya applications (Baking industry {7 benefits listed}). Appropriate technology (8 examples). Research needs (12 needs). Soybean research in the Department of Food Science, University of Pretoria (12 areas of research). Modified Intsoy method of making soymilk (to reduce oligosaccharides and urease, lipoxxygenase, and trypsin inhibitors). Small / micro and small to medium food enterprises (SMEs, problems and opportunities). Oligosaccharides are probiotic? (7 types of health promotion, 3 unknowns). Soya protein isolate by ultrafiltration (requires less water than usual isoelectric method). Future developments in the soya industry in RSA (turnkey soymilk plants, soy sprout mince, milk and flour, canned soybean products, okara in standard white or brown bread and/or biscuits, tofu).

Mopane or mopani from caterpillars / worms of *Gonimbrasia belina*. Address: Dep. of Food Science, Univ. of Pretoria, South Africa.

1602. Rocher, Joseph. 1995. A chronicle of the USA-Europe

conflict. What place for African producers? Paper presented at the Third Bi-Annual SoyAfrica Conference. 5 p. Held 3-5 Oct. 1995 at Johannesburg, South Africa. Organized by Aproma.

• **Summary:** Contents: Background. Europe vs. USA: the “Compromise.” The conflict within GATT. The world price for soya and indirect dumping. Developing soya production in Africa: actions at the macro level (1. Redefinition of Article IV of the GATT/WTO dealing with “dumping.” 2. Reform of the Common Agricultural Policy in the year 2004. 3. Right policies and agricultural protection in Africa).

This is a fascinating article expressing a viewpoint rarely heard in the USA by an expert on GATT; he has written in book titled *GATT in Practice* (1994).

“During the 1950’s European countries were rebuilding their few processing plants; they were also looking for alternatives to American soya. The Europeans continued to allow US imports, but only as a compromise, a trade-off which would allow the EEC to give better protection to Europe’s cereal production. In 1962, the six European member countries accepted a zero tariff on all US soya imports. as a direct result, the American pattern of protein consumption was allowed to penetrate European agriculture.”

“It was not until July 1973 that the US embargo on soya exports was announced with the Gatt permission: the Article XI of the agreement defines conditions under which quantitative restrictions on imports or exports are allowed. Under this article, a country facing a drastic reduction in agriculture production (due to a drought, for example) is permitted to forbid exports (impose an embargo), in order to maintain national market prices at a level acceptable to the consumer.”

“Towards the end of the 1970’s the European Community felt that it had made a mistake. In 1979, Brussels put a mechanism in place—a major new support programme for oilseed production within the Community which was designed to reverse the trend of growing dependency on American and, by now, Brazilian soya. The mechanism, rather than erecting import barriers, gave incentives to the processing industry to use European-grown raw materials. At the same time, the US dollar rose on the international currency markets. Cargill and other US-based traders (ADM, Central Soya, ConAgra, Anderson Clayton) tried to maintain downward pressure on the price paid to North American farmers. This resulted in tension within the producers lobbying organisation, the American Soybean Association (Southern US farmers, whose costs are higher, sought a ‘marketing loan’ which would cover the difference between the market price and a higher, subsidised price).

“In 1987, the American Soybean Association with government backing lodged a complaint in GATT (a second dispute panel on soya) in an attempt to condemn the EC practice of giving subsidies for oilseed crushing; the US

considered this a violation of the GATT Article III (National Treatment) which states that national and imported products must be treated on an equal basis.”

The EC responded again by making adjustments acceptable to the USA.

“In 1991, the EC proposed a new oilseed’s regime, based on direct compensatory payments to farmers, a subsidy mechanism inspired by US ‘deficiency payments.’ But Washington [DC] attacked the proposal on two counts: it was deemed to be a support to production, rather than an income support; and it was considered contrary to the concession granted to the US back in 1962 by the EC during the Kennedy Round of GATT... of zero tariffs for soya sold into Europe.”

“Finally, the ‘Washington Compromise’ (or ‘Blair House agreement’) of 20 November 1992, limiting the amount of European land for oilseeds to 5,128,000 hectares, seemed a solution to the soya dispute. The ‘Compromise’ also included a ceiling of 1 million tonnes of EC oilseeds for industrial use.”

“A major issue not properly treated during the Uruguay Round is the question of ‘indirect’ dumping. Soya is produced in the USA without subsidies. However, it is part of a crop rotation with two products (wheat and corn) which receive subsidies (deficiency payments). This situation creates an indirect subsidy system which puts soya on the world market at a price lower than the real cost of production. So we can consider that acceptance by the GATT/WTO of the deficiency payment has two major effects on African countries for their agriculture in general, for soya production in particular: deficiency system means that a major part of the agriculture policy is paid by the taxpayer (i.e., state budget) rather than by the consumer.”

However the article contains a number of errors concerning the history of soybean production in the USA. Address: Director of Rongead, 14 rue Antoine Dumont, Lyon Cedex 08, France. Phone: (33) 72 71 66 70.

1603. Bovard, James. 1995. Dole, Gingrich and the big ethanol boondoggle. *Wall Street Journal*. Nov. 2. p. A18, col. 3. Editorial page.

• **Summary:** Federal ethanol policy has long been driven by one company—Archer Daniels Midland. Ethanol is made by distilling corn into alcohol. It can also be mixed with gasoline to make gasohol, “a fourth rate fuel and federal and state subsidy magnet. Ethanol subsidies cost the federal government \$770 million a year in direct revenue losses. Ethanol producers have received a de facto subsidy of roughly \$10 billion since 1980. Senator Robert Dole is known in Washington, DC, as “Senator Ethanol,” but Colin Powell recently labeled ethanol a prime example of corporate welfare. Ethanol is first and foremost a farm welfare program, which inflates corn prices by about 22 cents a bushel.

“Ethanol also penalizes soybean farmers, who receive scant federal subsidies, because corn byproducts from ethanol production compete directly with soybeans.” Based on 1986 USDA estimates, the ethanol program currently depresses soybean prices by 12 cents a bushel—a loss of \$300 million to soybean farmers on their 1994 harvest.

A 1986 USDA report concluded: “Consumers would be much better off if they burned straight gasoline in their automobiles and paid a direct cash subsidy to farmers in the amount that net farm income would be increased by ethanol production.”

Ethanol has long been hyped as part of a national strategy of energy independence. But it routinely requires more energy to produce than it generates as a vehicle fuel. Moreover, since ethanol contains only about two-thirds as much fuel energy as gasoline, it guarantees worse gas mileage—leading drivers to buy more gasoline.

Supporters now tout ethanol as a substance which promotes clean air. But 1978 EPA and Department of Energy tests showed “substantial increases in evaporative hydrocarbon emissions” in cars using gasohol.

ADM produces roughly 60% of America’s ethanol, and roughly \$32 million (4.0%) of ADM’s fiscal 1995 profits of \$796 million came from ethanol. Last month Republican Bill Archer, chairman of the House Ways and Means Committee, sought to reduce and cap ethanol subsidies. However House Speaker Newt Gingrich loudly intervened and forbid any limit on ethanol handouts—thus making a mockery of his fervent promises to slash wasteful federal spending. “(Rep. Gingrich’s political [fund raising] organization, GOPAC, has received more than \$70,000 from ADM’s chairman, Dwayne Andreas.)

“The ethanol issue could win Iowa for Sen. Dole—and cost him much of the rest of the nation. He has received more than \$80,000 from Dwayne Andreas’s family and ADM since 1980, and is increasingly perceived as Mr. Andreas’ prize lapdog.”

1604. *Herald and Review (Decatur, Illinois)*. 1995. Obituaries: Macon County. William T. Atkinson. Nov. 9. p. A4. Central Illinois.

• **Summary:** “Decatur—William T. Atkinson, 84, of Decatur, died on Tuesday, Nov. 7, in St. Mary’s Hospital. “Funeral Mass will be 10 a.m. in Our Lady of Lourdes Catholic Church... Burial will be in Fairlawn Cemetery.

William Thomas was born Oct. 18, 1911, in Ontario, Canada, the son of Thomas P. and Eva Parson Atkinson. He retired in 1976 from Archer Daniels Midland Co. where he was senior research chemist. He was awarded the Food for Peace Award in Paris for the invention of Textured Vegetable Protein for ADM in 1968. He was a member of Our Lady of Lourdes and the 55 Club of the church and was past active member of the St. Vincent DePaul Society. He married Elizabeth Ann Scott in 1938.

“Surviving are his beloved wife, Elizabeth; son, Dennis W. Atkinson of Port Townsend, Washington; daughters, Mrs. Robert (Lois) Kessling of Cincinnati, Ohio; Mrs. Ralph (Mary Beth) Brock of Westchester; Mrs. Claude (Carol) Jones of Decatur; sisters, Mrs. George (Ruth) Sell of Palatine; Grace Korman of Booneville, New York. 14 grandchildren and one great-grandchild.

“He was preceded in death by his parents, daughter, Judith Ann Atkinson in 1939, brother, Fred Atkinson, and grandson Jerry Atkinson.”

A portrait photo shows William Atkinson.

1605. Blaze, Marci. 1995. Current prices of soy protein products (Interview). *SoyaScan Notes*. Nov. 13. Conducted by Walter J. Wolf of NRRC, Peoria, Illinois.

• **Summary:** Soy flour and grits 18-37 cents/lb. Textured soy flours 36-48 cents/lb. Soy protein concentrates 65-77 cents/lb. Textured soy protein concentrates 72-84 cents/lb. Soy protein isolates 132-169 cents/lb.

Note: ADM formerly made a soy isolate fiber product similar to PTI’s Fibrin but discontinued production in about 1993. Address: Archer Daniels Midland Co., Decatur, Illinois. Phone: (217) 424-7408.

1606. Gordon, Jonathan. 1995. Work with soyfoods in England and Australia (Interview). *SoyaScan Notes*. Nov. 16. Conducted by William Shurtleff of Soyfoods Center. [1 ref]

• **Summary:** Jonathan’s PhD thesis was titled “Improved lactic fermentation of soymilk for the preparation of soya bean curd,” a subject closely related to soy yogurt. He submitted this thesis in 1992 at the University of Strathclyde [Glasgow, Scotland], working under Brian Wood. When he was midway through writing his thesis, he won a *Monbusho* [Ministry of Education] scholarship to Japan. Just as he was preparing to go, he and his wife had a baby and he decided not to go. Prior to that the University of Strathclyde had applied for a patent on the process he discovered in his thesis. When he didn’t go to Japan, the university did not finish the patent application process. Its present status is unclear. He discovered how to do a lactic fermentation of soymilk that gave a good, low pH in a reasonable period of time. Brian Wood was an expert in lactic acid fermentations; he developed a 6-week miso and soy sauce process which he sold to Nestle. He was very unhappy with the outcome of this sale, because Nestle shut him out of involvement with the company. He expected to be actively involved with the company.

Jonathan’s interest in tofu goes back to the late 1970s. A native of England, he spent two years (1979-1981) at Findhorn, a spiritual community in Scotland, where he first heard of tofu and he helped to make tofu once a week. Jonathan thinks that Jacques (a French Canadian) started the tofu operation in Findhorn, before Jonathan arrived. Jacques and Allen (British) were making tofu in 1979 when Jonathan

was there. Each Thursday after dinner they would take over the kitchen and make about 30-40 lb of tofu, which was served in the communal dining room the next day. Jonathan left Findhorn in March 1981 and arrived in Australia in about July or August 1981. He traveled in Australia with a girlfriend (Karen James of California, who had just finished a professorship at UCLA) and they lived together at the Homeland Foundation in Upper Thora, Bellingen, New South Wales, where they made tofu with other members of the community. Karen also made tempeh. Upper Thora is a little town in the Bellingen (pronounced BEL-ing-un) valley. Some community members had already been making tofu for a long time before he arrived; the tofu company was a completely established local business, with customers and delivery routes, when he arrived. They made about 300 lb/week of tofu and delivered it themselves to nearby communities in insulated cold boxes (called “Eskis,” short for Eskimos) in a van. Homeland was also making tempeh at the time, but Jonathan was not a tempeh maker. He left Australia in 1982 to return to England.

In 1982 Jonathan became the foreman and tofu maker for The Regular Tofu Company (RTC) Ltd. in England, owned by John Holt. Jonathan was not with RTC when it started. John Holt was a “Premmie,” a disciple of Guru Maraji, the young guru from India. His tofu shop was located in a house adjacent to the Premmie community house or ashram. He converted the small community kitchen (about 14 feet square) into a tofu shop. It had 2 cauldrons and a grinder. This was John Holt’s private business; it was not a source of food and income for the Premmie community. John had a family at the time and he employed Premmies to do his work. At this time the tofu was made in a caldron. Guru Maraji came to that part of England many times. Leicester is one of the “Asian centers” of England; it has the largest immigrant population of any city in the country and there were 2 or 3 “Premmie” houses there. Maraji has a large Indian following, in addition to his Western disciples.

Jonathan also helped John Holt design his new factory in at Hayhill Industrial Estate (Unit 25, Sibley Rd., Barrow Upon Soar, Leicestershire LE12 8LD, England). into which Holt moved in about 1984. John Holt lived in Sibley, the town adjacent to Barrow Upon Soar.

Note: This company began making tofu in Dec. 1981 at 75 Chandos St., Leicester, LE2 1BU, England. In June 1984 (now located at 16 The Halcroft, Syston, Leicester, England LE7 8LD) they introduced 4 soy products under the Soyboy brand. John Holt had venture capital in the business, but they weren’t getting a sufficient return on their money so John had to sell the company to another rather small company named something like Rainbow (they were making soup and burger dry mixes), which later sold it to Haldane.

Jonathan probably has John Holt’s home address in Leicestershire. After Holt sold his business, he bought a franchise in a restaurant business (something like a pancake

house) in Northampton or Nottingham, England. Jonathan has heard of Michael Cole of Manchester, but he does not know whether or not Michael ever worked for John Holt. Cole won the Entrepreneur Award of something like £50,000, and that enabled him to build a factory. In the early days only two companies in England were distributing semi-nationally—John Holt’s and Michael Cole’s. Address: Director of Operations, White Wave Inc., Boulder, Colorado. Phone: 303-443-3917.

1607. Lang, Paul. 1995. Natural Products, Inc. in Grinnell, Iowa: History, products, and competition (Interview). *SoyaScan Notes*. Nov. 27 and 28. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Paul started making soy products in Grinnell, Iowa, in August 1995. His family, which owns a 3,000 acre farm there, also now owns this business. They hope to use it as a way of adding value to the soybeans they grow. They do not presently make the roasted soy fiber or the enzyme active soy fiber shown in their ad in *Soya Bluebook Plus*. These two products were basically unground soy hulls, and some bagel companies used them. Some American bakers buy soy hulls to add dietary fiber to their baked goods. He cannot begin to compete with Fibrim made by Ralston Purina. The oil crushers in his area are dumping semi loads of soy fiber on the market for about \$0.05 to \$0.08 per pound. Paul’s family bought a Cargill animal feed mill in Grinnell; it was worth \$700,000 (for just the buildings) but Cargill had abandoned it, so they were able to buy it for \$52,000. Paul is very interested in identity-preserved soybeans and he has 34 different bins to keep each variety separate. He thinks the future of soyfoods lies in identity preservation. For example, he now uses a low-flatulence soybean to make his soy flour—and his is the only company doing this.

Clofine, located just outside of New York City, buys Paul’s products (both enzyme active and inactive roasted whole soy flours) and re-sells them. They are almost like a broker. Using a patented process, Clofine slurries the enzyme active (raw) flour with water (probably hot water) then spray dries it, under high pressure through a small orifice. Ed Pedrick helped to develop this method. After that, Paul does not know how the product is processed, and how they get from soy flour to “spray-dried tofu.” He does not know if any coagulant is added, and what is the justification for calling it tofu. He views it as simply a water-soluble soybean flour, with a low PDI. It will hold up in suspension when mixed with water to make soymilk. Paul also sells to Devansoy, where Mr. Pedrick now works full time and makes the same spray-dried product. Devansoy sells the product both under their own trademark and as a raw material for use by other food processors. Both Clofine and Devansoy sell these spray-dried products for about \$1.35 per pound; they buy the flour from Paul for about \$0.35/pound. If Paul developed a very finely ground soy flour, he could probably take away that

market. They sell the roasted flour to bakers in New York City.

In terms of particle size, the smallest is flour, then meal, then grits, then granulers [he coined this phrase], then splits. The big crushers such as ADM and Cargill sell fairly coarse “grits.” Generically, the grits go to bagel companies—and he does not know why. The granulers and splits are not presently being sold. His main products are the enzyme active full fat flour, and the lightly roasted inactivated full-fat flour. Paul is working closely with the American Institute of Baking (AIB). Paul also sees a huge potential export market. Address: Natural Products, Inc., 798 Hwy 6, Grinnell, Iowa 50112. Phone: 515-236-0852.

**1608. Product Name:** Realeat VegeSteak.  
**Manufacturer’s Name:** Haldane Foods Group.  
**Manufacturer’s Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 1908 211311.  
**Date of Introduction:** 1995 November.  
**Ingredients:** Soy protein.  
**New Product–Documentation:** Spot in Soyfoods (ASA, Europe). 1996. Spring. p. 4. “New products from Haldane Foods Group.”

**1609. Product Name:** Realeat Meatless Chili, Meatless Bolognese, or Meatless Curry.  
**Manufacturer’s Name:** Haldane Foods Group.  
**Manufacturer’s Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 1908 211311.  
**Date of Introduction:** 1995 November.  
**Ingredients:** Soy protein.  
**Wt/Vol., Packaging, Price:** 300 gm tub. Retail for £0.99 (11/95 England).  
**How Stored:** Frozen.  
**New Product–Documentation:** Spot in Soyfoods (ASA, Europe). 1996. Spring. p. 4. “New products from Haldane Foods Group.” This is a new range of microwaveable frozen ready meals in tubs, based on VegeMince and VegeSteak.

**1610. Product Name:** Realeat VegeBites.  
**Manufacturer’s Name:** Haldane Foods Group.  
**Manufacturer’s Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 1908 211311.  
**Date of Introduction:** 1995 November.  
**Ingredients:** Soy protein.  
**Wt/Vol., Packaging, Price:** 454 gm bag. Retail for £2.49 (11/95 England).  
**How Stored:** Frozen.  
**New Product–Documentation:** Spot in Soyfoods (ASA, Europe). 1996. Spring. p. 4. “New products from Haldane Foods Group.” This is a non-meat version of chicken

nuggets.

1611. Caton, Greg. 1995. New developments at Lumen Foods (Interview). *SoyaScan Notes*. Dec. 6. Conducted by William Shurtleff of Soyfoods Center.  
**• Summary:** In Oct. 1995 Greg started his own TVP plant, which is making his new “Reverence” line of products. He used to buy the extrudite (textured soy flour) from either ADM or Central Soya. He would wash it to remove all of the oligosaccharides (which usually cause flatulence), then flavor it, oil it, cook it, dry it, mix it, etc. He does not use organic soybeans, because he finds that customers are not willing to pay for the end product, which is about twice as expensive. However by putting the product through a multiple washing cycle and using purified water than has been ionized and run through a carbon filter, he partially compensates for the non-organic soybeans.

Greg has at least two private label customers: Spice of Life in California, and Dr. Marvin Goldberg, an M.D. in Michigan who buys in container loads. Greg uses a slightly different formula when making these products for Spice of Life. In place of soy sauce he uses Bragg’s Aminos, which is powdered HVP supplied by A.E. Staley Mfg. Co. in Decatur, Illinois, reconstituted in water by Paul Bragg’s daughter in Santa Barbara, California, and sold at high prices as Bragg’s Aminos. Greg admired Paul Bragg, who had an impeccable reputation. Bragg died tragically roughly 5 years ago at about age 95 while swimming off the coast of Florida; he was caught in an undercurrent and drowned. He was Jack LaLanne’s mentor and he followed Vivekananda.

Last year meat analogs [alternatives] were the single fastest growing category in the health food trade. For the last three years Lumen has experienced a growth rate of 50% a year in their mail order business. Mail order is currently about 40% of the company’s total business; it used to be about 5%. His company is almost becoming a mail-order company, like Harvest Direct.

Greg is a computer programmer and he designed his own site on the World Wide Web. He is a “webmaster” and knows HTML and Java script, which allows things to move on a Web page. He is now spending a great deal of time developing Veggie Net as part of his web site; it will contain pictures with accompanying quotations related to vegetarianism. Address: President, Lumen Food Corp., 409 Scott St., Lake Charles, Louisiana 70602-0350. Phone: 318-436-6748.

1612. Straus, Karen Cope. 1995. At home with the McCartneys: Share the season’s best with Paul and Linda. *Vegetarian Times*. Dec. p. 41-45.

**• Summary:** This is largely a selection of lacto-vegetarian recipes from two of Linda McCartney’s popular vegetarian cookbooks. Ingredients include TVP granules, soymilk, and soy sauce. Her first cookbook, *Linda McCartney’s*

*Home Cooking*, remains “one of the best-selling vegetarian cookbooks published to date.” Several nice color photos show Paul and Linda.

1613. Nguyenle, T.; Wang, W.; Cheung, A.P. 1995. An investigation on the extraction and concentration of isoflavones in soy-based products. *J. of Pharmaceutical and Biomedical Analysis (Oxford)* 14:221-32. \*

• **Summary:** Gives levels of daidzein and genistein in Infant formulas: Isomil (ready to feed), Nursoy (liquid concentrate), Prosobee (liquid concentrate). Soy flours (Central Soya–Soyaffuffy), Centex, Promax, Promax plus, ADM–Nutrisoy, TVP, Acron-F, Acron-S, Cargill Protein Products -200/20, 200/70, Arrowhead, Molly Farm, Sun Ridge Farm, Soy drink, Tempeh, Soy protein concentrates (Procon, Promine), TVP (Response).

1614. Wendel, Armin. 1995. Lecithin. In: Martin Grayson, executive editor. 1995. Kirk-Othmer: Encyclopedia of Chemical Technology, 4th ed. New York: John Wiley & Sons. See Vol. 15, p. 192-210. A Wiley-Interscience Publication. [51 ref]

• **Summary:** A comprehensive treatment of lecithin. Contents: Introduction. Physical properties. Chemical properties: Hydrolysis, acyl side-chain reactions (hydrogenation, hydroxylation, autoxidation), browning reactions, other reactions of phospholipids. Manufacture and processing (Crude soy lecithin is a by-product of the degumming process of soy oil: The phosphorus-containing compounds are removed to improve the stability of the oil. Only a small percentage of the total lecithin that is potentially available in plant-oil processing is actually produced). Purification processes. Commercial grades. Economic aspects. Specifications and standards: Food Chemical Codex, U.S. Pharmacopeia (USP XXII), European Community. Analytical and test methods. Health and safety factors. Uses: Animal feed, baking products, candy / confections (incl. chocolate), cosmetics and soaps, food (dehydrated foods, ice cream, macaroni and noodles, margarine, edible oils and fats, inks and dyes), liposomes (See Note 2), paints, petroleum products, pharmaceuticals, plant protection, plastics, release / antisticking agents, elastomers (in rubber), textiles. Bibliography.

Tables: (1) Categories of commercial lecithin, Broadly divided into natural, refined, and modified. And into plastic and fluid. Within the natural category is unbleached, bleached, and double-bleached. Within the refined category is deoiled and fractionated (subdivided into oil-soluble and alcohol-soluble). Within the modified category, lecithin can be physically, chemically, or enzymatically modified.

(2) Compositions of lecithins, oil-free basis, %. The phospholipid composition of 7 types of lecithin is given: Soybean lecithin, corn lecithin, sunflower seed lecithin, rapeseed lecithin, peanut lecithin, egg lecithin, bovine

brain lecithin. Egg lecithin has the highest content of phosphatidylcholine (PC) at 69% compared with only 21% for soybean lecithin. Soybean lecithin [the most widely used commercially worldwide] contains:

phosphatidylcholine (PC) 21%  
phosphatidylethanolamine (PE) 22%  
phosphatidylinositol (PI) 19%  
phosphatidic acid 10%  
phosphatidylserine 1%  
sphingomyelin 0%  
glycolipids 12%

(3) Fatty acid composition of oil-free lecithins, %.

Soybean lecithin is 58.0% linoleic acid.

(4) Composition of commercial soy lecithin and egg lecithin. In addition to diluted percentages of the basic phospholipids such as PC 10-15%, PE 9-12%, PI 8-10% etc it also contains:

lysophosphatidylcholine 1-2%  
lysophosphatidylethanolamine 1-2%  
phytyglycolipids 4-7%  
phytostearines 0.5-2%  
other phosphorus-containing lipids 5-8%  
sphingomyelin 0%  
saccharose 2-3%  
free fatty acids max 1%  
mono-, diglycerides max 1%  
water max 1.5%  
triglycerides [soybean oil] 35-40%.

(5) Solubility of lecithin and various phospholipids.

Shows which of six are soluble or insoluble in hexane, benzene, ethanol, and acetone. All but the last are *not* soluble in acetone, which is why acetone is used to separate out lecithin from soy oil. The six are:

lecithin  
phosphatidylcholine  
phosphatidylethanolamine  
phosphatidylinositol  
phytyglycolipid  
lysophospholipids. Note: lysophospholipids are soluble in water; the others are dispersible in water.

(6) Commercial lecithins, % composition. The six commercial lecithins are: Crude, deoiled, alcohol-soluble fraction, alcohol-insoluble fraction, PC 70%, PC 90%. Various trademarks for each are given, owned by ADM, America Lecithin Co. (ALC), Central Soya, Nattermann Phospholipid GmbH, and Riceland.

(7) Commercial lecithin potential from vegetable oils. The 6 vegetable oils are soybean, sunflower seed, rapeseed, cottonseed, peanut, corn. The 3 columns for each type of oil are: World production (million tons, 1991-92), hydratable lecithin %, lecithin yield (metric tons). For soybean oil the 3 columns are: 16.44 million tons, 2.2%, 361,680 tons lecithin yield.

(8) Lecithin world production. The 6 types of lecithin

are: crude lecithin, deoiled lecithin, phospholipid fraction PC 35, phospholipid fraction PC 70, phosphatidylcholine > 90. They are ranked from the least expensive to the most. For each is given: World capacity (metric tons). Average sales price, \$/kg. Crude lecithin sells for \$0.62 vs. deoiled lecithin for \$4.40 (7 times as expensive).

(9) U.S., British, Japanese, and European specifications for lecithin purity.

Figures: (1) Chemical structure of phosphatidylcholine (PC) and other related phospholipids.

(2) Flow sheet for a lecithin production unit; each step is described.

(3) Flow sheet for continuous deoiling of soy lecithin (with acetone); each step is described. (4) Flow sheet for batch process for producing phosphatidylcholine fractions; each step is described. (5) Flow sheet for continuous process for producing phosphatidylcholine; each step is described.

Note 1. Rhône-Poulenc was a French chemical and pharmaceutical company founded in 1928. In 1999 it merged with Hoechst AG to form Aventis. As of 2015, the pharmaceutical operations of Rhône-Poulenc are part of Sanofi and the chemicals divisions are part of Solvay group and Bayer Crop Science.

Note 2. A liposome is a spherical vesicle having at least one lipid bilayer. The liposome can be used as a vehicle for administration of nutrients and pharmaceutical drugs. Liposomes are most often composed of phospholipids, especially phosphatidylcholine. Address: Rhône-Poulenc Rorer, Germany.

1615. Eichenwald, Kurt. 1996. Big board room shift will bring in outsiders. *New York Times*. Jan. 16. p. C1, C4. Business section.

• **Summary:** ADM is responding to widespread criticism of insider domination of the company's board by approval of a series of proposals that would turn majority control of the board over to a group of outside directors.

The proposals stipulate that several of the current 17 directors would not be able to stand for re-election at the next annual meeting of ADM in the fall.

But some large investors have said that such changes do not go far enough. "The recommendations were presented in a report by a corporate governance committee formed at the last annual meeting in October."

Said Ray A. Goldberg, professor of business at Harvard University, who helped lead the governance committee, "The board has accepted the report unanimously and approved every proposal without exception. This makes A.D.M. consistent with the best governance procedures of all major corporations in the United States."

"Still little change is expected anytime soon at the company..." because of its strong-willed chairman, Dwayne Andreas. Yet Mr. Andreas said clearly that the report and recommendations have his "strong support."

1616. Weiner, Tim. 1996. It's Dwayne's world: Archer-Daniels' influence is wide and deep. *New York Times*. Jan. 16. p. C1, C4. Business section.

• **Summary:** Contents: Introduction: Tax breaks and subsidies. Congress questions ethanol subsidy. A market created by the government (corn syrup). A hard competitor under scrutiny. A staunch capitalist in a 'Socialist' milieu (referring to farm programs). "Washington, DC, Jan. 15–Lately, Dwayne O. Andreas and the Archer-Daniels-Midland Company have been through a hailstorm of bad news—price-fixing investigations, corruption charges, shareholders' wrath. But the agricultural giant's feisty chairman pays it no more mind than a Kansas farmer does a passing squall.

"Mr. Andreas shouted down dissident investors at Archer-Daniels's annual meeting last fall and ignored inquiries about allegations of embezzlement at the company's highest levels. When a questioner cited Robert's Rules of Order, Mr. Andreas cut him off, saying, 'The meeting, sir, runs according to my rules.'

"Here in Washington, Mr. Andreas has been making his own rules ever since he walked into the Nixon White House in 1972 with an envelope stuffed with one thousand \$100 bills. At 77, he is an acknowledged master at the art of amassing political influence. That, along with Archer-Daniels's growing mastery of the agricultural marketplace, has been a shelter in the storm."

A large photo shows Dwayne Andreas. An illustrated diagram shows how federal policies create an artificial market for corn sweetener, which is used as a substitute for sugar. These quotas and price supports costs the U.S. about \$3 billion a year.

A table shows ADM's political contributions from Jan. 1991 to June 1995. Total: About \$3 million.

1617. McCord, Holly. 1996. Savor the new white-hot superfood. Way, way beyond the usual tofu: 7 easy, tasty ways to get "soying." *Prevention (Emmaus, Pennsylvania)*. Jan. p. 79-83.

• **Summary:** The article begins: "Finally, soy's so hot it's smokin'! After years of neglect, mounting studies now suggest that soy foods help us dodge the big ones—heart disease and breast and prostate cancer. Maybe even osteoporosis... But in the United States, where we grow half the world's soybeans and then feed 'em mostly to chickens, the idea of soy for dinner somehow doesn't cut it. Fear of tofu—a white, spongy, soybean curd that most of us don't have a clue how to cook with—runs deep.

"If this describes you, relax! We've discovered seven surprisingly gentle ways to get you started with soy. They're all delicious and supereasy—foods even soybean sissies can relate to." 1. Pour soy milk on your cereal. 2. Whip up tofu blender smoothies (using Mori-Nu Silken Lite Firm Tofu—aseptic pack). 3. Make chocolate pudding no one can resist

(using Mori-Nu Silken Lite Extra Firm Tofu). 4. Add “Sweet Beans” [green vegetable soybeans] to your repertoire. 5. Indulge in healthy Sloppy Joes (add TVP to a can of Sloppy Joe sauce and serve on a bun). 6. Go Nutlettes! The only ready to eat soy breakfast cereal made from a TVP you don’t rehydrate. Order by phone from Dixie USA, Inc. 1-800-347-3494. 7. Drink soy protein beverages (such as Take Care. Order by phone from Nutritious Foods, Inc., 1-800-445-3350).

A sidebar discusses why soy is white-hot: Soy protein lowers high cholesterol. Soy isoflavones may beat breast and prostate cancer. Because soy protein causes less calcium excretion from the body than does animal protein, it may reduce osteoporosis. “Also, soy isoflavones may help slow down bone loss after menopause and relieve symptoms such as night sweats and hot flashes.” Address: R.D.

1618. Ornish, Dean. 1996. *Everyday cooking with Dr. Dean Ornish: 150 easy low-fat high-flavor recipes*. New York, NY: HarperCollins Publishers. xix + 344 p. Index. 24 cm. [6 ref] • **Summary:** This is Dr. Ornish’s 4th book. Recommends low-fat vegetarian meals. Organized into 45 seasonal menus with “recipes that use inexpensive, commonly found ingredients and follow easy time-saving steps.”

The opening chapter, “Choices made easy,” has the following contents: Why I wrote this book (in response to thousands of letters he receives each year). Delicious and nutritious. Low fat, high flavor (He has commissioned some of America’s most celebrated chefs to work within his guidelines and see what they can create. Dr. Ornish and his team have “trained the chefs at the White House, Camp David, the Navy Mess, and on *Air Force One* who cook for President and Mrs. Clinton. We’ve learned what works”). Beyond heart disease (to improving the quality of your life right now; you will feel so much better!). Good nutrition is easy (If you drink, limit it to one drink per day. “Reducing salt is a good idea for everyone, but its most important if you have high blood pressure, kidney disease, or heart failure”) The Life Choice Program (“which also includes moderate exercise, stress management training (stretching, breathing, meditation, visualization, and relaxation techniques), smoking cessation, and psychosocial support... this is a diet and lifestyle program based on (1) the joy of life, not the fear of death, and (2) choice, not coercion”). Why a plant-based diet? (“Cholesterol is found only in animal products, which also tend to be high in saturated fats”). Eat more complex carbohydrates, weigh less. Why 10 percent fat? (recommends 10% of calories from fat. The average American diet has about 40% of its calories from fat. You can eat nonfat dairy, egg whites, but no added oil). Why so little cholesterol? (Your dietary requirement for cholesterol is zero). What is the cause? (His program addresses the cause of the problem rather than trying to get rid of the symptoms). Big changes are easier than small ones (First, you fell so much better

so quickly. Second, your palate adjusts quickly so that you prefer low-fat foods. Fat is an acquired taste, not one of the four basic tastes).

Soy related recipes: Vegetable broth (“Experiment with salad dressings made with soft tofu or nonfat yogurt,” p. 18-19). Roasted onions (For heightened taste, use soy sauce, Japanese miso, etc., p. 22). Supermarket tips and traps (“Tofu is sometimes in the produce section, sometimes in the dairy case.” Take it from the dairy case if you have a choice; the colder temperature keeps tofu fresher, p. 35). Miscellaneous (“Soymilk in aseptic cartons has a long shelf life before its opened. Use it as a cholesterol-free alternative to nonfat cow’s milk,” p. 39). How to cook legumes (Soybeans contain about twice as much protein as other beans and are a good source of omega-3 fatty acids. Their protein is complete protein, and has been show to lower blood cholesterol levels. For smart ways to incorporate more soy foods into your diet, see p. 313. Two servings a day {½ cup each} from the legume group are ideal, p. 41). Section on “Meat substitutes” (p. 56-57) mentions soy protein, wheat gluten, tofu, etc. “One of the most popular meat substitutes is Textured Vegetable Protein, or TVP.” It is made from defatted soy flour and is sold in various flavors and shapes. “The Boca Burger ‘No Fat Original’ used in some recipes in this book is made from defatted soy protein...” The section on Miso (p. 57) notes that it “adds nutty flavor to soups, stews, and dressings.” The section on tofu (p. 58) describes the many types, their uses and nutritional value. Creamy coleslaw (with “Creamy tofu dressing,” p. 164-65).

The section on “Commonly asked questions about the Reversal Diet” (p. 306+) has a subsection titled “Since soy products are high in fat, how much can I have?” which begins (p. 313): “Soybean products have no cholesterol and supply essential fatty acids and are an exception to the guideline of no more than 3 grams of fat per serving. However use good judgment... a good rule of thumb is to stay within 4 ounces tofu or 2 cups soy milk per day. Soy milk—the rich creamy product of soybeans ground with water—is an excellent cholesterol-free alternative to cow’s milk. It is available plain and flavored, in a range of fat contents.”

“Will I get enough protein on the Reversal Diet?” (p. 314-15) begins: “Americans tend to be overly concerned about getting enough protein. In fact, meat eaters tend to get too much. Eating too much protein, especially animal protein, can increase your risk of cancer, diabetes, and heart disease... and may lead to osteoporosis.”

“Where do I get protein on the Reversal Diet?” (p. 315) begins: “The body’s protein requirement is about 50 grams per day for women and about 60 grams for men.” “Good sources include beans and peas, including soy milk and tofu.”

On the same page under “combining proteins”: “(The soybean is the only plant food with enough of all the

essential amino acids to be considered a complete protein).”

The recipes in this book were developed by Janet Fletcher, Jean-Marc Fullsack, and Helen Roe. The Boca Burger is called for in many recipes (p. 57, 177-78, 194-95, 237-38). Address: M.D., President and Director, Preventive Medicine Research Inst., 900 Bridgeway, Suite One, Sausalito, California 94965; Asst. Clinical Prof. of Medicine, School of Medicine, Univ. of California, San Francisco. Phone: 415-332-2525.

1619. The Mail Order Catalog. Spring-summer 1996. Catalog of books and food. 1996. P.O. Box 180, Summertown, TN 38483. 24 p.

• **Summary:** The book section of this mail order catalog contains listings for an excellent selection of vegetarian and vegan cookbooks, plus books on food nutrition & health, alternative healthcare, women’s healthcare, native Americans and their cultures, and animal rights.

The vegetarian food products section offers TVP granules and chunks, Response textured soy protein concentrates (misleadingly called “Response TVP flakes”), Harvest Direct vegetarian broth, and Protean, instant gluten flour (regular or flavored), seitan “chicken” or “sausage” mix, Mori-Nu silken tofu, Soja instant soy beverage, organic low-fat soymilk powder, Red Star nutritional yeast, Beano, and tempeh starter. Address: Summertown, Tennessee. Phone: 800-695-2241.

1620. Holt, Stephen. 1996. New developments with commercialization of soy isoflavones (Interview). *SoyaScan Notes*. March 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Dr. Holt’s first soy product, Genista (pronounced juh-NIS-tuh), is now on the market. It is basically a soy protein isolate that contains about 2 mg/gm of isoflavones; no isoflavones are added to the product. Genista was just presented yesterday to a large meeting of Midwest cardiologists, and there was enormous interest in the product. The soy protein is much better than Mevacor, a drug used to lower cholesterol, that has many undesirable side effects. Combining James Anderson’s meta-analysis studies and his own research, Dr. Holt decided that 30 gm of Genista would lower blood cholesterol by 20-30% over a period of 3-6 months as an adjunct to a low-cholesterol diet. His company is trying to be very responsible in the way they market the product, together with lifestyle changes. They market a health plan, so as not to give consumers a false sense of security.

Take Care, sold by Protein Technologies International, contains anywhere from 0.68 to 2.39 mg/gm of isoflavones; no isoflavones are added. But PTI has not come out with a recommended dose in a format that will lower blood cholesterol. Bodybuilders consume up to 6 gm of protein per kg of body mass. Apparently if they take this protein as

soy protein it seems to be efficiently handled, which is quite interesting. Protein Technologies International is conducting a study with Romanian athletes; they are measuring urinary mucoproteins, which are some indicator of efficiency of renal handling.

Genista is based on his own research and that of Dr. James Anderson, which says that if you consume 30 gm of a soy protein isolate containing a standardized amount of isoflavone, you will lower your cholesterol. He has quite good early success. He has a joint venture with Charles Day, PhD, of Kentucky who has developed an agricultural process for making almost pure isoflavones from soybeans. They have just received investment money from Japan to turn this into a large-scale commercial process. The cost of the key piece of equipment is about \$6-8 million. They use a proprietary technique and a patented heat-tank solvent extraction process to process partially defatted lightly heat treated soybean meal (usually used for chicken feed) to extract the isoflavones, which are lipophilic. From 4 tons of the meal he can extract 1 kg of isoflavones of 85% purity; they are composed mainly of genistein. As far as he knows, his is the only company in the extracting isoflavones commercially, and enriching products with isoflavones. He has about \$6 million of orders on paper for isoflavones from a variety of nutraceutical manufacturers. Why isn’t a big company like ADM doing this? “They are looking at it, but they haven’t got the science right or the process; we have.”

His second product will be Genista-Plus, which will contain 20 mg/gm of isoflavones and will be enriched with isoflavones. Another product, Phyto-Est, will contain 25 mg/gm of isoflavones; it has come out of the joint-venture agreement with Charles Day and the Japanese. It will on the market as soon as they can get a label on it. These products will be sold in double-oh capsules. The capsules of Phyto-Est are already made.

The Italian National Health Service has been giving out soy protein isolate as a free item in their health care preventive approach, mostly to people with kidney (renal) failure who tend to have high cholesterol levels. It has been shown repeatedly in that experience to be quite effective. In addition, soy proteins lower blood pressure, improve renal efficiency and renal handling, and promote calcium retention—which in turns lowers blood pressure.

Dr. Holt says Twin Laboratories is now selling a product named “Twinlab Genistein.” In Jan. 1996 Dr. Holt began publication of a new periodical titled *Nutraceutical News International: An information source on natural remedies*. He is Editor in Chief and president of Natus, Inc., New York. His portrait appears on the front page. Stephen Yaskin, M.S., is editorial editor. To subscribe, send \$19.95 for 6 issues, payable to Natus, Inc., 200 Clearbrook Rd., Elmsford, NY 10523.

Note: This is the earliest document seen (Sept. 2001) that contains statistics about the soy estrogen industry and

market. Address: M.D., Natus Inc., 2388 28th Street, Long Island City, New York 11105. Phone: 718-721-1496.

1621. Feder, Barnaby J. 1996. Out of the lab, a revolution on the farm: New genetic weapons to battle bugs and weeds. *New York Times*. March 3. Section 3 (Money & Business). p. 1, 11. Sunday.

• **Summary:** “Biotechnology is leading to a revolution in farming by allowing genetic characteristics to be transferred selectively from one species to another.” A petunia gene now protects soybean plants from Monsanto’s powerful Roundup herbicide, allowing farmers to spray more Roundup herbicide on “Roundup-Ready” genetically engineered soybeans. (Note: Roundup has been used and recommended for use on soybeans since the early 1980s). Farmers pay a licensing fee of \$5 a bag—in addition to the cost of the seeds. Limited varieties are available from Asgrow Seed Company. Farmers are hoping that Roundup-resistant soybeans will reduce their reliance on costlier and more hazardous chemicals. Under the licensing agreement, farmers must promise not to sell or give away any seed or to save any for planting next year. They must use Roundup herbicide (made by Monsanto) and allow inspections by Monsanto officials. Monsanto and Asgrow are working together closely on the project. But many soybean farmers are worried about planting Roundup-resistant soybeans because the European Union has not yet agreed to allow them to be imported. Trade negotiators and major exporters such as ADM are confident the problem will disappear by harvest time, in part because they have the backing of European scientific reviews.

Similar goals are being pursued using traditional breeding technologies. Selective breeding of mutant soybeans, for example, allowed Du Pont and scores of seed companies to develop popular soybean lines that tolerate Du Pont’s powerful Synchrony herbicides, such as Asgrow’s soybeans tolerate Roundup. First marketed in 1993, Synchrony-resistant crops could cover as many as 5 million of acres of farmland this year.

The genetic engineering revolution began in the mid-1970s when scientists discovered an easy way to make copies of the genes, and then to move them among species. The results of genetic engineering, known as “transgenic” products, first showed up as niche items like Calgene Inc.’s Flav’r Sav’r tomatoes that were designed to ripen more slowly and thus arrive fresher at supermarkets, and a bacterially produced version of an enzyme used in cheese production that previously had to be extracted from a calf’s stomach. “This spring, though, the gene-shifting technologies will finally burst out of the nation’s laboratories and test plots and into everyday farming of crops like corn, soybeans, and cotton.” Now the payoff begins. Ciba-Geigy and Mycogen have spliced a gene from the common bacteria *Bacillus thuringiensis*—known as Bt—into Maximizer brand corn seeds. The seed then produces a protein hitherto found

only in bacteria, and this protein kills the European corn borer. Cotton seeds containing the BT gene kill bollworms and tobacco budworm while raising crop yields 15-20%. “Coming soon will be corn or soybeans with higher oil or protein content to make them more valuable as animal feed, and colored cotton that will reduce the need for chemical dyeing.”

The spread of genetic engineering into big commodity crops will be a major test of its potential to help feed a world that is expected to double its population over the next 40 years. “Experts say at least half of the acreage of the nation’s major crops will be covered with plants harboring a foreign gene early in the next century.” Executives at Pioneer Hi-Bred International, America’s largest seed company, think the new developments may be as important for agriculture as the first plow. Pioneer expects transgenic product to account for one-third to one-half of its product lines by the year 2000. “Other powerful new technologies are also converging on farming, like computerized mapping of soils and yields, and the use of satellites to precisely position planters’ sprayers and other equipment.”

But critics fear that the nation is lurching recklessly toward a series of giant environmental experiments that could backfire. The hottest area of debate is insect-resistant crops. The worry is that insects and weeds will quickly build up resistance to the transgenic plants and pesticides used in conjunction with them, possibly leaving farmers worse off than before—after a short burst of productivity.

1622. Smith, Michelle. 1996. Re: Membership letter for Soyfoods Association of America. Letter to William Shurtleff at Soyfoods Center, March 6. 3 p. Typed, with signature on letterhead.

• **Summary:** The letter begins: “The demand for soyfoods continues to rise and the top certainly isn’t in sight.” Discusses two main marketing projects undertaken by SAA in 1995: A 125+-page market study titled *A Consumer Profile of the Soyfoods Shopper*; and preparations for National Soyfoods Month in April 1996. “The concept of Soyfoods Month has been carefully researched and developed over the past year by a special committee of representatives from Archer Daniels Midland, Vitasoy, Nasoya, the American Soybean Association, and our public relations firm, the Shelton Foley Group.”

What’s in store for 1996? Programs that promote soyfoods to a broader, mass market audience. SAA exhibit at the American Dietetic Association Annual Meeting for the third year in a row. “We are pursuing opportunities to exhibit soyfoods at supermarket, foodservice, and restaurant trade shows. Our public relations firm will continue to aggressively target the natural foods and mass media trade.”

There are three member categories with a range of dues: Producers and marketers: \$3,000 to \$250. Suppliers: \$450. Industrial/professional: \$350. Address: P.O. Box 3179,

Walnut Creek, California 94598. Phone: 510-935-9764.

1623. Andreas, Dwayne. 1996. Re: Proposed changes in Board of Directors. Letter to shareholders, March 21. 2 p. Typed, with signature on letterhead.

• **Summary:** Last year, in response to a crisis in the company, ADM formed a special committee of outside directors to thoroughly review ADM's corporate governance. "In January, as previously announced, ADM adopted the committee's recommendations that the full Board, as well as committees, should be made up of at least a majority of outside directors."

"Accordingly, the members of management, including James R. Randall, President, H.D. Hale, Chairman, ADM Milling Company, Martin L. Andreas, Senior Vice President, and Michael D. Andreas, Executive Vice President, who are now Directors will not stand for reelection to the board this year. This will create four vacancies which will be filled with independent outside Directors in due course. In addition, two or more current directors may choose not to stand for reelection, and ADM will have the option to replace them at some future time or reduce the size of the Board." Address: CEO, Archer Daniels Midland Co., P.O. Box 1470, Decatur, Illinois 62525.

1624. Burton, Thomas M.; Kilman, Scott. 1996. FBI videotapes are part of evidence in antitrust inquiry on Archer-Daniels. *Wall Street Journal*. March 27. p. A6. Monday (West).

• **Summary:** The two videotapes, recorded secretly, show senior agricultural-company executives, meeting in Los Angeles (California) and Hawaiian hotel rooms.

1625. Cohen, Laurie P. 1996. Feed fight—Tough battle looms as ADM lawyers plot price-fixing defenses: Prosecutors have videotapes but few live witnesses against Andreas's firm. 'Can't afford to plea guilty.' *Wall Street Journal*. March 27. p. A1, A6. Monday (West).

• **Summary:** The government has told ADM lawyers that Dwayne Andreas, age 77 and ADM's chairman, is not currently a target of this investigation. One of the key suspects is Michael D. Andreas, son of Dwayne Andreas and, "at least until recently, his likely successor.

An illustration shows Michael D. Andreas.

1626. **Product Name:** GranoVita Deluxe Soya Yoghurt [Natural, Black Cherry, Strawberry, or Peach & Apricot]. **Manufacturer's Name:** GranoVita UK Ltd. (Marketer-Distributor). Made in Germany by DE-VAU-GE Gesundkostwerk GmbH.

**Manufacturer's Address:** Granovita UK Ltd., Ambron House, Eastfield Road, Wellingborough, Northants NN8 1QX, UK. DE-VAU-GE, Luener Rennbahn 18, Postfach 1660, D-2120 Lueneburg (near Hamburg), West Germany.

**Date of Introduction:** 1996 March.

**Wt/Vol., Packaging, Price:** 125 gm plastic cup with peel-off foil lid. Retail for £0.37.

**How Stored:** Refrigerated.

**New Product—Documentation:** Soyafoods (ASA, Europe). 1996. Spring. p. 4. "Granovita launches Soya Yogharts." These are ambient stable products with a shelf life of 4 months. They contain real fruit with no added sugar, artificial color, or preservatives. A photo shows cups (and labels) of the four different flavored products.

Note: In late 1990, DE-VAU-GE, a Seventh-day Adventist health food company in Germany, set up GranoVita UK Ltd. as a UK subsidiary after the Haldane Foods Group purchased their UK distributor, Granose Foods Ltd.

1627. **Product Name:** So Good Natural Yoghert.

**Manufacturer's Name:** Haldane Foods Group Ltd.

(Marketer). Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 1908 211311.

**Date of Introduction:** 1996 March.

**Ingredients:** Incl. soya milk.

**Wt/Vol., Packaging, Price:** 360 gm resealable pot. Retail for £0.89 (4/96, England).

**How Stored:** Shelf stable, 4-month shelf life at room temperature. Refrigerate after opening.

**New Product—Documentation:** Spot in Soyafoods (ASA, Europe). 1996. Spring. p. 4. "New products from Haldane Foods Group." This product was launched in a family size (360 gm) resealable pot.

1628. **Product Name:** Direct Foods Chicken Burgamix.

**Manufacturer's Name:** Haldane Foods Group.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 1908 211311.

**Date of Introduction:** 1996 March.

**Ingredients:** Soy protein.

**Wt/Vol., Packaging, Price:** 300 gm box. Retail for £1.89 (4/96, England).

**New Product—Documentation:** Spot in Soyafoods (ASA, Europe). 1996. Spring. p. 4. "New products from Haldane Foods Group." This is the latest addition to the Sosmix / Burgamix range of dry mixes in resealable boxes.

1629. **Product Name:** Direct Foods Natural Soya Mince, and Natural Soya Chunks.

**Manufacturer's Name:** Haldane Foods Group.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 1908 211311.

**Date of Introduction:** 1996 March.

**Ingredients:** Soy protein.

**Wt/Vol., Packaging, Price:** 175 gm sachet. Retail for £0.75 (4/96, England).

**How Stored:** Shelf stable.

**New Product–Documentation:** Spot in Soyfoods (ASA, Europe). 1996. Spring. p. 4. “New products from Haldane Foods Group.” These dry mixes are available in sachets.

1630. Day, Charles E. 1996. Commercial development by Audax of soy isoflavone products (Interview). *SoyaScan Notes*. April 1. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Charles worked for Upjohn for many years and from them he learned how to do research and to make drugs. He first got interested in soybeans in 1993 when he happened to read the now famous article titled “Genistein, a dietary-derived inhibitor of *in vitro* angiogenesis,” by Fotsis, Adlercreutz, and others published in the April 1993 issue of the *Proceedings of the American Academy of Sciences* (90:2690-94). Both of his parents, who lived in Kentucky, had been stricken with cancer and he was trying to help them. He had set up a laboratory nearby, and he immediately tried to extract genistein from soybeans in this lab. But he simply couldn’t make the quantities he needed. By the time he had a little pilot plant set up, it was too late. His father died in July 1993 and his mother died in October 1993, the same week he had enough genistein to give to her.

As far as Charles knows, his is the only company extracting isoflavones from soybeans. His is a small, family-owned business (the employees are himself, his wife, his son, and one new outside person), but he believes it has great potential for growth. ADM keeps saying they are going to. He has had several meetings and discussions with all of the ADM executives in charge of that division. A plane load of them have come to Kentucky to visit him, and his team has gone to Decatur, Illinois, to meet with them several times. He does not know what ADM is thinking and why they are not moving forward in this area. They would have no trouble developing a good, large-scale process for extracting and purifying the various soy isoflavones. He has also talked to some other big soy processors. One reason for their hesitation is the fear of a big lawsuit, if someone overdoses and gets sick.

Charles hesitated to move forward with his manufacturing plans for fear that if ADM started extracting isoflavones, he would not be able to compete. Then a company came to Charles and said they wanted it so badly they were willing to buy it at virtually any price and wanted to sign a contract on the spot. That company was Natus, owned by Dr. Stephen Holt.

One of Charles’ major concerns is the regulatory aspects of introducing such a product. With the passage of the Dietary Supplements Health Education Act (DSHEA, pronounced duh-SHEE-uh, also called the Hatch Act, after

Senator Orrin Hatch, Republican of Utah) in 15 Oct. 1994, the whole world of nutraceuticals was revolutionized. This Act made it much easier to sell dietary supplements without FDA approval. It essentially put the burden of proof on the FDA. The actual language of the Act makes “amazing reading. The Act is a watershed event for the health food industry in the USA. “If the soybean isoflavones are handled correctly (and I am not divulging exactly what that means), the regulatory and safety issues will be greatly minimized. It becomes feasible to make and market the product. A company’s risk is diminished, for example, by appropriate use of warning statements.

Audax is fully booked at this point. He has more orders than he can handle. Up to this time, he has been making only pilot plant quantities. If all goes well, Audax will be making commercial quantities within the next 4 months. At that time he will be looking for new customers. Their first product will be Genistone, which is a soy extract; approximately 50% of the content of the product is soy isoflavones. Of those isoflavones, approximately 80% contain genistin. It will be sold as a dry powder and sell for about \$2,000 per kg of isoflavone content. At his price, the 25 mg of total isoflavones in a typical serving of tofu would be worth about \$0.05 (5 cents). He feels that this price can drop quite a bit if he is processing hundreds of tons a day of defatted soybean meal. He thinks he will have the capacity to do that, because he is now working with a large, local soybean crusher.

His main plan for marketing the product is to sell it to food processors who would add it to food products (such as soy yogurt or tofu) at levels with valuable biological benefits; he does not plan to sell it as a supplement to avoid the risks of people overdosing. One problem with adding soy isoflavones to other products is that they have a bitter flavor. However since very small amounts will be added to foods, they may not be noticeable in the final product.

He is using defatted soybean meal as his starting material from which to extract the soy isoflavones. Thus he is using the protein fraction of the soybean rather than the lipid fraction (incl. soy molasses). Isoflavones are closely bound with proteins. The reason he is not using the lipid fraction or soy molasses is proprietary. He has noticed that his by-product (defatted soybean flour containing no isoflavones) has a better taste than most soy flour (and maybe better stability) and he is looking for ways to sell it as a value-added product. He is currently adding it to chicken feed.

If you look at all the isoflavones in the whole soybean, 50-60% is daidzin. But genistein has the greatest biological activity. So he set out to make a product that is rich in genistin. However his product, Genistone, contains genistin as its largest constituent. This is because genistin is hydrolyzed in the gut to genistein, which is then absorbed into the bloodstream.

Charles believes that genistein, at a high enough dose, can stop the growth of cancer in humans. There is

scientific evidence that genistein has cytotoxic activity at a high enough dose; all the major anti-cancer medicines (chemotherapeutic agents) these days are cytotoxins. Put in the right place, they kill both cancer- and non-cancer cells. Genistein has some other properties that make it attractive therapeutically; at a very low dose, it may stop the growth of cancer without killing the cancer cells. This dose is roughly that obtained by eating 6 servings of tofu per day. There is also some evidence of anti-metastatic activity, i.e. it may prevent the cancer from metastasizing, or spreading to other parts of the body—at much lower doses than the cytotoxic activity.

Soy isoflavones have some very potent biological activities. They are an inhibitor of a group of cell transduction proteins called the protein tyrosine kinases, which modify cell division, cell signalling mechanisms, etc. At a high dose (e.g. ten times the desirable dose) there could be some problems. Look at the market for estrogen replacement therapy. Estrogens are great; they do everything that genistein does except they cause cancer instead of preventing it. Genistein does all the things that estrogens do and it prevents cancer. About 6 months ago Merck introduced a drug named Fosamax that prevents osteoporosis and increases bone density. They billed it as one of their big blockbuster drugs for the future, with sales projected at \$1.5 billion a year. It was selling very well, but just last week Merck sent out a “Dear doctor” letter to 150,000 physicians notifying them that one serious side effect was extreme abdominal pain. 36 women have been hospitalized. Sales have started to drop.

What will prevent companies like ADM, Merck, or Sandoz/Novartis from competing with Audax? Nothing.

Talk with Steve Buchheim, marketing manager for soy applications at ADM. 1998. March 6. Steve thinks that Audax never brought their product to market because they were unable to get the soy solids they needed. It was NOT because of any problems or potential problems related to the FDA or regulation. Address: Director of Research, Audax, Inc., 1385 Bear Creek Road, Leitchfield, Kentucky 42754. Phone: 502-242-3791.

1631. Cohen, Laurie; Burton, Thomas M.; Kilman, Scott. 1996. Bargain at the bar. Archer-Daniels cuts surprisingly good deal in price-fixing suit: Proposed settlement follows judge’s unusual move to seek bids by lawyers. \$25 million for its customers. *Wall Street Journal*. April 12. p. A1, A6. Friday (West).

• **Summary:** ADM is prepared to pay \$25 million to settle the most difficult of its civil-litigation problems. The proposed settlement would deal with the class-action allegations of roughly 150 lysine buyers (most of them feed companies) that ADM and competitors manipulated the \$600 million market for lysine, a livestock-feed supplement. ADM controls about 40% of the U.S. lysine market. There

are incriminating videotapes of meetings between officials of ADM and its competitors in this market. This would not affect civil suits pending over alleged price fixing in markets for citric acid and high-fructose corn syrup.

Other major lysine makers, the U.S. units of Japan’s Ajinomoto Co. and the BioKyowa Inc. U.S. unit of Kyowa Hakko Ltd., would each pay \$10.2 million to settle their portion of the lysine case—giving a total settlement of more than \$45 million.

1632. Mehra, Vinod K. 1996. Re: History of Maple Leaf Mills and ADM Agri-Industries Ltd. Letter to William Shurtleff at Soyfoods Center, April 16—in reply to inquiry. 2 p. Typed, with signature on letterhead.

• **Summary:** During World War II, in about 1942-43 [sic], a company named Toronto Elevators began crushing flaxseed, primarily for the linseed meal. [Note: Toronto Elevators. Ltd. began crushing soybeans in Toronto in 1938]. At the end of the war [in 1944 in Toronto], Victory Mills built a solvent extraction plant for soybeans, then in 1951 Maple Leaf Mills also built a soybean crushing plant; that year Maple Leaf first began crushing soybeans. ADM acquired Maple Leaf Monarch in July 1985 [on about July 19].

Note: Mr. Mehra’s letterhead reads “ADM Agri-Industries Ltd.” The company name printed on the envelope is the same. Maple Leaf Monarch is not mentioned in either place. But in the 1994-95 Soya Bluebook Plus (p. 94) the company’s entry reads: “A.D.M. Agri-Industries Ltd. Affiliate of Archer Daniels Midland Company d/b/a Maple Leaf Monarch.”

Note: A review (in May 1996) of Windsor newspaper articles shows that Maple Leaf Monarch opened in Windsor (Ontario, Canada) at 5550 Maplewood in July 1979. This Windsor plant replaced an aging Maple Leaf Mills crushing plant on the Toronto waterfront. The latter plant may have been the original Toronto Elevators Ltd. Address: ADM Agri-Industries Ltd., P.O. Box 7128, 5550 Maplewood Drive, Windsor, ONT Canada N9C 4G9. Phone: 519-972-8100.

1633. *Biodiesel Report (NBB, Jefferson City, Missouri)*. 1996. European Biodiesel Board formed, new plant inaugurated. April. p. 2.

• **Summary:** “Key biodiesel producers in Europe, representing an annual production capacity of more than 150 million gallons of vegetable oil methyl esters, joined forces to form the European Biodiesel Board (EBB). Novaol Company’s Claudio Rochietta, which has affiliates in Italy and France, will serve as president.”

“In addition to Novaol, Diester Industries in France, Oelmuhle Conneman in Germany, BME / VNR in Germany, Oelmuhle Bruck in Austria and SISAS in Belgium also became charter members last November.

“The EBB met April 24 to help inaugurate a new 24

million gallon biodiesel plant in Germany. The plant is operated by Oelmuhle Leer Conneman GmbH & Co., one of EBB's charter members. The company is also an affiliate of Oelmuhle Hamburg AG, in Hamburg, which belongs to Archer Daniels Midland Company, based in Decatur, Illinois."

1634. Carney, Dan. 1996. The Mother Jones 400–Welfare king: Dwayne & Inez Andreas (#3). *Mother Jones* March/April. p. 44.

• **Summary:** "Dwayne & Inez Andreas, Decatur, Illinois. Donated \$348,950 since 1993. Party: Both. They gave \$254,500 in soft money to the Democrats, and \$30,000 to the GOP. They also gave \$22,950 to 25 candidates, nearly all Republican."

Click on the link to view Andreas' itemized contributions according to the MoJo 400 searchable database.

"But Andreas' closest political ties are to Bob Dole, a longtime ethanol champion."

1635. Goulart, Frances Sheridan. 1996. Oh, soy! *Fit* (New York). March/April. p. 77-79.

• **Summary:** On the section titled "A nutritional wonder," the authors notes that soymilk has 15 times more iron than dairy milk, 50% less fat, and no cholesterol. Tofu is one of the two best sources of calcium (yogurt is the other) recommended by the Osteoporosis Foundation for meeting adult calcium needs (1,000 mg/daily). One 4-oz. serving of tofu provides twice as much calcium as one cup of plain yogurt. Soybeans provide the antioxidant vitamins A and E.

A sidebar titled "Your soy shopping list" gives brief definitions of tofu, tempeh, miso, natto, soy milk, soy cheese, soy sauce, and textured vegetable protein (TVP). Address: Connecticut.

1636. *Ontario Soybean Growers' Marketing Board Newsletter*. 1996. Profiles: CanAmera. April. p. 7.

• **Summary:** CanAmera is Canada's largest oilseed processor, with five crushing plants and five refineries strategically located across Canada. Most Canadians eat CanAmera products (such as margarine or vegetable oils) at every meal. "Canadians don't see the name CanAmera. Instead, they see the brand names of a long list of industry leading products, which are actually made and packaged at CanAmera plants... For Ontario's soybean growers, however, CanAmera is a big name. The Hamilton plant processes 45% of Canada's soybean crush... A major expansion project that is under construction will boost soybean capacity by nearly 25% in the first stage with a further 25% increase in 1997." Ontario's only other large-scale crushing plant is the ADM facility at Windsor. The two facilities are expected to crush 1.6 to 1.7 million tonnes (59 to 62 million bushels) of Ontario's forecasted 1.9 million tonne harvests in upcoming years.

A photo shows Murray Davis, Senior Vice President of Trading and Marketing. "Davis would like to see Ontario soybean growers shift more of their focus towards the domestic crush market instead of exports." Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

1637. Robertson, Robin. 1996. 366 healthful ways to cook tofu and other meat alternatives. New York, NY: Penguin/Dutton. 406 p. Index. 24 cm. A Plume book. Nutritional analyses provided by Ed Blonz, PhD.

• **Summary:** Contents: Introduction. 1. Appetizers, hors d'oeuvres, and sandwiches. 2. Stews and hearty soups. 3. Pasta dishes. 4. Casseroles, gratins, and risottos. 5. Stir-fries. 6. Burgers, loaves, and savory pies. 7. Under wraps, stuffed, and skewered. 8. Sautéed, seared, and grilled. 9. Main-dish salads. 10. One-dish meals.

The three main meat alternatives used in the recipes in this book are tofu, tempeh, and seitan. Other soy and related foods are used in recipes are: Adzuki beans, soy milk, and TVP. The author is a woman. Address: Professional chef and cooking instructor, Virginia Beach, Virginia.

1638. *Soyfoods* (ASA, Europe). 1996. New products from Haldane Foods Group. 7(1):4. Spring.

• **Summary:** "At last year's International Food and Drink Exhibition in London, Haldane Foods launched no less than thirteen new products. Apart from the Realeat VegeSteak (See Soyfoods, Vol. 6, No. 3), and a new range of 300 gm microwaveable frozen ready meals in tubs (Realeat Meatless Chili, Realeat Meatless Bolognese, Realeat Meatless Curry—300 gm tub for £0.99) based on VegeMince and VegeSteak, the company launched Realeat VegeBites, a non-meat version of chicken nuggets (454 gm bag—£2.49)."

1639. *Soybean Quarterly* (Nebraska Soybean Board, Lincoln, Nebraska). 1996. Baking with soy: Variety reference guide. 2(2):6. Insert.

• **Summary:** A full-page table shows products used in baking that are now on the market from the following companies: ADM (6 products), AGP (4 types of Agsoy flour and grits), Cargill (5), Central Soya (4), and Protein Technologies International (5).

1640. Riddle, Kitty. 1996. Re: Maple Leaf Monarch and the soybean industry in Windsor and Essex County, Ontario, Canada. Letter to William Shurtleff at Soyfoods Center, May 2—in reply to inquiry. 2 p. Typed, with signature. [2 ref]

• **Summary:** Kitty photocopied 16 articles on soybeans and Maple Leaf Monarch from the *Windsor (Daily) Star* from 20 Jan. 1948 to 23 Sept. 1986. These articles indicate that: (1) Maple Leaf Monarch opened in Windsor (Ontario, Canada) at 5550 Maplewood in July 1979; (2) This Windsor plant replaced 'an aging Maple Leaf Mills crushing plant on the Toronto waterfront'; and (3) Maple Leaf Mills became active

in oilseed processing in 1941.

“I did not locate any references to Toronto Elevator or Maple Leaf Mills in our holdings of Windsor City Directories beginning in 1891. There was a Maple Leaf Milling Co. on Montreuil Avenue beginning in 1929 to 1958 and on Crawford Avenue from 1959 to 1966 but they were agents of flour and cake mixes.” Address: Literature & History Div., Windsor Public Library, 850 Ouellette Ave., Windsor ONT N9A 4MB, Canada. Phone: (519) 255-6770.

1641. Henkoff, Ronald. 1996. The ADM tale gets even stranger: Theft. Extortion. Sabotage. Even phone calls to the CIA. These guys just can't stop slinging mud at each other. *Fortune* 133(9):113-14, 116, 118, 120. May 13.

• **Summary:** “As Bonnie Wittenburg, a security analyst at Dain Bosworth in Minneapolis, says, ‘If this investigation were just about lysine, who would care? From an investment point of view, things would be worked out. But to me, there are signs that we’ve got a corporate culture problem here.’

“No matter what kinds of deals it strikes in court, then, ADM will still have to clear the heavy clouds surrounding the way it prices products, acquires technology, pays executives, and deals with government officials. At the least, the events of the past ten months threaten the legacy of Chairman and Chief Executive Dwayne Andreas, 78, the man who built ADM into a global agribusiness. At the worst, they could lead to the indictment and possible imprisonment of his son and onetime heir apparent, Michael Andreas.”

1642. Kuhn, Mary Ellen. 1996. Soy in the spotlight: Disease-fighting benefits may change the image of the once-lowly bean. *Food Processing (Chicago)*. May. p. 52-53, 55, 58.

• **Summary:** This is a cover story; on the cover is written: “Unlocking the secrets of soy,” with four large color photos. The article begins: “What a difference a couple of decades make.” Twenty or 30 years ago, most foodservice operators and consumers used soy with hesitation, sometimes scornful comments. “Today, however, the once-maligned soy protein has a much better image, thanks to a fast-mounting stack of research data suggesting it may help prevent and treat high blood cholesterol, cancer, osteoporosis, and symptoms of menopause.” And this good news has begun to reach health and nutrition professionals. With better products on the market, “soyfoods marketers may soon be dealing with a new generation of mainstream consumers who—far from spurning soy-based products—actively seek them out.

“Much of the current soy research is focused on isoflavones, a unique class of phytoestrogens or plant hormones found primarily in soy protein.” The main soy isoflavone is genistein. Now soyfoods manufacturers are starting to take isoflavone content into consideration when they formulate, label, and promote their products. The isoflavone content of unprocessed soybeans can vary considerably among varieties, years, and place of harvest.

Heat treatment does not appear to significantly reduce isoflavone content, but an alcohol wash (used with most soy protein concentrates and isolated soy proteins) removes most isoflavones in the product. The well-known Supro brand of isolated soy proteins are not subject to an alcohol wash, which helps preserve their isoflavone content.

Rick McKelvey, president of the Soyfoods Association of America, has attended the American Dietetic Association show for the past two years. Last year, most of the questions he heard were: “What is this soy stuff that I’m hearing about?” This year’s questions concerned the level of isoflavones in specific products. “This shows how far we’ve come in the last year,” he observes.

ADM, which could easily extract isoflavones from soybeans and sell them has decided not to do so. Jerry Weigel, PhD, who is ADM’s vice president of corporate nutrition and regulatory affairs thinks it is probably not legal to sell isoflavones because they do not have GRAS (Generally Recognized as Safe) status or food additive status. Few soyfoods marketers are presently publicizing the isoflavone or genistein content of their products or making specific health or disease-prevention claims.

William Helferich, PhD, an associate professor at Michigan State University’s Department of Food Science and Human Nutrition, has been studying dietary phytoestrogens in laboratory animals for 3 years. He has found that “genistein can stimulate estrogen-responsive breast cancer-cell growth in cultured cells and in animals implanted with these cells. He believes that women at risk for estrogen-dependent forms of breast cancer should not consume high levels of phytoestrogens.” Most researchers are concerned about consumers taking isoflavone supplements or pills. Yet such products are now on the market and they acknowledge that some consumers will be attracted to them, instead of simply increasing the level of soyfoods in their diet, eating a healthful, balanced diet, and living a healthy lifestyle. Photos show: A jar of Morningstar Farms Roasted Soy Butter (soynut butter) which will be introduced this spring. Jan Remak, president of marketing for Vitasoy U.S.A.

One sidebar, titled “Probing the soy/health connection,” discusses the research of Dr. James Anderson and Mark Messina, PhD. “Scientists theorize that phytoestrogens in soy might help compensate for the loss of hormonal estrogen women experience at menopause.”

Another sidebar, “Boom times for the bean,” notes that starting soon after the research study by Dr. James Anderson was published in August 1995, many soyfoods companies experienced a substantial increase in sales. Peter Golbitz notes that “After years of steady 10% to 15% annual growth, soyfood sales have soared by about 30% in the past year... Many marketers of meat and dairy analogs are reporting sales increases of more than 100%.” A 1995 study by the Soyfoods Association of America found that 75% of Americans have heard of tofu, 55% of soymilk, and 50% of

soy burgers. Golbitz adds that in Australia, where soymilk based on soy protein isolates is widely available, per capita soymilk consumption is at least three times what it is in the USA. Vitasoy has adopted a niche-market approach to selling its soymilk; it adjusts the amount beany taste according to the taste preferences of each market. Address: Senior Editor.

1643. Ohio Soybean Council / Soy Ohio. 1996. Creative cooking with soy. Columbus, Ohio. 20 p. May. 24 cm.  
 • **Summary:** This attractive cookbooklet contains many large color photos on thick glossy paper. The recipes are: Heartland burgers (with TVP). Golden baked beans (with 2 cups cooked soybeans). Creamy tomato soup (with soy milk, silken tofu, and soy oil). Chicken raspberry salad (with silken tofu in the sauce, and reduced sodium soy sauce). Easy day vegetable lasagna (with silken tofu). All-American twice-baked potatoes (with silken tofu). Primo veggie pasta (with silken tofu in the sauce). Oatmeal bread (with soy milk and soy flour). Better bran muffin (with soy milk and soy flour). Super crunchy caramel corn (with soy margarine). Fruit smoothie (with silken tofu). Sweetheart cinnamon rolls (with silken tofu and lite soy margarine). Chocolate silk dessert (with silken tofu and soy margarine). Buckeye surprise (with silken tofu and soy margarine). The last two pages are “Working with soyfoods” (soy flour, soy oil, tofu), and “Soyfoods resources” (a directory of organizations, books, and web sites providing information about soyfoods and nutrition).

Talk with Kelly Ollwine, executive secretary for the Ohio Soybean Council. 1996. June 7. This booklet, published in May 1996, was developed by Jim Kapp of Yoder, Sullivan & Kapp, a consulting firm in Columbus, Ohio. He also developed another such book titled “Cooking American Favorites with Soy,” published in 1994.

Talk with Jim Kapp. 1996. June 7. The recipes in both these books were developed by two Ohio home economists, Connie Cahill and Melody Leidheiser. Address: P.O. Box 479, Columbus, Ohio 43216-0479.

1644. Raymond, Jennifer. 1996. The peaceful palate: Fine vegetarian cuisine. Revised ed. Calistoga, California: Heart & Soul Publications. 159 p. Illust. Index. 28 cm. [5 ref]  
 • **Summary:** A vegan cookbook, with a substantial section on vegan nutrition. Contains 11 tofu recipes and 1 recipe for tempeh sandwich.

Contents: Acknowledgements. Introduction (most Americans eat too much protein and far too much fat). Choosing food for optimum health. Protein. Calcium. Protein myths and facts. Putting fat in its place. Cutting the fat. Dairy products and eggs (why each is cruel to animals; soy and rice milks are excellent alternatives to cow’s milk; tofu can be scrambled in place of eggs. Five good books about factory farming. Contact information for three organizations “working to end the horrors of factory farming”). A note



about sweeteners. Cooking dried beans. Equipping your kitchen. Stocking your pantry for healthful eating. What to eat when you don’t eat meat. Foods which may be new to you [glossary] (includes aseptically packaged tofu, barley malt, low-sodium soy sauce, mirin, miso, Nayonaise {eggless, dairyless, cholesterol-free mayonnaise}, non-dairy frozen dessert, non-dairy yogurt, reduced-fat tofu, rice milk, rice syrup, seitan, silken tofu, soy milk, Spectrum Natural Spread {similar to soft margarine but made without hydrogenated fats}, tempeh, textured vegetable protein {TVP}).

“Until he extends the circle of his compassion to all living things, man will not himself find peace”—Albert Schweitzer.

Recipes: Breakfasts. Breads. Sandwiches. Salads & salad dressings, etc. A portrait photo (p. 159) shows Jennifer Raymond. “She works as a chef and nutrition specialist with Dean Ornish, M.D. in his ‘Open your heart program,’ teaching patients how a delicious, easily prepared vegetarian diet can reverse heart disease.” “Her first cookbook, *The Best of Jenny’s Kitchen*, was published by Avon books in 1981 and was followed closely by her television series *Cooking Naturally!* Jennifer lives in Calistoga, California, with her husband Stephen Avis and their five dogs.”

The tofu and tempeh recipes are: Scrambled tofu (p. 27). Missing egg sandwich (p. 42). Tempeh salad sandwich (p. 44). Tofu, lettuce & tomato sandwich (TLT, p. 45). Broiled tofu (p. 48). Pasta with creamy tofu (p. 109). Lasagna (with tofu, p. 113). Tofu burgers (p. 125). Tofu croquettes (p. 126). Tofu pot pie (p. 127). Tofu cream frosting (p. 148). Tofu cheesecake (p. 150).

Talk with Jennifer Raymond. 1996. May 30. The new enlarged edition was available on 2 May 1996. There are new recipes and with each recipe is a nutritional analysis. The book is still available from the author, as well as nationwide because it is distributed by The Book Publishing Company in Summertown, Tennessee. She is now working closely with Dr. Dean Ornish, and adds: "He is at the center of where things are happening related to vegetarianism, diet, and health. His work has had a more profound impact on the way that the medical profession and people in general view vegetarianism than that of almost any other person. It has allowed vegetarianism to turn a really big corner." Address: 1418 Cedar St., Calistoga, California 94515. Phone: 707-942-2180.

1645. Second International Symposium on the Role of Soy in Preventing and Treating Chronic Disease: September 15-18, 1996. Brussels Conference Center, Brussels–Belgium. 1996. American Soybean Assoc., Rue du Commerce 20-22 Box 4, 1010 Brussels, Belgium. 23 p. 30 cm.

• **Summary:** The cover of this attractive booklet has dark green ink on natural beige paper, with a square photo of soybeans in the middle. Contents: Invitation from the chairperson. The Second International Symposium On the Role of Soy in Preventing and Treating Chronic Disease: agenda. Satellite Symposium: agenda. Important deadlines and addresses. Instructions for abstracts. General information. Introducing Belgium and Brussels. Registration. Hotel accommodation. Social program. Symposium registration form. Hotel accommodation form. Social program form.

This symposium is being organized by Mark Messina, PhD (Chairman, USA), Roger Leysen, PhD (Secretary, Belgium), and Koen Descheemaeker, PhD (Scientific coordinator, Belgium). The international scientific advisory board consists of 12 members: Herman Adlercreutz, M.D. (Finland); Guiseppe D'Amico, M.D. (Italy); Stephen Barnes, PhD (USA); John Erdman, PhD (USA); Bernard Guy-Grand, M.D. (France); Takemichi Kanazawa, M.D. (Japan); Jean-Michel Lecerf, M.D. (France); Erik Muls, M.D. (Belgium); Marcel Roberfroid, PhD (Belgium); Risto Santti, M.D. (Finland); Cesare Sirtori, M.D. (Italy); Kurt Widhalm, M.D. (Austria).

Tentative agenda: Sunday, Sept. 15. Welcome and opening remarks. Overview of diet and cancer. Biotechnology of the soybean. Monday, Sept. 16. Soy and kidney function. Soy and bone health. Soy and heart disease:

Hypocholesterolemic effects of soy (basic, mechanisms). Tuesday, Sept. 17. Soy and heart disease: Effects of independent cholesterol reduction. Soy and cancer: Animal studies, soybean anticarcinogens / anticancer mechanisms. Wednesday, Sept. 18. Soy and cancer: Human studies. Hormonal effects of soy.

Satellite symposium: A special satellite symposium will be held on Thursday, September 19, at the Sheraton Hotel, Place Rogier, Brussels; it will focus on two areas. The morning session on "Current understanding of soy and infant health" has been organized to better understand the effects of soy protein formula in infants and soyfoods in infants and young children—with particular emphasis on soybean isoflavones. The afternoon session on "Soybean isoflavones: measurement, levels in foods, and pharmacokinetics," will focus on isoflavone absorption and metabolism, and methodology for quantifying isoflavones in food and biological matrices.

The cost of both symposia, including lunches but hotel accommodations, for a non-student paid before Aug. 1 is about \$439.

Sponsors contributing more than \$15,000: Alpro natural soyfoods, American Soybean Association, Protein Technologies International, Nebraska Soybean Board, Sojaja (The French Association for Soyfoods Promotion—Active members: Alpro, Nutrition et Soja, Sojasun, Sojinal), U.S. Foreign Agricultural Service, United Soybean Board, Ohio Soybean Board, Central Soya, ADM, Wyeth Nutrition International, Indiana Soybean Development Council.

Other sponsors: Illinois Soybean Association and Illinois Soybean Program Operating Board, American Institute for Cancer Research, Monsanto Company, Ontario Soybean Growers' Marketing Board, Soyfoods Association of America, Minnesota Soybean Research and Promotion Council, Iowa Soybean Promotion Board, Michigan Soybean Promotion Committee, Indiana Soybean Development Council, Morinaga Nutritional Foods, Inc., and Functional Foods for Health Program. Address: Brussels, Belgium.

1646. Demos, Steve. 1996. Recent trip to Europe. What is vegetarianism? Cause marketing (Interview). *SoyaScan Notes*. June 5. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Steve greatly enjoyed meeting Bernard Storup of *Nutrition et Soja* in France, and discussing soyfoods. Steve was especially impressed with his soymilk production and packaging line. Bernard is making some interesting soy/dairy blends. Bernard's long term plan is not to stay with Sandoz. Now Bernard gets a bonus of \$100,000 a year in addition to his salary just to stay with Sandoz.

In the UK, Steve met with Graham Keene, head of marketing and sales for the Haldane Group. Haldane makes yogurt under 3 brands, and one of them was the best soy yogurt Steve has ever tasted anywhere. Their yogurt has a



pH of 3.8 to 4.0 which gives it a shelf life of 3-4 weeks; there appeared to be no special tricks involved. Steve would soon like to travel to East Asia to take a closer look at Okinawan fermented tofu (*Tofu*). Steve spent \$100,000 to find out what people mean when they say "I am a vegetarian." They mean: "I avoid red meat."

Cause marketing is where a company puts its advertising dollars into a cause, such as saving the rain forests or promoting vegetarianism.

The largest investor in White Wave has the surname "Demos," and it is not Steve. Address: President, White Wave Inc., 1990 North 57th Court, Boulder, Colorado 80301.

**1647. Product Name:** Green Giant Harvest Burgers for Recipes: Prebrowned all vegetable protein crumbles.

**Manufacturer's Name:** Green Giant Div., The Pillsbury Company (Marketer-Distributor). Made in Decatur, Illinois, by ADM.

**Manufacturer's Address:** Pillsbury: 2866 Pillsbury Center, Minneapolis, MN 55402-1464. Phone: 1-800-998-9996.

**Date of Introduction:** 1996 June.

**Ingredients:** Water, soy protein concentrate, isolated

soy protein, methylcellulose, malt extract, corn starch, salt, natural flavor, autolyzed yeast extract, maltodextrin, dextrose, beet powder, dried onion, spice, dried garlic, modified corn starch, corn syrup solids. Vitamins and minerals: zinc oxide, niacinamide, ferrous sulfate, copper gluconate, vitamin A palmitate, calcium pantothenate, thiamine mononitrate, vitamin B-6 hydrochloride, riboflavin, vitamin B-12.

**Wt/Vol., Packaging, Price:** 12 oz printed plastic bag. Retail for \$3.09 (Dec. 1996, California).

**How Stored:** Frozen.

**Nutrition:** Per 2/3 cup (about 61 gm): Calories 90, calories from fat 0, total fat 0 gm), cholesterol 0 mg, sodium 270 mg (11%), potassium 370 mg (11%), total carbohydrate 5 gm (dietary fiber 4 gm, sugars <1 gm), protein 14 gm. Vitamin A 0%, niacin 15%, vitamin B-12 15%, zinc 35%, copper 10%, calcium 8%, vitamin C 0%, iron 10%, riboflavin 6%. Percent daily values are based on a 2,000 calorie diet.

**New Product-Documentation:** Product with Label purchased at Safeway Supermarket in Lafayette, California. 1996. Dec. 15. Label. 10 by 7¼ inches. Dark green, light green, white, yellow, and red. A large color photo shows the

crumbles being poured into a skillet of tomato sauce. "Use instead of browned ground beef. Fat free. Zero cholesterol. Good source of fiber. 12 ounces goes as far as 1½ lb. ground beef. 2/3 cup frozen crumbles equals ¼ cup ground beef, browned and drained.

Talk with Nicole, customer service representative from Green Giant. 1996. Dec. 19. This product was introduced in June 1996.

1648. Harvest Direct, Inc. 1996. Harvest Direct: Food you can live with [mail order catalog]. Knoxville, Tennessee. 16 p. 27 x 16 cm.

• **Summary:** Contents: Salad dressings. Meals in a minute (Fantastic Foods). Ground meat alternatives (Protean—The versatile replacement for ground meat, Harvest Direct). Soups, spices, condiments. TVP. Ribs, tofu & tofu meals (Fantastic Foods, Mori-Nu, Arrowhead Mills). Meat Alternatives (Worthington Foods, Fantastic Foods). Soup & meal cups. Beans & Beano. Pasta & sauces. Breads & baked goods. Substitutes for sugar, eggs & fat. Dairy alternatives. Baby foods. Glassware. Gift baskets.

On the cover are nine round, dark brown patties arranged in a circle on a blue and white plate. In the center is a sliced red grapefruit, with a strawberry at its center, blueberries scattered around the periphery, and one sprig of celery. Address: P.O. Box 988, Knoxville, Tennessee 37917. Phone: 1-800-835-2867.

1649. Beeley, Robert A. 1996. A brief history of Dixie USA and the company philosophy (Interview). *SoyaScan Notes*. July 31. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Forty some years ago, Robert started out with a burning interest in emergency medicine. This continued into the Air Force, where he was in the medical corps, teaching for the American Heart Association, etc. About 20 years ago he started Dixie USA as an emergency medical supply company. The company has done very well and Robert is still in that business, but it is tapering off for many reasons, none the least of which is the consolidation in the medical industry, etc.

About 15 years ago Brenda Oswalt, joined the company as an equal partner with Robert—primarily for her artistic, writing, and publishing skills. She was raised a Seventh-day Adventist and was trained at the Cordon Bleu in France as a chef. About 2-3 years ago they saw the handwriting on the wall as far as the medical part of their business is concerned, so they said: "We've been treating these poor people all this time, why don't we start trying to help prevent their problems." One thing led to another and now they are very much into the preventive food business by mail order. They kept the same company, Dixie USA, but now have two product lines and two catalogs. But their approach is quite different from most others who are in the so-called health food business. They have a couple of key rules: (1) "If it

doesn't taste excellent, we will not get involved with it." People should enjoy eating and shouldn't have to look at it as some kind of task they have to endure. Meal time should be an enjoyable time with family and friends—a glass of wine if you want. (2) "Once a week you can go out and blow the whole thing if you want to. Eat a big steak if you must. We're trying to tell people that you can have a healthier lifestyle and still enjoy life. Splurging one day a week won't hurt you at all. Eating soy the next day will help you flush out whatever toxins are left in there. We're very pragmatic people here.

They have developed a lot of their own recipes and today they have almost new 10,000 customers on their food mailing list. After they started the company, Mark Messina's book, *The Simple Soybean and Your Health* was quite influential in focusing their interests on soy. Dixie USA now sells quite a few of Mark's books. Brenda talks with Mark at length about once a week, sharing information. Fat Not! Crème It (Soy Powder) is a tofu powder made by Clofine. Brenda developed a great recipe for using it and now it is one of the company's best sellers. They also sell Mori-Nu Tofu. Beef (not!) is ADM TVP. Address: Chairman, Dixie USA Inc., P.O. Box 55549, Houston, Texas 77255. Phone: 713-688-4993 or 1-800-233-3668.

1650. ADM; Dixie USA. 1996. Skewers with style: Entertaining is easy with the Midland Harvest family of savory and satisfying all-vegetable entrees (Ad). *Vegetarian Times*. July. p. 13.

• **Summary:** This full-page color ad shows skewered meatless kabobs on a bed of rice in a silver tray. Contains a recipe for Stone-ground mustard and jalapeño kebabs—using 1 package Original Burger 'n Loaf. The six dry mixes, whose packages are shown, are: Burger 'n Loaf (Original, Herbs & Spice, or Italian Style). Chili Fixin's. Sloppy Joe Fixin's. Taco filling 'n dip. The products contain only 0-5% fat, are cholesterol free, and "Contain fiber."

Bold text near the bottom of the ad states: "Midland Harvest Mixes—The delicious way to get the great nutrition and high protein of soyfoods in all your favorite dishes. Made by ADM, Supermarket to the World.

"For more information about Midland Harvest products or for direct mail ordering, call Dixie USA 1-800-347-3494."

1651. **Product Name:** Granose Non-Dairy Custard.

**Manufacturer's Name:** Haldane Foods Group.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 1908 211311.

**Date of Introduction:** 1996 July.

**Ingredients:** Soymilk.

**Wt/Vol., Packaging, Price:** 70 gm sachet. Retails for £0.49 (7/96, England).

**New Product—Documentation:** Spot in Soyfoods (ASA,

Europe). 1996. Summer. p. 4. "Six new products from Haldane Foods." This is a vegan product, containing no dairy products. A black-and-white photo shows the package.

1652. **Product Name:** Sosmix Light.

**Manufacturer's Name:** Haldane Foods Group.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 1908 211311.

**Date of Introduction:** 1996 July.

**Ingredients:** Textured soy protein.

**Wt/Vol., Packaging, Price:** 125 gm sachet. Retail for £0.95 (7/96, England).

**New Product–Documentation:** Spot in Soyfoods (ASA, Europe). 1996. Summer. p. 4. "Six new products from Haldane Foods." This product contains only 5% fat, dropping to less than 1% when reconstituted. A black-and-white photo shows the package.

1653. **Product Name:** Spicy Beanburger Mix.

**Manufacturer's Name:** Haldane Foods Group.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 1908 211311.

**Date of Introduction:** 1996 July.

**Ingredients:** Textured soy protein.

**Wt/Vol., Packaging, Price:** 150 gm sachet. Retail for £0.95 (7/96, England).

**New Product–Documentation:** Spot in Soyfoods (ASA, Europe). 1996. Summer. p. 4. "Six new products from Haldane Foods." This meatless product is suitable for catering and fast-food outlets. A black-and-white photo shows the package.

1654. **Product Name:** Granose Meatless Steak & Onions.

**Manufacturer's Name:** Haldane Foods Group.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 1908 211311.

**Date of Introduction:** 1996 July.

**Ingredients:** Textured soy protein.

**Wt/Vol., Packaging, Price:** 400 gm can. Retail for £1.19 (7/96, England).

**New Product–Documentation:** Spot in Soyfoods (ASA, Europe). 1996. Summer. p. 4. "Six new products from Haldane Foods." This product is made with VegeSteak. A black-and-white photo shows the package.

1655. **Product Name:** Granose Meatless Bolognese Balls.

**Manufacturer's Name:** Haldane Foods Group.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 1908 211311.

**Date of Introduction:** 1996 July.

**Ingredients:** Textured soy protein.

**Wt/Vol., Packaging, Price:** 400 gm can. Retail for £1.49 (7/96, England).

**New Product–Documentation:** Spot in Soyfoods (ASA, Europe). 1996. Summer. p. 4. "Six new products from Haldane Foods." This product is made with VegeMince. A black-and-white photo shows the package.

1656. **Product Name:** Granose Meatless Frankfurters.

**Manufacturer's Name:** Haldane Foods Group.

**Manufacturer's Address:** Howard Way, Newport Pagnell, Buckinghamshire MK16 9PY, England. Phone: +44 1908 211311.

**Date of Introduction:** 1996 July.

**Ingredients:** Textured soy protein.

**Wt/Vol., Packaging, Price:** 400 gm can. Retail for £1.49 (7/96, England).

**New Product–Documentation:** Spot in Soyfoods (ASA, Europe). 1996. Summer. p. 4. "Six new products from Haldane Foods." A black-and-white photo shows the package.

1657. Kessler, Jon. 1996. Re: Report on visit to Alfa Bio in Slovakia. Letter to William Shurtleff at Soyfoods Center, July. 2 p. Typed, without signature.

• **Summary:** This company is located in Banska Bystrica, Slovakia. Phone: 004288 761 863 or 862. Fax: 004288 763 675. Owner/manager: Jan Lunter. "I visited Alfa Bio around April 15, 1996. They are now making about 7,000 kg of tofu per week. They make regular firm plain tofu, smoked tofu, marinated tofu, and have just started using a large and expensive sausage stuffer to package okara. They plan to package *tresca* (a local fish salad—not sure if theirs is fish flavored or actually has fish), spaghetti, as well as tofu eventually. They currently make four spreads—parsley, dill, prepared peppers and vegetable.

"Equipment: As much as possible it seems they have fabricated equipment themselves due to limited capital and high cost of equipment from outside the country. They have a gas-fired boiler, 4 large bean bins in shop for soaking, with an inverted pyramid cone at the bottom. They were in the process of installing an auger to move the bean to the grinder–disintegrator type—when I visited. The slurry is heated in 3 pressure cookers that are set up in line to produce a continuous flow of slurry. The slurry is separated in a centrifuge designed by Jan Lunter, with some kind of squeezing mechanism. He said it took 1 year to perfect. The resulting soymilk is curded in round rolling barrels, pressed in three part boxes (the standard sides, base and lid) using filter fabric. The presses are lever presses. They had about 6 to 8. They press about 5 minutes. The tofu is cooled in rolling bins which are then rolled to a pair of pouch-type vacuum packaging machines from the Netherlands. The packaged tofu is weighed and labeled with its weight and

date at a different station.

“Product quality: They do not use organic soybeans, and use a mix of calcium chloride and some other curding agents. The tofu is perhaps a bit softer than nigari tofu, not as sweet and slightly crumbly. They were trying to get the tofu to bend when you take a thin slice from a 16 oz. block (as a nearby Austrian maker did) and theirs breaks. Their marinated tofu is excellent. Smoked was good too. They were not yet making the ‘tresca’ and spaghetti products in their sausage-type casing, and I did to have a chance to sample the okara.

“Market outlook: They are rightly concerned about possible shipments of tofu from Heuschen-Schrouff coming in from the Netherlands. Their price is fairly high and the Dutch company would be competitive probably. I think the Heuschen-Schrouff quality was a bit better as well, though they could probably improve by either pressing a bit more and/or changing coagulants. They might save a lot of labor if they are successful in using their stuffer to package tofu. I was impressed at the rapidity of their growth in sales. Slovakia seems to be very accepting of soy protein—I noticed a lot of TVP/TSP in many restaurants as well as markets. Perhaps this is due to both the affordability of soy protein as well as availability of alternatives, both now and in the past. Another advantage is that Slovaks are not used to prepared foods and expect to spend some time in flavoring and preparing their foods at home.” Address: Twin Oaks Community Foods, 138 Twin Oaks Road, Louisa, Virginia 23093. Phone: 540-894-5126.

1658. *Soyfoods (ASA, Europe)*. 1996. New UK distributor for ADM proteins and lecithins. 7(2):3. Summer.

• **Summary:** The Archer Daniels Midland Co. (ADM) has appointed Droitwich Specialty Products (DSP, 5a St. Andrews St., St. Andrews Square, Droitwich Spa, Worcs. WR9 8HE, UK. Phone: +44 1905 797837) as distributor in the UK for all of its soy protein and lecithin products. This brings the UK in line with the ADM Protein and Lecithin Division policy of supplying its products to the European market through specially selected distributors.

1659. Fleckenstein, Mike. 1996. Water-wash versus alcohol-wash soy protein concentrates (regular and textured) and their isoflavone levels at ADM (Interview). *SoyaScan Notes*. Aug. 1. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Soy protein concentrates are made by two basic processes: Alcohol wash and water wash. At ADM, Arcon F is alcohol washed / extracted and Arcon S is water washed. You can think of F as standing for Fast and S for Slow. ADM’s textured soy protein concentrate is named Arcon T, which is made by texturing Arcon F (alcohol washed). Mike is quite sure that neither ADM nor any other company in the world is making a textured water-washed concentrate.

The alcohol wash process is preferred for a variety of reasons: It is a very fast, inexpensive process, which involves

extracting/washing defatted soy meal with aqueous alcohol (a mixture of ethanol and water), then desolventizing the mixture to give a fine, white powder. The water wash is much, much slower, with several tanks for water washing; the process requires spray drying (very expensive) at the end—which the alcohol wash does not. In small amounts (2,000 lb or more), the price of Arcon F is \$0.75/lb versus \$0.95/lb for Arcon S, so about 27% more. Organoleptically, Arcon F is a better product. It has about 98% of the flatulence factors removed, compared with about 85% for Arcon and 0% for TVP. The flavor of Arcon F is only slightly better than that of Arcon S, and the two is equally good. Arcon S is a functional concentrate which, in this respect behaves quite like a soy protein isolate, and is also made in much the same way as an isolate. It is used mostly in emulsified meat products (especially hot dogs, sausages, and hamburgers) as a fat emulsifier and water binder. Arcon S will do the job roughly as well as a soy protein isolate and it is much less expensive, in part because it contains fiber. Many customers use products in combination, such as textured soy concentrate + Arcon S as a binder in a meat formulation.

Mike has daily enquiries about the isoflavones level of ADM’s soy protein concentrates from both consumers and food processors. ADM has discussed introducing a textured, water-washed concentrate but it probably won’t happen for quite a while—at least until some big company places an order for at least 1-2 million pounds. Several of the big cereal companies are very interested in fortifying their cereals with soy protein concentrates. They are well aware of the differences and the excitement about the isoflavones, but the demand is not there yet. Six months ago they did texturize some water-washed concentrate and they are now doing a human feeding (probably with WHO) study comparing texturized Arcon S with texturized Arcon F. Another option is to fortify Arcon F with isolated, extracted isoflavones—just like they now fortify other foods with vitamins. One of their researchers has applied for a patent on the process. One interesting question that recently led to a big debate among ADM researchers is this: If Arcon F were fortified with isoflavones only to the level that they existed in the natural product, would it have to be so labelled, and would it require FDA approval as a food additive. Address: Technical Manager, Textured Proteins, ADM, Decatur, Illinois. Phone: 217-424-5386.

1660. ADM. 1996. ADM stock splits and stock dividends from 1945 to Aug. 1996. Decatur, Illinois: ADM 1 p. Jan. 29. With cover letter.

• **Summary:** This report was faxed by ADM to Wm. Shurtleff at Soyfoods Center on 29 Jan. 1997 at his request.

A 3 for 2–50% split means that a shareholder who owned 100 shares now has 150 shares. His or her number of shares has increased by 50%. Address: Decatur, Illinois.

<b>ADM STOCK SPLITS AND STOCK DIVIDENDS</b>			
<b>RECORD DATE</b>	<b>PAYABLE DATE</b>	<b>DIVIDEND/SPLIT</b>	<b>CLOSING PRICE RECORD DATE</b>
31-Aug-45	10-Sep-45	3 for 1 split	
2-May-70	1-Jun-70	2 for 1 split	50 1/2
17-Nov-72	1-Dec-72	2 for 1 split	45 1/2
16-Nov-73	30-Nov-73	2 for 1 split	43 1/4
16-Dec-74	30-Dec-74	10%	16 5/8
18-Nov-75	10-Dec-75	50%	39 1/4
1-Sep-77	20-Sep-77	5%	18 7/8
1-Sep-78	20-Sep-78	5%	16 1/8
31-Aug-79	20-Sep-79	5%	25 5/8
31-Oct-80	21-Nov-80	5%	37
20-Feb-81	20-Mar-81	3 for 2 - 50%	29 7/8
21-Aug-81	18-Sep-81	5%	16 3/4
23-Aug-82	17-Sep-82	5%	14 1/2
22-Aug-83	16-Sep-83	5%	19 7/8
20-Aug-84	14-Sep-84	5%	18 1/8
19-Aug-85	13-Sep-85	5%	20 3/8
2-May-86	2-Jun-86	3 for 2 - 50%	26 1/8
18-Aug-86	12-Sep-86	5%	20 5/8
17-Aug-87	11-Sep-87	5%	26 5/8
22-Aug-88	16-Sep-88	5%	18
28-Aug-89	25-Sep-89	5%	31 7/8
10-Nov-89	4-Dec-89	3 for 2 - 50%	31
20-Aug-90	17-Sep-90	5%	22
19-Aug-91	16-Sep-91	5%	22 7/8
17-Aug-92	14-Sep-92	5%	25 3/8
23-Aug-93	20-Sep-93	5%	22
22-Aug-94	19-Sep-94	5%	24 5/8
4-Nov-94	5-Dec-94	3 for 2 - 50%	27 3/8
21-Aug-95	18-Sep-95	5%	16 5/8
19-Aug-96	16-Sep-96	5%	18 1/8

1661. Roberts, Paul Craig. 1996. Fear in FBI's arsenal of inquiry. *Washington Times (DC)*. Aug. 27.

• **Summary:** The author argues that the FBI has suffered great damage to its reputation, and become a political arm of the Clinton administration. A case in point is the FBI's three-year investigation of agribusiness giant ADM. In Nov. 1992 ADM notified the FBI of an illicit offer, reported by one of its executives, Mark Whitacre, from an employee of a Japanese firm to sell information to ADM for \$10 million. "When ADM's top management informed the FBI, Mr. Whitacre, then head of ADM's BioProducts Division, had a fit of consternation, and objected to being interviewed by the FBI." Mr. Whitacre was later accused by ADM of embezzling millions of dollars from the company. "In retrospect, ADM executives believe the Japanese competitor's offer reported by Mr. Whitacre was in fact one of his own schemes to bilk the company. Mr. Whitacre might have feared that the FBI would find this out..."

"His protests notwithstanding, Mr. Whitacre was forced to meet with the FBI. Less than two months later he signed a secret agreement with the U.S. Attorney of the Central District of Illinois 'to act in a covert capacity' as an agent against ADM 'solely at the direction and under the supervision of the FBI and this office.' In exchange, Mr. Whitacre was granted immunity.

"No one but the FBI and Mr. Whitacre knows why his story of the purported Japanese offer resulted in this secret agreement to create evidence against ADM."

"Mr. Whitacre agreed to orchestrate 'price-fixing' meetings that the FBI could secretly videotape. The FBI's case rests on these tapes." Address: Columnist, nationally syndicated.

1662. Messina, Mark. 1996. Soyfoods and soy pills. *Soy Connection (The) (Jefferson City, Missouri)* 4(3):1. Summer. [4 ref]

• **Summary:** Makes the case convincingly that, in most cases, it is better to eat soyfoods as part of a healthy, balanced diet, than to take soy pills. "Without question the one group of phytochemical, in particular the isoflavones, is responsible for most of the recent research focus on soy. This is because of the observed biological properties of isoflavones (such as the estrogenic activity) and because, for practical purposes, soyfoods are the only natural dietary sources of these compounds." However since several companies are now marketing soy/isoflavone pills, one need no longer eat soyfoods to get isoflavones.

"Individual pills provide as much as 20 mg of isoflavones; that's quite a bit considering that there are about 30-40 mg of isoflavones per serving of soyfood. As the research spotlight continues to shine on isoflavones, it is probable that these soy pills will find an enthusiastic market.

"Of course, there are at least two obvious reasons for

promoting soyfoods, rather than soy pills. One, is that there are other phytochemicals in soyfoods, such as phenolic acids and saponins that may exert beneficial effects and that are not present in significant amounts in the pills. Two, for most people, incorporating soyfoods into the diet will lead to diet lower in saturated fats and cholesterol and higher in fiber (in the case of soybeans, tempeh, TVP). Taking pills does nothing to encourage a change in overall eating, but eating soyfoods does. There is another consideration—there are potentially critical differences in isoflavone composition between the soy pills and soyfoods. The health implications of these differences need to be addressed.

"But what if, for example, research establishes that isoflavones are directly responsible for inhibiting bone resorption [osteoporosis] and relieving menopause symptoms (night sweats, hot flashes)? What then should be the response of a woman who consumes a healthy diet and who wishes to use soy pills to relieve menopausal symptoms? I don't think there are any easy answers to such questions. As a general approach, foods are always preferred, but in specific situations phytochemical pills may be an alternative that has some merits." Address: PhD.

1663. Roberts, Paul Craig. 1996. Abetting U.S. competition. *Washington Times (DC)*. Sept. 5 p. A15.

• **Summary:** The author alleges that the FBI has teamed up with ADM's competitors in the market for lysine, a feed additive. "Prior to ADM entering the business in 1990, the market was dominated by Japanese firms, Ajinomoto Co. and Kyowa Hakko Kogyo Co. In 1989 the price per pound was \$1.73. ADM discovered a cheaper way to make lysine, and the company's entry into the market resulted in prices falling roughly in half. During the five-year period, 1991-1995, the purchasers of lysine enjoyed cumulative savings of more than \$500 million dollars [sic]. ADM gained 40 percent of an expanded market and the big Japanese firms are licking their wounds."

The evidence shows a collapse in lysine prices, to \$1.08/b in 1991, down to \$0.82 in 1992, up a little to \$0.90 in 1993, up to \$1.14 in 1994, and down to \$1.05 in 1995. "As ADM is the low cost producer, it can undersell its competitors and has nothing to gain from a price-fixing agreement that would limit its market share." Address: Columnist, nationally syndicated.

1664. Kilburn, Monty. 1996. A brief history of Harvest Direct (Interview). *SoyaScan Notes*. Sept. 16 and 24. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Harvest Direct Inc. is a separate mail order company that has never been owned or even partially owned by ADM. Originally Harvest Direct was established as an arm of Jones and Thomas, an advertising firm in Decatur, Illinois, that did work for ADM (such as ADM's annual report). Jones and Thomas developed the first Harvest Direct

Catalog. In 1993 Jones and Thomas sold Harvest Direct to Roger Kilburn (Monty's father), who had been President of ADM's Soy Protein Division. Roger was kind of tired of working for a big corporation; he wanted to do something that was a little more flexible, where he didn't have to wear a suit to work every day.

In May 1995 ADM notified Harvest Direct that they were planning to remove the hydrogenated oil from their dry-mixed products; they planned to change only the ingredient listing and add one line asking consumers to add oil at home—more oil than was contained in the original product. Kilburn thought that this might confuse long-time customers, so he asked ADM if they would be willing to just continue the old formulation and private label the product for Harvest Direct—which had spent years promoting ADM's products. ADM had private labeled frozen burgers for Pillsbury's Green Giant but they refused to private label for Harvest Direct. ADM has also private labeled many of their other products, such as flours and oils. Kilburn's main concern that he had used his own money to promote ADM products for years, yet ADM was free at any time to sell these same products to Harvest Direct's competitors. So Kilburn decided to stop buying ADM's mixes, and instead buy only textured soy protein products (he now uses 3 types of textured concentrates and flours) from ADM and start making the mixes himself. He also decided to devote more energy to promoting the Harvest Direct brand and not promoting ADM—which wasn't too happy with this change.

After Kilburn had developed his own line of products, he had a taste panel test conducted at the University of Kentucky; the new Harvest Direct products were preferred to the former ADM products. By May or June 1995 Harvest Direct was selling the new line of products it was formulating, blending, and packaging "in house."

In Nov. 1995 Kilburn moved the company to Knoxville, Tennessee, where his son and daughter-in-law, Monty, and his wife, lived. Roger lives in southeastern Kentucky, which is about 1 hour's drive from Knoxville. Monty now handles the catalog side of the business and Roger handles the food manufacturing and other things. In July 1995 they introduced their own line of Harvest Direct "Protean" vegetarian burger mixes, which they are now marketing to health food stores across America. They have plans to manufacture an increasing percentage of the products they sell. An article was published in *Backpacker Magazine* on the advent of the company. Address: Catalog Director, Harvest Direct Inc., 505 West Depot Ave., Knoxville, Tennessee 37917. Phone: 1-800-835-2867.

1665. Sheridan, Margaret. 1996. Is tofu ready for the big leagues? *Los Angeles Times*. Sept. 26. p. H8, H10, H11.

• **Summary:** The article begins: "Tofu, the spongy off-white soybean cake that spells B-O-R-I-N-G for so many people, is about to get a marketing makeover. Slick packaging, toll-free

consumer hotlines, new products, and a blitz of cookbooks created by chefs rather than earnest vegetarian activists are some of the strategies tofu companies plan to use to bring tofu into the mainstream." A number of second generation tofu products found in supermarkets, and forthcoming cookbooks are listed.

"But some advertising and marketing professionals say that's not enough." The author talks with many such people who dislike tofu for various reasons: "Tofu is a joke... Tofu is a sissy. Bland, white, boring. It needs to take a stand. Become something. And that name! Its terrible." "Tofu goes against the American palate... Very little in American food, except baby food or gelatin, has that texture. Even buying tofu is alien. What else do you buy floating in water? And Americans love convenience. Bean curd is anything but. It's not an open-and-eat product." "I buy tofu but it just sits there, floating in my refrigerator. It makes me feel stupid and guilty. What do you do with it? I end up tossing it out." Hinoichi is America's largest tofu manufacturer. In March 1997 the company plans to move from its present 50,000 square foot plant in Los Angeles to a facility three times that size in Garden Grove. Harry Tanikawa, Hinoichi sales manager, notes that tofu and soy have been helped by good research and press from the medical community. He adds: "When you see fast-food places such as Panda Express in the shopping malls adding more tofu items to the menu, when you can buy a tofu hot dog at Dodger Stadium, you know tofu has arrived." Note: Dodger Stadium is a major league baseball park in Los Angeles.

Worthington Foods has experienced a sales rush in meat alternatives; the category went from nothing four years ago to \$150 million a year. The company's best-selling items, sold under the Morningstar Farms brand, are breakfast patties, sausage links, garden burgers, and spicy black bean burgers—according to Don Burke, executive vice president of sales and marketing. The people who buy Worthington products are "the masses, people who want to cut down a little on meat and saturated fat. Most are aging baby boomers who want taste, convenience, and a health benefit."

Tofu "recipes for the mainstream" include: Red flannel hash. Mushroom scrambler. Tofu-stuffed French toast. Tofu slaw. Tofu citrus shake. Tofu cheesecake (p. H11).

The article ends with two sidebars: 16 "Tofu do's and don'ts." Soy food: Its many looks (p. H11)—Defines different soyfoods: Tempeh, miso, textured vegetable protein (TVP), soy milk, soy flour, soy cheese, soy sauce, tamari. Address: Times staff/food writer.

1666. Harty, Rosalynne. 1996. ADM is bulking up: Company growing stronger with grain-based vitamins. *Journal-Register (Springfield, Illinois)*. Sept. 29. p. 47-48.

• **Summary:** ADM is now the world's largest processor of oilseeds and cereal grains, with 200 plants around the world, and a network of more than 200 grain elevators in the United

States. It also owns the largest private transportation system in North America, comprised of about 13,000 railcars, 2,000 barges, and 800 trucks.

In late 1995 at Decatur, Illinois, ADM started to mass-produce natural vitamin E, using a new, low-cost method that starts with soybean distillate—a product recently considered a liability since they had to pay to get rid of it; the company is now the world's largest manufacturer of this valuable vitamin. A single 55-gallon drum of pure vitamin E is worth about \$15,000.

1667. Archer Daniels Midland Co. 1996. Annual report. P.O. Box 1470, Decatur, IL 62525. 44 p. Sept.

• **Summary:** Net sales and other operating income for 1996 (year ended June 30) were \$13,314 million, up 5.1% from 1995. Net earnings for 1996 were \$695.9 million, down 12.6% from 1995. Shareholders' equity (net worth) is \$6,145 million, up 5.0% from 1995. Net earnings per common share: \$1.27, down 9.3% from 1995. Number of shareholders: 35,431.

On the cover of the report is color illustration of a stylized family farm. ADM now has a Web site at <http://www.admworld.com>. Page 4: A quotation by David Brinkley states: "Farmers are the only indispensable people in this planet."

"The American farmer is the most efficient [and most productive] in the world. which is why we enjoy the world's safest, most abundant and most affordable food supply. He is also the most productive. One American farmer feeds 212 people.

"In 1996, the U.S. will export \$65 billion worth of agricultural products, approximately 10% of which are exported by ADM and its affiliates, helping to generate over \$100 billion in economic activity and about one million jobs. The productivity of the farmer can help ensure world peace... Thanks to the 1996 farm bill, U.S. farmers will be able to respond to market conditions instead of government orders."

Soy protein is a fast growing area for ADM. Currently ADM is building plants in Decatur, Illinois, and Europoort, Netherlands, to make improved soy protein isolates. "Isoflavones are another exciting area. Isoflavones are trace components in plants (particularly soybeans) that are believed to have positive health effects. This is a promising new area, so this research group is seeing its share of exciting developments. Programs are in place to purify these components for future production" (p. 6).

"Natural-source vitamin E: ADM produces this antioxidant from soybeans and other oilseeds. Research shows that natural-source vitamin E is 36% more potent than synthetic vitamin E" (p. 6).

"ADM value-added products from soybeans: (1) Derived from soy protein: Concentrates, isolates, isoflavones, TVP\*, flour/grits, soy milk, Harvest Burgers\*, Harvest Burgers for Recipes\*, NutriBev\*; (2) Derived from soybean

oil: Vitamin E, lecithin, distilled monoglycerides, mono- and diglycerides, sterols." \* = Registered trademark (p. 7). Note: Each of these products is discussed in detail on pages 13-14.

"Isoflavones: Soybeans contain isoflavones, powerful phytochemicals that appear to be able to block the multiple processes that lead to cancer, heart disease, and other chronic degenerative diseases" (p. 12).

"Value-added products from soybeans:... Vegetarians have long been using soy as a protein source, but in light of the mounting evidence that soy foods have significant health benefits, Americans from all walks of life are trying to incorporate soy into their diets... Every day, ADM plants worldwide process over 2.6 million bushels of oilseeds, and with value-added soy products gaining in popularity in a number of industries, these products will continue to be in demand" (p. 13).

These soy products include: (1) "Distilled monoglycerides, derived from soybeans or other oilseeds, are used primarily as emulsifiers or as starch complexing agents in a variety of food applications. ADM monoglycerides are often used in baked goods, confections, extruded products and margarines to bring about or enhance desired characteristics" (p. 13).

(2) "Isoflavones: A relatively new area of interest is isoflavones (part of a group of substances called phytochemicals). The two predominant isoflavones found in soybeans are genistein and daidzein. Researchers at ADM and around the world are conducting studies that strongly suggest that isoflavones have significant health benefits. ADM is scaling up research and processing for the future production of this product" (p. 13).

(3) Lecithin: "Interest in lecithin has escalated worldwide due to recent research investigating its health benefits. Lecithin is most recently being touted as a nutraceutical, since the linoleic acid in lecithin is believed to possess health benefits. Expansions have been completed in both the Windsor (Ontario, Canada) and Europoort (Holland) facilities. Improvements are scheduled for the Hamburg, Germany plant and construction is progressing on the new deoiled lecithin plant in Decatur, Illinois. As the leading producer of lecithin, ADM is positioned to meet the world's growing demand."

(4) Natural-source vitamin E: "An antioxidant, vitamin E is reported to help protect cells from free radical damage, the type of damage that can lead to an array of degenerative diseases. A study in the *Lancet* [a prestigious British medical journal]... concluded that a dime's worth of natural-source vitamin E could reduce heart attacks by 75% when taken daily by those with bad hearts. The *New England Journal of Medicine* reported that postmenopausal women who ate a moderate amount of foods rich in vitamin E cut their chance of heart disease by almost two thirds." In order to keep up with the rising demand, ADM is increasing its natural-source vitamin E plant capacity by fifty percent. ADM is one of the

world's largest producers of natural-source vitamin E and also processes products that are good sources of vitamin E, including corn, canola, soy, sunflower, and peanut oils... By 1997, we will have the capacity to supply 300 million people with the current recommended daily allowance of vitamin E."

(5) "Soy protein: One of ADM's most important and versatile value-added products is soy protein. With increasing evidence of health evidence associated with soy foods, an increasing demand for soy protein products seems likely. To meet this rising demand, ADM is expanding its soy concentrate and isolate plants in Decatur, Illinois, and Europoort, Holland... Soy protein is finding success abroad in the consumer marketplace. In Canada, soy frozen desserts are being sold at Safeway grocery stores under the Lucerne Dairy label. In the U.K., a new soy milk plant is under construction to meet demand for a good tasting nutritious non-dairy beverage [probably made from isolated soy protein]. In Europe, VegeMince, VegeBites and VegeSteaks are being introduced by Haldane Foods, an ADM subsidiary. German consumers will be introduced to Frosta Medallions, soy protein and vegetable frozen patties available in four varieties." A large color photo shows a package of Green Giant Harvest Burgers for Recipes (p. 15).

"ADM European Overview: ADM owns the three largest tidewater oilseed plants in the world. They are located in Erith [on the River Thames just east of London], England; Rotterdam, Holland; and Hamburg, Germany."

Pages 22-23 contain maps of the USA and the world, with each of ADM's many locations clearly marked.

Page 37 discusses "Antitrust investigation and related litigation."

Pages 40-41: "Ten year summary of operating, financial and other data." Net earnings and net sales have more than doubled. Address: Decatur, Illinois.

1668. Callanan, Bob. 1996. *Soya Bluebook: Celebrating 50 years of service to the soybean industry (Ad)*. *Soya Bluebook Plus* 1997. p. 13-21.

• **Summary:** On the top two-thirds of each page is a brief history of the soybean in America from 1900 to the present, with emphasis on the work of the American Soybean Association, which was founded on 3 Sept. 1920 as the National Soybean Growers' Association by more than 1,000 people who attended the first "Cornbelt Soybean Conference" on a farm owned by the three Fouts brothers near Camden, Indiana. It was renamed the American Soybean Association in 1929.

To the left and right of this story on each page are two reproductions of full-page advertisements from existing companies that appeared in the Bluebook. The first four ads are from Anderson International (1947), Archer Daniels Midland Co. (1947), French Oil Mill Machinery Co. (1947), and Ross & Rowe, Inc. (1947, now ADM Lecithin).

The story contains many photos related to the ASA and soybean production and trade. For example: (1) A farmer on a horse-drawn cultivator in a soybean field from the early 1900s. (2) The front of the ASA offices in Hudson, Iowa. (3) Henry Ford in 1940 testing the strength of a soy-based plastic trunk lid on a Ford car by swinging an ax against it. (4) Mr. & Mrs. George Strayer in Oct. 1955 leaving for Japan by air from Waterloo, Iowa. (5) The floor of the Chicago Board of Trade in Oct. 1936 as the new soybean futures market opens. (6) An oceangoing freighter in the 1940s docked next to Central Soya Company's elevators in Chicago. (7) W.L. Burlison and C.M. Woodworth inspecting soybean variety demonstration plots at the University of Illinois.

Accompanying this history, on the bottom one-third of each page is a chronology from 1900 to 1997 that highlights major events of the companies that advertise in the *Soya Bluebook Plus*—even though those events may be of relatively little importance in soybean history. For example: 1905—H.R. Williams Mill Supply Inc., Kansas City, Missouri is founded by Harry Richard Williams. 1914—Universal Oil Products Co. (UOP), Des Plaines, Illinois, is established. Address: Communications Director, American Soybean Assoc. Phone: 314-576-1770.

1669. The Mail Order Catalog. Fall-winter 1996. Catalog of books and food. 1996. P.O. Box 180, Summertown, TN 38483. 24 p.

• **Summary:** The book section of this mail order catalog contains listings for an excellent selection of vegetarian and vegan cookbooks, plus books on food nutrition & health, alternative healthcare, women's healthcare, native Americans and their cultures, and animal rights.

The vegetarian food products section offers TVP granules and chunks, Response textured soy protein concentrates (misleadingly called "Response TVP flakes"), Harvest Direct vegetarian broth, and Protean, instant gluten flour (regular or flavored), seitan "chicken" or "sausage" mix, Mori-Nu silken tofu, Soja instant soy beverage, organic low-fat soymilk powder, Red Star nutritional yeast, Beano, and tempeh starter. Address: Summertown, Tennessee. Phone: 800-695-2241.

1670. Andreas, Dwayne. 1996. Re: Encourages stockholders to participate in election of Board of Directors plus several non-routine proposals. Letter to shareholders, Oct. 7. 2 p. Typed, with signature on letterhead.

• **Summary:** "In particular, the proposal dealing with board independence is a matter of great importance to ADM and its stockholders." Address: CEO, Archer Daniels Midland Co., P.O. Box 1470, Decatur, Illinois 62525.

1671. Caton, Greg. 1996. New developments at Lumen Foods (Interview). *SoyaScan Notes*. Oct. 8. Conducted by

William Shurtleff of Soyfoods Center.

• **Summary:** Greg is working closely with Dr. Suzanne Paxton, a doctor of pharmacy, of PNC–Preventive Nutrition Consultants. Her late husband, Herb Pierson, worked with the National Cancer Institute and is credited with coining the term “Nutraceuticals.” He was a pure scientist—not a promoter; he died at age 43, just 6 months ago—probably because of the many cancer-causing substances he was working with. He was especially interested in finding plant-based materials that were effective in curing cancer. On the health and medical benefits of garlic alone, he had something like 20,000 references. Many other people have come in and taken credit for his work. Herb and Suzanne’s research “made Wakanaga, and their Kyolic garlic supplement.” Wakanaga is a \$200 million a year garlic company headquartered in Japan.

For Lumen Foods Suzanne has just written a 29-page booklet on the latest developments in soy phytopharmacology. “She was one of the first to publicize the benefits of soy in treating menopausal symptoms. I don’t know anybody who knows more about phytopharmacology and the effects of soy and many other different vegetables. She is a world class authority—a very impressive person.”

Greg has just run a full-page color ad for Heartline Meatless Meats in the September 16 issue of *Time* magazine, which was mailed to 1 million women. Nine years ago he ran a one-third page ad in the December 1987 issue of *Prevention* magazine that reached 4 million readers. It barely paid for itself.

Greg’s business is still small, with sales projected to be about \$1 million in 1996. But during his first year in business, in about 1986, the company grossed about \$40,000. In the last few years the company’s sales have grown for \$350,000 to \$782,000 last year. Most of his growth in sales is from mail order. Now mail order accounts for about half of his sales; it used to be much smaller.

His low-fat Heartline products (named Heartline Lite) do not sell nearly as well as their regular counterparts; a 2 ounce serving of the latter, reconstituted, contains 83 calories (with 27 calories from fat) and 3 grams of vegetable oil, with no saturated fat or cholesterol. Thus, 32.5% of the calories come from fat. There is a very low rate of repeat sales for the low-fat or nonfat products.

Greg was motivated to start his own business because ADM (with whom he worked from 1981 to 1983) denied that there was any problem with flatulence from their TVP products. This was long before soy protein concentrates became popular. GNC (General Nutrition Corp.) created many dinners using TVP at their plant in Fargo, North Dakota, but after several years they realized that consumers were complaining a lot about the gas; so GNC dropped ADM, who at that time was doing a promotional titled “Uncle Archie’s”—which Greg was involved with. So Greg left ADM, did research on new soy products in 1985, then

founded the company in 1986.

Greg’s fastest growing product now, Stonewall’s Jerquee, is a deep-fried product, which has much of the fat subsequently removed by centrifuging. “People who eat a snack want to be wowed. They are looking for an experience. More and more we realize that we are in the experience business. This in the only product we make that is purchased by meat-eaters as well as vegetarians.

Greg now owns five companies; one of these designs and develops Web pages. “If you have to work for a living, your life should be an adventure.” Address: President, Lumen Food Corp., 409 Scott St., Lake Charles, Louisiana 70602-0350. Phone: 318-436-6748.

1672. Kilman, Scott; Burton, Thomas M. 1996. ADM’s guilty plea could doom Andreas reign. *Wall Street Journal*. Oct. 15. p. A3, A6. Western ed.

• **Summary:** ADM’s “agreement to plead guilty to two criminal charges and to pay \$100 million in penalties puts the government’s sweeping antitrust investigation behind it, but the arrangement could signal the end of the Andreas family’s reign over the grain-processing giant.” This fine is the largest ever in a criminal antitrust case. The two price-fixing charges involve lysine and citric acid. In total, including civil suits related to the price-fixing matter, ADM has agreed to pay a total of \$190 million in fines and civil settlements.”

The plea deal darkens the outlook for Michael D. Andreas (age 47; a dot-style illustration shows his portrait), the son of CEO and chairman Dwayne Andreas, age 78. The Justice Department is said to still be pursuing its case against the younger Mr. Andreas. His task of clearing his name is made harder by ADM’s pleas agreement, which requires the company to cooperate with federal investigators.

Yesterday ADM stock climbed to \$1.125 or 5.5%, to \$21.75, a record high, in large part because the \$100 million fine is much less than some Wall Street analysts thought it might be. As part of the plea agreement, the government agreed to close its price-fixing investigation of ADM’s high-fructose corn-syrup business, the biggest of the ADM products under government scrutiny. However, prosecutors are continuing their inquiry into the \$3 billion corn-syrup market.

Dwayne Andreas controls about 4.8% of ADM, valued at about \$520 million. He has a brother on the ADM board and two nephews who are senior ADM executives. ADM’s annual shareholders meeting is in Decatur, Illinois, this Thursday. Industry analysts speculate that Dwayne Andreas’s advanced age will force the new board to look outside ADM for a successor. Address: Staff reporters.

1673. Kilman, Scott. 1996. Two ADM officials targeted in probe, including Andreas’s son, leaving posts. *Wall Street Journal*. Oct. 18.

• **Summary:** Michael D. [“Mick”] Andreas, ADM’s 47-year-

old executive vice president, long groomed to eventually succeed his father as head of the company, is taking what the company called “temporary administrative leave.” ADM wouldn’t comment on whether Mr. Andreas would continue to collect his \$1.3 million annual salary.

Head of ADM corn processing, Terrance S. Wilson, age 58, is also retiring due to “progressive heart disease.”

These moves were announced after a sometimes contentious annual shareholders meeting yesterday. A company opposed resolution urging ADM to adopt a more independent board lost by a surprisingly close 58 to 42% vote. “The board’s independence became a hot issue at last year’s annual meeting, because the board’s close ties to Dwayne Andreas were widely blamed for an initially tepid response to the government’s price-fixing investigation. The board has long been dominated by insiders, Andreas’s relatives and longtime friends.” The new board, consisting of only 12 members, is seen as being more independent. Earlier this week top Justice Department officials had called ADM’s actions “shameful.”

CEO Dwayne Andreas, age 78, who has been chairman of ADM since 1972, has not been implicated in the price-fixing investigation. “The elder Andreas, who has brushed off the gravity of the scandal in past comments, apologized briefly to shareholders yesterday. ‘I consider this a serious matter which I, of course, deeply regret,’ he said. ‘The buck stops with me. You have my apology and my commitment that things are arranged so that this will never happen again.’”

Nevertheless these events severely restrict Dwayne Andreas’s plans to continue the Andreas family’s three-decade-long reign at ADM.

On the New York Stock Exchange, ADM stock fell 25 cents to \$20.875 a share. An illustration (dot-style) shows Michael D. Andreas. Address: Staff reporters.

1674. Moore, David. 1996. Shareholders react favorably to board proposal. *Herald and Review (Decatur, Illinois)*. Oct. 18. p. A1, A4.

• **Summary:** A summary of ADM’s annual shareholder’s meeting. “In January, a corporate governance committee recommended ADM bring more outsiders to its board and exclude executives’ relatives and people with substantial business dealings with the company. As a result, four ADM executives did not seek reelection on Thursday.” The names of ADM’s new board members are given, with a biographical sketch of each. Address: H&R staff writer.

1675. Ruminski, Bill. 1996. ‘The buck stops with me’: ADM Chairman Andreas apologizes to shareholders for price-fixing scandal; focuses on company’s future. *Herald and Review (Decatur, Illinois)*. Oct. 18. p. A1, A4.

• **Summary:** A summary of ADM’s annual shareholder’s meeting. Photos show: ADM Chairman Dwayne Andreas

(1995 photo). Union protesters in front of the company’s Lakeview office. Address: H&R Business Editor.

1676. Jenkins, Holman W., Jr. 1996. Business World: Hey Joel, this is the land of the free, remember? *Wall Street Journal*. Oct. 29. p. A23.

• **Summary:** This half-page editorial argues that ADM did nothing wrong in colluding with its competitors on lysine price and production. ADM had built a big, efficient lysine plant that added about 50% to world output. As expected, prices fell and nobody was making any money. The collusion simply made the industry more efficient. “If there is a lesson here, it’s that a narrow, fetishist focus on ‘competition’ for its own sake is misconceived. What makes any market economy work is freedom of contract and property rights.”

An illustration (dot-style) shows Michael Andreas.

Note: Holman W. Jenkins, Jr. is a member of the Wall Street Journal editorial board. He writes the twice-weekly “Business World” column. “Joel” refers to Joel Klein, the antitrust chief of the U.S. Department of Justice.

1677. ADM; Dixie USA. 1996. Mix up some meatless magic: Explore the delicious, versatile world of soyfoods with the Midland Harvest family of all-vegetable entrées (Ad). *Vegetarian Times*. Oct. p. 93.

• **Summary:** This full-page color ad shows Sloppy Joe Fixin’s mounded between two buns. A recipe for Southwest Bar-B-W Joe is given. The six dry mixes, whose packages are shown, are: Burger ‘n Loaf (Original, Herbs & Spice, or Italian Style). Chili Fixin’s. Sloppy Joe Fixin’s. Taco filling ‘n dip. The products contain only 0-5% fat, are cholesterol free, and “Contains fiber.”

“Easy to get the great nutrition and high protein of soyfoods into all your favorite dishes. Celebrate the great taste of soyfoods with Midland Harvest—Made by ADM, Supermarket to the World. For more information about Midland Harvest, refer to the Info Center page in this issue (p. 123) or for direct mail ordering, call Dixie USA 1-800-347-3494.”

1678. Jacobi, Dana. 1996. The natural kitchen: Soy! 75 delicious ways to enjoy nature’s miracle food. Rocklin, California: Prima Publishing. xii + 244 p. Oct. Index. 22 cm. Series: The natural kitchen. [16 ref]

• **Summary:** Contents: Preface. Acknowledgments. Introduction: Soy and health. All about soyfoods: Traditional soyfoods (tofu, miso, tempeh, soy sauce, soymilk), other Asian soyfoods (okara, yuba, kinako, natto), second-generation soyfoods (soy dairy products, soy deli foods, textured vegetable protein {TVP}, textured soy protein {TSP}, soy isolate (isolated soy protein)), more soy choices (fresh soybeans, dried black soybeans, soy flour, soy grits, soy flakes, soy nuts), cooking with soyfoods (tofu {pressing, freezing, marinating, sautéing and pan-crisping, frying,

braising, pureeing, parboiling, storing and handling tofu), miso, tempeh, soymilk, other soy dairy foods), cook's notes (herbs, spices and flavorings, nuts, oils, produce, stock, sweeteners).

Soups, appetizers, and first courses. Main dishes. Pasta and light dishes. Side dishes and sauces. Salads, burgers, and kebabs. Desserts. Breakfast and beverages. Mail order sources.

The Preface states: "If you are new to soy, you will find descriptions of soyfoods, from tofu to soymilk... If you already cook with soyfoods, the approximately 75 recipes in this book and their variations will expand your repertoire. These recipes will take you across lines that people who cook with soy rarely approach. The dishes bring familiar and satisfying textures along with flavors that are full and deep. Whether ethnic or classic, they are dishes with verve and elegance." The author first tasted tofu, with her parents, in 1953, "at the precocious age of eight," at The Great Shanghai on 125th St. in Manhattan, New York City. Address: Food writer, New York, NY.

1679. *Ontario Soybean Growers' Marketing Board Newsletter*. 1996. Record soybean crush. Oct. p. 9.

• **Summary:** "Ontario's two soybean processors crushed a record 1,252,300 tonnes (46,000,000 bushels) of soybeans during the 1995 crop-year (September 1995 to August 1996). This is 12% higher than the 1994 crop-year crush of 1,121,900 tonnes and 14% more than any crop-year in the 1980's when three processing plants were in operation.

"Both ADM Agri-Industries Ltd. in Windsor and CanAmera Foods Ltd. in Hamilton have invested heavily in upgrading their soybean processing plants in recent years. Soybean crush capacity will increase further this winter as CanAmera brings additional new equipment on line." Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

1680. *ASA Today (St. Louis, Missouri)*. 1996. Q&A with ASA: Interview with Marty Andreas, Senior Vice President, ADM. 3(2):2, 5. Dec.

• **Summary:** Q: "What is the market outlook for edible protein products and commercial and industrial application for soybean meal and oil?"

Ans: "We think a couple of things will drive the continued growth of the soy protein business. First, the population growth throughout the world plays a big part in the expanded use of soy protein. The statistics on increased population are staggering. Last year, the world's population increased by 100 million people. Most parts of the world have fat sources available, such as palm or coconut oil, and many parts of the world have carbohydrate sources available such as rice, maize and wheat. The thing they're most lacking is protein. A second issue to consider is the trend toward healthier diets. When it comes to providing large volumes of nutritious foods for the expected population

increase, we think soy protein has a very big role to play. In developed countries, much emphasis has been focused on improved nutrition. Cholesterol and fat are public enemy number one—and our soy proteins will allow us to come up with consumer products where the protein has replaced the animal fat in the product."

Q: "ADM's style of management is similar to the Walt Disney approach of excitement and a vision for the future. What is your vision for agriculture's future?"

Ans: "I'd like to say that 25 years ago we had the vision to see what was on the horizon, but in all honesty, we didn't. In fact, what we have done is look at the new developments as they relate to agriculture and try to build plants and bring new value-added products from these crops that weren't available five years ago. We deal with all avenues of consumer consumption, whether its energy for the body in the form of food, or energy for an automobile in the form of fuel. One of our visions is the tremendous opportunities in Asia—particularly in China. With a country that has a population of 1.2 billion people—and growing at the rate equal to one Australia per year, or two Canada's every 20 months—we're talking about something the world has never seen before. The Chinese economy has grown 10 to 12 percent in the last three years, which is creating a huge machine that needs to be fed. That is very good news for American soybean and corn growers."

Three small photos show Marty Andreas.

1681. Holin, Fae. 1996. Getting sneaky with soy: How to use tofu without a family strike. *Soybean Digest*. Dec. p. 23, 27. In "Soyfoods Special Report" section.

• **Summary:** Describes how registered dietitian Anne Patterson slowly introduced tofu to her family, starting with desserts. She and her husband, Jim, own corn and soybean acreage in Illinois. Jim "doesn't really like to see white tofu," so Anne always disguises it—as by putting it in lasagna in place of ricotta cheese, or in other baked or main dishes to reduce the amount of oil or eggs used. She notes that the new lite or low-fat tofus are excellent. Also describes how to use tempeh, soy flour, soy beverage (soy milk) and TSP (TVP). Her family also likes the commercial soy burgers now widely sold in mainstream grocery stores.

Contains recipes for: Strawberry tofu fruit dip. Tofu basil pasta sauce on fettuccine.

1682. McCracken, Christine L.; Shimoda, Sano M. 1996. Archer Daniels Midland Company (NYSE: ADM). Orinda, California: BioScience Securities, Inc. 36 p. Dec. 12. 28 cm.

• **Summary:** This financial analysis of ADM recommends that investors "Buy" the stock. The analysts believe that ADM is poised to move to a new level of earnings growth led by strong international growth and expansion of their value-added product line. They believe ADM stock has the potential to appreciate 25-35%, to \$26-30 per share on the

next 12-18 months. Over the longer term of 24-36 months the stock could increase in value by 50-60%, to \$30-35 per share. Address: 2 Theatre Square, Suite 210, Orinda, California 94563. Phone: 510-253-9520.

1683. Frontline. 1996. So you want to buy a president? Television broadcast. PBS \*

• **Summary:** Investigates the expected \$500 million flowing into the 1996 presidential campaign. Correspondent Robert Krulwich examines the generosity of the major players; one of these is Dwayne Andreas of ADM.

Contents: Editor's note: The Players. The Interviews. A citizen's guide. Money charts. Tapes & transcripts. Produced by WGBH, Boston.

1684. Gelles, Carol. 1996. 1,000 vegetarian recipes. New York, NY: MacMillan. [vii] + 598 p. Index. 24 cm.

• **Summary:** In the Introduction, a section titled "Soy products" (p. 17-18) includes brief definitions of soybeans, bean curd (tofu), miso, seitan, soy flour, soy milk, soy nuts, soy sauce and tamari, soy sprouts, tempeh, and textured vegetable protein (TVP).

In the chapter on "Entrees" is a section (p. 217-27) is titled: "Tofu, tempeh, seitan, and textured vegetable protein (TVP)."

The index contains 20 entries for tofu, 5 each for tempeh and soybeans, 4 for textured vegetable protein (TVP), 3 for seitan, and 1 for miso.

A table (p. 14) gives the time to cook various types of beans (that have been soaked overnight, the soak water discarded, and fresh water added) in a pot or saucepan (not in a pressure cooker); the adzuki bean takes the shortest time (45 to 90 minutes) while the soybean takes by far the longest time (2½ to 3½ hours [which is not nearly long enough]). Herein lies one key reason that Asians strongly prefer soyfoods to whole soybeans. Address: Author, food stylist and recipe tester, New York City.

1685. Harvest States Cooperatives. 1996. Yesterday, today & tomorrow. St. Paul, Minnesota. 21 p. 28 cm.

• **Summary:** Contents: Our mission. Forward. The beginnings. The 1930s. The 1940s. The 1950s. The 1960s. The 1970s. The 1980s. The 1990s. And beyond. "When the best leader's work is done, the people say, 'We did it ourselves!'"

The page titled "The Beginnings" notes that at the turn of the 20th century, "after years of battling grain merchants, bankers, and railroads, farmers in the Midwest and Pacific Northwest took important organizational steps in their quest for fair prices for their commodities and more control over how they were marketed."

In 1908, farmers came together in Minneapolis, Minnesota, to form the Equity Cooperative Exchange as a grain terminal marketing agency. The Exchange, whose

headquarters were later moved to St. Paul, had but a short life." In 1923, after a series of operating losses, its directors voted to place the cooperative in receivership.

"From the Exchange's ashes in 1926 rose the Farmers Union Terminal Association (FUTA)..." It survived until the hard years of the Great Depression in the 1930s. The Farmers Union Grain Terminal Association (also called GTA) was incorporated by FUTA in anticipation of the demise of Farmers National Grain Corporation, a nationwide cooperative. GTA officially opened for business on 1 June 1938 at 1923 University Avenue in St. Paul, Minnesota. "Headed by M. W. Thatcher as general manager, the new organization listed 121 local associations as members. Its facilities consisted of one terminal elevator (Elevator 1 in St. Paul) and two branch offices." Photos show Elevator 1 and GTA's original headquarters in St. Paul.

The sections titled "The 1940s" and "The 1950s" describe the growth and expansion of GTA. "In 1942, GTA made its entry into the value-added arena by purchasing Amber Milling (see photo) in Rush City, Minnesota, a maker of durum wheat flour and semolina." a

The page, titled "The 1960s, begins: "GTA opened the new decade on a fast track The 1960 purchase of the Honeymead soybean processing plant at Mankato, Minnesota, and the ADM Commander elevator line in Southern Minnesota marked a major expansion for the cooperative. The acquisition of the Honeymead facility was just the start of what has proved to be an almost continuous expansion of the cooperative's presence in value-added operations.

"Also in 1960, GTA Feeds began building feed plants to increase service to patrons in North and South Dakota and opened its research farm and main office in Sioux Falls, South Dakota.

"Installation of the first electronic computer at GTA's headquarters was another important addition to the organization as the decade began.

"In 1961, GTA purchased the Minnesota Linseed Oil Co. at Fridley. Later made part of the Honeymead operation, the plant processed flaxseed into linseed oil and sunflower seed into sun oil.

"For NPGG, the early part of the decade brought a new member investment program aimed at financing the cooperative's expanded presence in grain exports. The 1962 dedication of the new export terminal at Kalama, Washington, on the lower Columbia River, culminated years of effort to give Northwest producers more marketing strength by providing a farmer-owned gateway to the rapidly expanding Pacific Rim market."

"With the decade's emphasis on exports, GTA joined with six other regionals to begin construction on a five million bushel export elevator at the port of New Orleans [Louisiana] on the lower Mississippi River. The operation, known as Farmers Export Co. (FEC), provided an important

new export artery to its farmer-owners in time for the Fall 1968 harvest.” One photo shows an oil tanker on wheels. On the side is written, in large letters, Honeymead Products Company: Mankato, Minnesota.

“The 1980s.” “June 1, 1983, marked a major milestone in the history of cooperative grain marketing in the United States with the combination of GTA and NPGG [Northern Pacific Grain Growers] in Harvest States Cooperatives.” Address: [Mankato, Minnesota].

1686. Melina, Vesanto; Forest, Joseph. 1996. *Cooking vegetarian*. Toronto, Canada: Macmillan Canada. xi+ 212 p. + 8 unnumbered pages of color plates. Illust. (some color). Index. 25 cm. [9 ref]

• **Summary:** The index contains 14 entries for tofu, 2 each for tempeh, for textured vegetable protein (TVP), and for miso soup, and 1 each for soy milk and for teriyaki sauce.

On page 3 is a “Vegetarian food guide” in the form of a series of four arcs. The largest, outside arc is for grain products, the next largest is for vegetables & fruits, the third largest is milk and alternatives which includes tofu, dairy products (milk, yogurt, and cheese), and beverages [such as soy milk] fortified with 150 mg of calcium per serving, the fourth and smallest arc is beans & alternatives, which includes legumes, tofu, meat substitutes, tempeh, nuts and seeds, and soy milk.

On the back cover is a brief biography and portrait photo of each author. This book generally advocates a plant-based (vegan) diet but does include milk, milk products and eggs as alternatives. Melina Vesanto, whose “way of eating has now become totally plant-based (vegan)” was born in 1942. Address: 1. Dietitian, university and college teacher, and government consultant; 2. Chef and food consultant based in Vancouver.

1687. Kilman, Scott. 1997. Bountiful harvest: Giant Cargill resists pressure to go public as it pursues growth. Largest private firm in U.S. has quietly succeeded as a global presence: Some heirs want to cash in. *Wall Street Journal*. Jan. 9. p. A1, A4.

• **Summary:** Cargill executives have learned that it takes patience and long-term thinking and planning to succeed in commodities trading and processing. They don’t want to “worry about some analysts’ expectations for the next quarter.” Cargill is an excellent example of the benefits of being private. It is often difficult to explain long-term plans to investors, especially after years of losses. Yet in the end many pay off in a big way—such as developing demand for fertilizer overseas. Cargill can take risks a publicly held company dare not take. The largest U.S. closely held company, and the 9th largest U.S. company overall, Cargill has annual revenue approaching \$60 billion. Cargill is active worldwide; it has assets of \$8 billion in 65 foreign nations and it trades with nearly 100 more. About 40% of the firm’s

assets are overseas—compared to only about 18% for arch-rival ADM, which nevertheless calls itself “Supermarket to the World.” Today Cargill is riding a boom in global demand for food, and is the only U.S. company that can rival the huge old trading houses of Japan and Europe. It controls 25% of U.S. grain exports.

Most of Cargill’s stock is owned by about 80 members of the MacMillan and Cargill families, which were united by marriage a century ago. But now a contingent led in part by heir Austen S. Cargill is forcefully advocating taking the company public so they can sell their shares; the market value is estimated at \$12 billion. They have little interest in the family tradition of toiling in obscurity. In 1865 William Wallace Cargill, son of a Scottish sea captain, founded Cargill as a frontier grain elevator. His descendants have generally devoted their lives to the company, often starting at the bottom in obscure places.

Micek wants to keep Cargill private. He gives many good reasons. An illustration (dot-style) shows Ernest S. Micek. Three graphs show figures from 1986 to 1996: (1) Cargill sales have grown from \$32 billion to \$57 billion. (2) Net income has increased from \$230 million to \$870 million. (3) Employees have risen from 45,000 to 79,000. Address: Staff Reporter, Wall Street Journal.

1688. Standard & Poor’s (S&P). 1997. Stock report: Archer-Daniels-Midland (ADM). New York, NY. 5 p. [9 ref]

• **Summary:** Contents: An interesting and complex graph shows ADM stock performance on the Standard & Poor’s stock index. The stock has risen from about 13 in Aug. 1993 to 22¼ at present. The S&P opinion is “Hold (\*\*\*)” Overview. Valuation. Key stock statistics. Business summary. Important developments. Capitalization. Table of key financial and operating statistics from 1987 to 1997. This includes: (1) Per share data. (2) Income analysis. (3) Balance sheet and other financial data. Wall Street consensus: Analysts’ recommendations. Industry outlook. Other industry participants. News headlines—from 16 July 1996 to 23 Dec. 1996. The latter largely involve the U.S. Department of Justice antitrust investigation of ADM for price fixing. ADM’s stock continued to rise during and after this investigation.

1689. Smith, Michelle. 1997. Members of the Soyfoods Association of North America (as of 12 Feb. 1997). Walnut Creek, California. 1 p. Feb. 12. Unpublished typescript.

• **Summary:** The Association has 35 paid members. Two of the companies (Devansoy and MLO Products) have two people listed from each company. The companies are: ADM—Jack Painter, Eden Foods—Sally Gralla, Devansoy—Elmer Schettler & Ed Pedrick, Lightlife Foods—Rick McKelvey, MLO Products—Ed Cabelera & Ryan Schmidt, Pulmuone—Seung Hoon Lee, SunRich—Allan Routh, Sacramento Tofu—Alvin Kunishi, American Miso—Don DeBona,

Tofu Shop–Matthew Schmit, Turtle Island–Seth Tibbott, Vitasoy–Yvonne Lo, Westbrae–Myron Cooper, American Soy–Tim Redmond, Clofine–Richard Eluk, International ProSoya–Dusty Cunningham, Monsanto–Molly Cline PhD, MYCAL–Terry Tanaka, Natural Products–Paul Lang, Pacific Soybean–Dan Burke, Alfred College–Charles Goubau, Ohio Soybean Council–Jim Kapp, Iowa Soybean Association–Kirk Leads, Iowa State University–Dr. Lester Wilson, Mark Messina PhD, Nebraska Soybean Board–Stephanie Lynch, EMB Partners–John Eastham, Nutrition Advantage–Anne Patterson R.D., Soyatech–Peter Golbitz, Soyfoods Center–Bill Shurtleff, Apple Valley Market–Gary Pappendick, Essene–Howard Waxman, Sevananda–Vince Hoffman. Address: Executive Director, Soyfoods Assoc. of North America, P.O. Box 3179, Walnut Creek, California 94598. Phone: 510-935-9721.

1690. Kilman, Scott. 1997. Who's news: ADM's Andreas gives up CEO post to nephew. *Wall Street Journal*. April 18. p. B17 (West). Or p. B2 (East).

• **Summary:** Dwayne Andreas, age 79, is surrendering his long-held post as CEO to a nephew, G. Allen Andreas, age 53. Andreas will continue as chairman but ADM officials expect him to play a much diminished role in the company he has run since 1970. Mr. Andreas said he was willing to give up this position in part because he hasn't directly supervised ADM's daily operations for years; rather he has concentrated on mapping ADM's long term strategy.

A lawyer, the younger Andreas was treasurer of ADM before he was chosen to run ADM's vast London-based European operations. Michael D. Andreas, long groomed to become CEO, took a leave of absence from ADM in October 1996 after he was identified as the prime target of federal antitrust and price-fixing investigations. He is now awaiting trial in May 1998. That scandal has cost ADM \$190 million.

"ADM announced yesterday that Andrew Young, former U.S. Ambassador to the United Nations and former mayor of Atlanta [Georgia], was named director. Mr. Young, 65, fills a vacancy created by the retirement of Lowell Andreas, 74, a brother of Dwayne Andreas.

"ADM said its directors increased the number of shares to be repurchased under the company's buyback program to 45 million shares from 25 million, and extended the buyback program until October 1999.

"In New York Stock Exchange composite trading, ADM rose from 12.5 cents to \$17.625 a share." Address: Staff reporter.

1691. Kilman, Scott. 1997. ADM seeking more acquisitions; Michael Andreas is still on payroll. *Wall Street Journal*. April 22. p. B4 (East).

• **Summary:** G. Allen Andreas said he expects ADM increasingly to buy the commodity processing plants that are being divested by cost-cutting branded food companies.

Some of these purchases will be overseas. Recently ADM paid \$258 million for a 22% share of Gruma SA, the largest tortilla maker in Mexico.

Mr. Andreas said that his cousin, Michael D. Andreas, is still working for ADM as a consultant at his old annual salary of \$1.3 million, even though he is on a leave of absence while awaiting trial on a price-fixing charge. The company also plans to reimburse Michael Andreas for any legal expenses.

ADM's profits have been down for a year because of high grain prices, but they are expected to recover in the fiscal year ending in June 1998. ADM's profits on its synthetic lysine are soaring due to strong interest from Asian livestock producers. The price has doubled since this time last year, to \$2.30 a pound. The stock price closed at \$18. Address: Staff reporter.

1692. Golbitz, Peter. 1997. Agricultural biotechnology still a hot topic. *Bluebook Update (Bar Harbor, Maine)* 4(2):1-2. April/June.

• **Summary:** "It's been five months now since the first crops of genetically engineered soybeans, corn and cotton were harvested from U.S. fields. Although the dust has certainly settled by now, the debate over this technology's effectiveness and safety has yet to be resolved.

"The Crop Is In: 1996 was a pivotal year in the evolution of agricultural biotechnology. After years of research and development, government approval was finally received and genetically engineered seeds for three of the world's most important crops were planted in the United States.

"Perhaps the most highly publicized of these has been Monsanto Company's Roundup Ready (RR) soybeans. These seeds are genetically altered to be resistant to the company's popular glyphosate-based herbicide Roundup. According to Monsanto, roughly one million acres were planted in the U.S. last year. Now that the harvest is completed, Monsanto has been able to evaluate the performance of RR soybeans.

"First Year's Report Card: Numerous factors will affect soybean yield including variety, location and environmental factors. According to preliminary data collected from more than 75 locations in the Midwest, soybeans growers who planted RR soybean varieties and used Roundup as a weed control agent, experienced a yield advantage of approximately 5 percent, or nearly two bushels per acre.

"In addition to the crop yield data, Monsanto surveyed more than 1,000 farmers in November who used RR soybeans. These soybeans met or exceeded the expectations of 90 percent of the growers. More good news for the company was the finding that 79 percent said Roundup Ready soybeans represented a 'good' or 'very good' value and that 88 percent will either 'probably' or 'definitely' replant them next year.

"Monsanto expects 8 to 10 million acres of RR soybeans

to be planted in the U.S. in 1997. That figure represents 13 to 16 percent of the estimated 64 million acre crop. In addition, 300,000 acres of RR soybeans have been planted in Argentina and field trials are scheduled to begin in Brazil later this year.

“Monsanto had also predicted that planting RR beans would significantly reduce the total amount of herbicide needed per acre to resist weeds. This result was confirmed in a report prepared for Monsanto by the independent agricultural market research firm, Sparks Companies, Inc. Records of RR soybean fields when compared to records of soybean fields with other herbicide programs, testified to reductions in herbicide usage which ‘ranged from a high of 39 percent in the Southeast to a low of 9 percent in the East Central region of the United States. In the West Central region, herbicide usage was reduced by 16 percent, and in the Mid-South by 31 percent.’

“Opposition Still Strong: This environmentally positive result will likely do little to reduce the opposition for this technology by groups such as Greenpeace and The Pure Food Campaign, which are calling for a complete ban of all genetically engineered crops and food products. The ‘Genetic Engineering Briefing Pack’ published by Greenpeace in January 1997, contains a detailed list of their reasons for opposition to genetically engineered seeds. This report, based on their perceptions of the environmental costs of this technology, states a fear that ‘the world as we know it will end.

“Many of Greenpeace’s reasons are based on valid concerns for the environment, however, in the view of some onlookers, the credibility of their message has been diminished by their radical demonstrations. Last November, Greenpeace launched a series of protests in the U.S. against grain giants Cargill and Archer Daniels Midland which included actions such as blocking cargo ships and chaining themselves to barges at an unloading facility.

“An editorial entitled, ‘Unpalatable’ in the *Wall Street Journal* of November 21, 1996 described these and other ‘lobby’ methods as a basis for labeling the group as ‘crazies.’ In direct reference to the same type of ‘emotional’ Greenpeace activities *Soybean Digest* editor, Syl Marking asked, ‘Will Science Win Over Crackpots?’ in his editorial of January 1997.

“In Europe, there have been widely publicized actions by Greenpeace, as well as by certain European country governments. Responding to consumer concerns and pressure, Austria and Luxembourg have currently placed a ban on the importation of Bt corn from Novartis (formerly Ciba-Geigy). France has lifted its restriction on the importation of the corn, but prohibited the planting of gene modified seed in France.

“There is widespread debate in Europe regarding the labeling of foods which contain genetically modified material. This discussion washed back on U.S. shores when a

major natural food retail chain asked its suppliers to specify which of their products were made from genetically modified ingredients.

“All of the issues surrounding biotechnology will take time to sort out and resolve but one point seems to be clear—genetically engineered crops will play an ever increasing role in U.S. and world agriculture and food production.

“There are many references on the Internet for information on biotechnology—here are a few.”

Dictionary of Science and Biotechnology

<http://biotech.chem.indiana.edu/pages/dictionary.html>

The Biotechnology Information Center <http://www.nal.usda.gov/bic/>

Biotechnology Information Institute <http://www.bioinfo.com/biotech/>

Global Agricultural Biotechnology Association <http://www.lights.com/gaba/>

Greenpeace International Home Page <http://www.greenpeace.org/>

Monsanto Company <http://www.monsanto.com/cropprotection/>

A photo shows Greenpeace activists, outside the Brussels headquarters of Unilever, standing below a large sign that states: “No Genetic Experiments with our Food.”

1693. *Healthy & Natural Journal* (Sarasota, Florida). 1997. Creative cooking with soy: Flash! Even kids like soy foods! 4(2):58-59. April.

• **Summary:** These six recipes and three color photos are courtesy of the Indiana Soybean Development Council. For a brochure featuring these and other soy recipes, contact them at 1-800-735-0195. Recipes call for: Silken tofu (3). Soy milk. Roasted soy nuts. TVP textured vegetable protein. Cooked whole soybeans.

A sidebar titled “Flash! Even kids like soy foods!” is compiled from the American Dietetic Association and other sources.

1694. Buchheim, Steve. 1997. New developments at ADM. Thoughts on the use of genetically engineered soybeans in foods (Interview). *SoyaScan Notes*. May 22. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** About 3 weeks ago ADM announced that G. Allen Andreas (a nephew of Dwayne Andreas) is the new CEO of ADM. Dwayne Andreas, who had been CEO for many years, will continue to be chairman of the board. As a result of this change, Dwayne Andreas’ activities and involvement with ADM are not likely to decrease at all. A good article appeared in the *Wall Street Journal*. The main contribution of G. Allen “Allen” Andreas is that he understands “Wall Street,” and he understands that investors are not attracted by ADM’s perennially small dividend. Dividends may go up, as ADM pays more attention to Wall Street. ADM has never liked to borrow money—perhaps

because of Dwayne's Mennonite background. That may change. ADM has authorized a big "buyback" of ADM stock to raise the price. The family wants stock prices to go higher. Allen was in Europe for 15 years and he grew that part of ADM's business at an impressive rate. He is soft spoken, intelligent, and a "people person."

Concerning the price-fixing charges, lysine was \$1.40 a pound when ADM got into the business and \$1.08, when the government went after ADM for price fixing. Michael "Mick" Andreas, Dwayne's son, no longer works at ADM. He is apparently on "administrative leave," but still on the ADM payroll. He has an office in downtown Decatur; Steve has no idea what he is doing.

Steve does not agree with the criticism that ADM is a company that is run for the ownership, rather than for the shareholders. It is rather a question of management having free reign to make the decisions that are best for the company. Dwayne Andreas does not want others trying to force him and the board to do something to the company that he does not want to do. ADM uses its profits to build the company and expand assets. A buyer recently came from China and told top ADM management that he could give them orders for soybean meal and soy protein isolates that are ten times their corporate crushing capacity. ADM is just now finishing their fifth plant [its in Europe] to manufacture isolates; all of the production is sold out for two years. It is well known that Dwayne is one of the wealthiest Americans. What is less well known that his ADM holdings (shares) account for only about one-fifth of what he is worth. He was the largest single individual shareholder in Nabisco and they have been bought out twice. Dwayne doesn't operate for money; he now cares very much about his legacy.

Concerning genetically engineered soybeans: Almost all companies in the soybean industry are sitting on the fence and waiting to see what happens. By making non-GMO products available, you encourage and abet the whole process of diving the soy protein business into GMO and non-GMO, and you negatively affect all the other businesses that are contemplating going into genetic engineering.

Shurtleff argues: But the alternate position is not to do anything until there is a crisis and/or the voices demanding labeling of GMO ingredients get louder and louder. If you start soon to offer non-GMO soybean meal, isolates, and TVP, there are many huge benefits. You become the first company worldwide to do so. You diffuse criticism of genetic engineering in general and gain large amounts of goodwill (which ADM now needs) and free publicity as the leader in this area. As you offer these non-GMO products (responding to consumer demand) you make it very clear that you agree with consumers' right to know what is in their food, but that you also believe that GMO products are completely safe. Note: Soyfoods Center has recently received a number of calls from companies which use large amounts of soy protein isolates in soymilk, tofu, and other

food products, and which are in urgent need of an isolate that is guaranteed by the manufacturer to contain no genetically engineered soybeans.

Steve agrees with many of these ideas. ADM's position has always been that they are consumer driven and market driven; they respond quickly to demand. All smart businesses know they are consumer driven. If it is soy, ADM should be making it available in both GMO and non-GMO forms. One way to do this would be to create a new corporation (named, for example, New World Proteins), which is a subsidiary of ADM. They lease existing excess capacity from ADM, using facilities that crush soybeans and make soy protein products such as isolates and TVP. The new corporation says to ADM: "You will agree under contract to clean these facilities thoroughly and certify that they will be used only for non-GMO soy products. We will separately contract for the purchase of soybeans. You will crush and process them for me to my specifications, and we will market them. Nothing moves. Its very simple. The new corporation could be run by people who wouldn't even have to move their desks. It makes a lot of sense from a pure commercial/profit standpoint. It is the right and the smart and the responsible thing to do. Then we can follow the market whichever way the wind blows. We can take a position where we win either way. ADM could become the first in the world to take an enlightened, consumer-driven position on this issue. I personally believe deeply that consumers have the right to know what is in their food. It is a fundamental right. ADM has always been on the side of the consumer's right to know. Now we're putting our money where our mouth is.

There is a major problem out there, and this would be a solution that makes sense for ADM at this time. Steve is going to start talking with his superiors at ADM (such as Larry Cunningham, who has assumed Michael Andreas' responsibilities) about this, and he will keep in touch on new developments.

Much of ADM's current activity is in China, where the company has many joint ventures, and is building factories, teaching the Chinese new ways of using soybeans, etc. Address: Marketing Manager, Soy Protein Applications, Archer Daniels Midland Co., P.O. Box 1470, Decatur, Illinois 62525. Phone: 1-800-637-5824 X-5394.

1695. Walker, Ian. 1997. Soymilk and soybean crushing in Canada (Interview). *SoyaScan Notes*. May 26. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** It is quite the fashion now for big dairy companies (such as Neilson) to be selling soymilk under their own private labels. It is widely available in Canadian supermarkets—much more so than in U.S. supermarkets.

There are only two major soybean crushers left in Canada: ADM Agri-Industries Ltd. (Windsor, Ontario) and CanAmera Foods. But there are also about 4 "micro-crushers" who make "cold pressed" [mechanically pressed]

soybean oil, and low-fat meal (which they sell to ADM). Address: Colledge d'Alfred-Formation/soya, C.P. 580, 31 St. Paul, Alfred, ON K0B 1A0, Canada. Phone: 613-679-2218 X-309.

1696. Kilman, Scott. 1997. European food retailers want notice of genetically engineered U.S. crops. *Wall Street Journal*. May 30. p. A2, A6.

• **Summary:** "Several of Europe's largest food retailers are pressing U.S. grain shippers to identify genetically engineered [GE] crops—a demand that some traders worry might jeopardize two big U.S. exports to Europe: soybeans and corn." The British Retail Consortium and other retail trade associations have signed an open letter to U.S. grain exporters such as ADM and Continental Grain. If the U.S. companies don't act voluntarily, the letter warns, several EU member nations might require the complete segregation of GE crops from their traditional counterparts. Signatories include groups from Denmark, Finland, France, Germany, Sweden and the UK—incl. J. Sainsbury PLC, the UK's 2nd largest supermarket chain.

In March 1996 the European Union [EU] began permitting imports of U.S. GE crops. But Norway, which is not a member of the EU, has stopped importing U.S. soybeans.

Major U.S. exporters say it would be too expensive to segregate GE soybeans and corn, and it isn't necessary since the food from these plants is nutritionally the same as that from traditional plants. But the EU retailers want consumers to have freedom of choice. Address: Staff reporter.

1697. Brenner, Kyd D. 1997. Corn sweeteners—An American success story. *Executive Feedback—The Journal of Agriculture (Huntsville, Alabama)* 2(1):28. May.

• **Summary:** Corn was first processed for starch in 1847. "Corn sweeteners, in the form of a crude glucose syrup, were introduced in America in the late 1800s... While the introduction of purified, crystallized dextrose in the 1920s opened up new markets for corn sweeteners, it still did not bridge the sweetness gap with sucrose... These trends came together with the introduction of high fructose corn syrup (HFCS) in 1967." Address: Vice President, Corn Refiners Assoc., Inc.

1698. Haumann, Barbara Fitch. 1997. Soy protein foods gain store space. *INFORM (AOCS)* 8(6):588-596. June.

• **Summary:** Contents: Introduction. Nutritional drive. Meat alternatives. Soymilk and tofu markets. Soybeans as vegetables. Emerging products. Products consumers want. Hurdles. Possible health claim? ("there have been discussions by soy interests of pursuing a health claim [from the FDA] on food labels"). School lunch opportunities (federal school lunch program). Product promotion. Nutraceuticals.

Soy protein foods sold in supermarkets are no longer targeted at only vegetarians; they're becoming mainstream products. Many U.S. consumers are decreasing their consumption of meat. USDA food intake surveys show that from 1977 to 1994 per capita beef consumption decreased 54% and pork consumption dropped 45%.

The leader in meat alternatives is Worthington Foods, which has seen sales rise approximately 20% in each of the past 3 years. Its Morningstar Farms brand, sold in frozen food sections in supermarkets and geared for mainstream consumers, represents 75% of the company's offerings.

PMS Foods, Inc. in Hutchinson, Kansas, is among the companies that make meat alternatives, including soy-based beef, chicken, ham, pepperoni, bacon, sausage-flavored crumble, sloppy joe mix, soy-based taco mix, and soy-based chili mix—which it sells wholesale, primarily to foodservice operations. Some of its products are used as ingredients in supermarket products—such as bacon bits and salad dressing mixes.

Steve Demos, founder and president of White Wave, jokes: "We're primarily a dairy without a cow. We 'milk' soybeans. Founded in 1977, the company now sells 54 retail products and produces about 125 tons a week of soy proteins via aqueous extraction. White Wave has up to 30 linear feet in the refrigerated sections in some natural food stores. White Wave has experienced 25-30% sales increases per year over the past decade.

The Soy Protein Council in Washington, DC, now has 3 members: ADM, Cargill Inc., and Central Soya; all produce soy protein concentrates, isolates, and soy flours. The council promotes the growth of the soy protein industry and works to broaden the acceptance of soy products in foods. The council's Web site is <http://www.spcouncil.org>.

Fourteen state soybean boards, the United Soybean Board, and the Soy Protein Council gave joined together to form the "Soy Protein Partnership," whose goal is to promote domestic soy protein use in human foods. Seven members of the partnership—the state soybean boards from Indiana, Iowa, Kansas, Michigan, Nebraska, Ohio, and South Dakota—are providing \$270,000 to fund the partnership's first project, a "Food Manufacturer's Initiative." The group is using the slogan "New Food, New Uses: How soy protein can expand your business, to reach food marketing executives and food technologists and to increase their awareness of the demand for soy products and their use in food products.

Surveys by Wiese Research Associates have shown that consumer awareness concerning soy protein increased from 55% of consumers polled in 1991 to 79% in 1996. Likewise, those saying they were likely to purchase a product if they knew it contained soy protein increased from 20% in 1988 to 32% in 1996.

In addition, a national Gallup survey conducted in 1996 for the Nebraska Soybean Board showed that 56% of the 600 school foodservice directors polled currently use soy

products. And studies by the National Restaurant Association indicate that 97% of colleges and universities and 80% of restaurants have incorporated meatless entrees into their daily menus.

Schouten USA Inc. of Minnesota, whose parent company is the Schouten Group in the Netherlands, manufactures SoyLife, a soybean [sprout] extract containing 25-30 mg of isoflavones per gram. According to Laurent Leduc, Schouten USA's international marketing manager, it is presently used as an ingredient by more than 40 different vitamin and supplement companies as a source of isoflavones in their products, and is being incorporated into "functional foods" around the world. Leduc notes that research has indicated that consuming 60-80 mg of isoflavones a day may provide health benefits. He adds: "The only other way to get that much is by eating 8-9 ounces of tofu or drinking two-thirds of a liter of soymilk a day. The average American is not going to do that."

William Shurtleff of Soyfoods Center "said it currently is no longer usual to field questions from consumers in Midwestern states who would like to know how to incorporate soy as part of their diets to lower cholesterol.

"I credit much of this to the state soybean checkoff boards that are promoting interest in soyfoods, particularly in the heartland. This is changing the demographics for the market throughout the United States. Within the past two years, these boards have collectively become the single biggest force promoting soyfoods in America." Address: Senior editor/writer for INFORM.

1699. *SoyaScan Notes*. 1997. The soy protein concentrate industry and market worldwide (Overview). July 14. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** The following statistics were compiled, with permission, from one or more very reliable sources, which have asked to remain anonymous. Soy protein concentrates are produced by three different processes. The main one is the aqueous-alcohol wash. It gives "functional concentrates" which are more soluble in water, and have a higher water- and fat-holding capacity. The main manufacturers using this aqueous-alcohol wash process are: ADM in the USA—60,000 tonnes/year. ADM in the Netherlands 60,000 tonnes. Central Soya in the USA—60,000 tonnes. Central Soya at Aarhus, Denmark—27,000 tonnes. Sogip in France—12,000 tonnes. Solbar Hatzor Ltd. (formerly Hayes Ashdod) in Israel 10,000 tonnes. Subtotal: 229,000 tonnes/year.

The second process is the acid wash. The main manufacturers using this process are: Lucas Ingredients in the United Kingdom—3,000 tonnes/year. ADM in the USA—3,000 tonnes. Sanbra in Brazil—5,000 tonnes. Subtotal: 11,000 tonnes/year.

The third process is the acid leach: The only manufacturer is Sopropeche (*Sopropêche*) in France (Boulogne Sur Mer; the company also extracts protein from

fish)—6,000 tonnes/year.

Total of all three processes: 246,000 tonnes/year.

This market is expected to double in 4 to 5 years. It is the fastest growing of all the modern soy protein markets; by comparison, the market for soy protein isolates is almost stagnant. Central Soya, whose Promine brand of soy protein isolates used to be the market leader, no longer makes isolates, and now makes only soy protein concentrates.

1700. *SoyaScan Notes*. 1997. The soy protein isolate industry and market worldwide (Overview). July 14. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** The following statistics were compiled, with permission, from one or more very reliable sources, which have asked to remain anonymous.

Protein Technologies International (PTI) in the USA—70,000 tonnes/year.

PTI in Belgium—15,000 tonnes.

ADM—15,000-20,000 tonnes.

Fuji-PTI in Japan—10,000 tonnes.

Sanbra in Brazil—8,000 tonnes.

Others worldwide: 6,000 tonnes.

Total worldwide: 124,000 to 129,000 tonnes/year.

The soy protein isolate market worldwide is pretty stagnant—growing quite slowly. By contrast, the soy protein concentrate market is growing very rapidly, and is expected to double in the next 4-5 years.

1701. Kilman, Scott; Warren, Susan. 1997. DuPont to buy Ralston-Purina unit in building 'dirt-to-dinner' biotech line. *Wall Street Journal*. Aug. 25. p. A4, C2 (p. A8 East).

• **Summary:** DuPont signed a letter of intent to buy Ralston Purina's soybean processing unit, Protein Technologies International (PTI), for \$1.5 billion in DuPont stock. PTI makes high-protein powder from soybeans, "a hot-selling ingredient for everything from infant formula to supplemental nutritional drinks for senior citizens. Recent medical studies suggesting that soybean compounds inhibit growth of some cancer cells and reduce the risk of osteoporosis are fanning strong interest in them for use in 'nutraceuticals.'" DuPont, a giant chemical company, wants PTI to process the soybeans genetically engineered by the biotech joint venture it recently formed with Pioneer Hi-Bred International Inc. of Des Moines, Iowa, the nation's largest seed company; DuPont purchased a 20% stake in Pioneer for \$1.7 billion.

"Officials of the joint venture hope to design a soybean from which it is easier to extract isoflavones, a chemical with estrogen-like properties some researchers believe eases menopause symptoms." Industry observers were surprised at the high price (announced Friday) that DuPont offered to pay for PTI; it is more than 3 times the annual revenue of PTI, which last year had \$421 million in sales and \$85 million in operating profit. High offer fueled speculation that DuPont

had to outbid its biggest biotech rival, Monsanto Co., which is spinning off its flagship chemicals business as it gobbles up seed and biotech companies. Some Wall Street analysts think Friday's developments put pressure on Monsanto to form some sort of alliance with ADM to process its genetically engineered crops into food ingredients.

Although the soy protein market that PTI helped to create is growing at about 10% a year, Ralston says it is selling the unit because it doesn't have the biotechnology resources to take it to the next level. DuPont said it expects to reach a final agreement with Ralston this fall, subject to corporate and regulatory approval.

Ralston's stock advanced \$3.44 to \$91.68 with the sale. ADM stock rose \$0.94 to \$21.875.

Note: As of 16 Oct. 1998, PTI has decided to remain at its former offices at the Ralston Purina building in St. Louis, Missouri. It still uses the Ralston Purina library, etc.

1702. National Oilseed Processors Association. 1997. Yearbook and trading rules 1997-1998. Washington, DC. [iv] + 127 + 11 p. No index. 23 cm.

• **Summary:** On the cover (but not the title page) is written: Effective August 1, 1997. Contents: Constitution and by-laws. Officers and directors. Executive office. Members. Standing committees. Trading rules on soybean meal. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}), sampling of soybean meal {at origin} (automatic mechanic sampler, pneumatic probe sampler, probe sampler), sampling of soybean meal (at barge loading transfer facilities), official weighmaster application, semi-annual scale report, certification of installation of automatic sampler & mechanical divider (at origin), semi-annual certification of automatic sampler & mechanical divider (at origin), voluntary checklist for semi-annual certification of sampler & divider (at origin), certification of installation of automatic sampler & mechanical divider (at barge loading transfer facility), semi-annual certification of automatic sampler & mechanical divider (at barge loading transfer facility), voluntary checklist for semi-annual certification of sampler & divider (at barge loading transfer facility), official referee laboratories (meal), official NOPA soybean meal sample bag. Soybean meal export trading rules: Minimum blending procedures for export meal blended at ports, sampling of soybean meal (at vessel loading facilities), weighing of soybean meal (at vessel loading facilities), certification of installation of automatic sampler & mechanical divider (at vessel loading facility), semi-annual certification of automatic sampler & mechanical divider (at vessel loading facility), semi-annual certification of scales at vessel loading facilities. Trading rules on soybean oil. Sales contract. Definitions of grade and quality of export oils. Soybean lecithin specifications. Appendix to trading rules on soybean oil: Inspection, grading soybean oil for color (NOPA

tentative method), methods of analysis (A.O.C.S. official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses (iodine value, unsaponifiable, break test); refining byproduct lipid, acidulated (refining byproduct lipid and tank bottoms), official weighmaster application, semi-annual scale report, official referee chemists (oil). Soybean oil export trading rules. Uniform soybean oil export contract. Foreign trade definitions (for information purposes only) Appendix 1.

The section on officers, executive committee, and board of directors (p. 7-8) gives the name, company affiliation, and phone number of each person. Officers (executive committee)—Chairman: William B. Campbell, Central Soya Company, Inc. Chairman-elect: Richard Galloway, Quincy Soybean Company. Secretary / Treasurer: Albert J. Ambrose, Harvest States / Honeymead Processing and Refining. Immediate past chairman: John A. Burritt, Ag Processing Inc a cooperative.

Executive staff: President: Sheldon J. Hauck. Executive vice president: Alen F. Johnson.

Board of directors (alphabetically by company; each member company may have up to two representatives on the board; only the first of these may vote): James W. Lindsay & John A. Burritt, Ag Processing Inc a cooperative. John G. Reed, Jr. & John D. McNamara, Archer Daniels Midland Co. Archie Gwathmey & Charles Bussey, Bunge Corporation. Wayne Teddy & John March, Cargill, Inc. William B. Campbell & Carl Hausmann, Central Soya Co., Inc. James D. Tibbets & Al Ambrose, Harvest States / Honeymead Processing and Refining. Patrick E. Wright & Henry E. O'Bryan Owensboro Grain Co., Inc. Richard L. Wiley & L. Weldon Sander, Perdue Farms, Inc. Richard Galloway & Larry Horn, Quincy Soybean Co. Gerard A. Delatte & Richard E. Bell, Riceland Foods, Inc. Thomas L. Harper, Southern Soya Corp. Rodney Christianson & David Thompson, South Dakota Soybean Processors, D. Daryl Houghton & George C. White, Townsends, Inc. Cliff Meeuwsen & Arlen Meeuwsen, Zealand Farm Soya.

Executive office, Washington, DC: President, Sheldon J. Hauck (Email: shauck@nopa.org). Executive vice president: Allen F. Johnson. Director of regulatory affairs: David C. Allor. Executive asst.: Hady J. Nash. General counsel: Elroy H. Wolff, Sidley & Austin. Special consultant: C. Lockwood Marine, Ft. Wayne, Indiana.

Members (listed alphabetically by company; within each company, first the name of the official Association representative {who is on the Board and votes}, followed by the other personal members listed alphabetically by surname. For example, Archer Daniels Midland Co., the company with the most personal members, has 34. After the name of each personal member is given with his address and phone number. In the listing below, the number of personal members is shown in parentheses after the name of each company, followed by city and state of the various locations):

Ag Processing Inc a cooperative (25); Eagle Grove, Iowa; Manning, Iowa; Mason City, Iowa; Sergeant Bluff, Iowa; Sheldon, Iowa; Dawson, Minnesota; St. Joseph, Missouri. Omaha, Nebraska. Archer Daniels Midland Co. (23); Archer Daniels Midland Co. (34); Little Rock, Arkansas; Augusta, Georgia; Valdosta, Georgia; Decatur, Illinois; Galesburg, Illinois; Granite City, Illinois; Taylorville, Illinois; Frankfort, Indiana; Des Moines, Iowa; Fredonia, Kansas; Destrehan, Louisiana; Mankato, Minnesota; Red Wing, Minnesota; Kansas City, Missouri; Mexico, Missouri; Clarksdale, Mississippi; Fremont, Nebraska; Lincoln, Nebraska; Fostoria, Ohio; Kershaw, South Carolina; Memphis, Tennessee. Bunge Corp. (16); Decatur, Alabama; Cairo, Illinois; Danville, Illinois; Emporia, Kansas; Destrehan, Louisiana; St. Marks, Mississippi; Vicksburg, Mississippi; St. Louis, Missouri. Cargill, Inc. (19); Guntersville, Alabama Osceola, Arkansas; Gainesville, Georgia; Lafayette, Indiana; Cedar Rapids, Iowa; Des Moines, Iowa; Iowa Falls, Iowa; Sioux City, Iowa; Washington, Iowa; Bloomington, Illinois; Chicago, Illinois; Wichita, Kansas; Burnsville, Minnesota; Minneapolis, Minnesota; South Savage, Minnesota; Wayzata, Minnesota; Kansas City, Missouri; Fayetteville, North Carolina; Raleigh, North Carolina; Sidney, Ohio; Memphis, Tennessee; Chesapeake, Virginia. Central Soya Co., Inc. (11); Gibson City, Illinois; Decatur, Indiana; Fort Wayne, Indiana; Indianapolis, Indiana; Belmond, Iowa; Bellevue, Ohio; Marion, Ohio; Delphos, Ohio; Chattanooga, Tennessee. Harvest States / Honeymead Processing and Refining. (5); Mankato, Minnesota. Owensboro Grain Co., Inc. (4); Owensboro, Kentucky. Perdue Farms, Inc. (4); Salisbury, Maryland; Cofield, North Carolina. Quincy Soybean Co. (4); Helena, Arkansas, Quincy, Illinois. Riceland Foods, Inc. (5); Stuttgart, Arkansas. South Dakota Soybean Processors (3); Volga, South Dakota. Southern Soya Corp. (2); Estill, South Carolina. Townsend's Inc. (2); Millsboro, Delaware. Zealand Farm Soya (3); Zealand, Michigan.

Associate Members: AC Humco, Memphis, Tennessee. ADM Agri-Industries Ltd., Windsor, Ontario, Canada. Alfred C. Toepfer International, Inc., Minneapolis, Minnesota. Amber, Inc., Tarrytown, New York. C&T Quincy, Richmond, Virginia. CanAmera Foods, Oakville, Ontario, Canada. Columbia Grain & Ingredients, Inc., Wellborn, Florida. Commodity Specialists Company, Minneapolis, Minnesota. Con Agra Poultry Co., El Dorado, Arkansas. Continental Grain Co., Chicago, Illinois. ContiQuincyBunge, New York City, New York. Garnac Grain Co., Overland Park, Kansas. Hunt-Wesson, Inc., Fullerton, California. Iowa Select Farms, Iowa Falls, Iowa. Lipton, Englewood Cliffs, New Jersey. Louis Dreyfus, Wilton, Connecticut. Noga Commodities (Overseas), Inc., New York City. Oleostates, Inc., Tucson, Arizona. Pilgrim's Pride Corp., Pittsburg, Texas. Procter & Gamble Co., Cincinnati, Ohio. Schouten USA Inc., Minneapolis, Minnesota.

Standing committees: For each committee, the function of the committee, the names of all members (with the chairman designated), with the company and company address of each are given—Crusher committees: Canola, flaxseed, safflower seed, sunflower seed. International trade committee. Government and public relations committee. Industry and grower relations committee. Soybean meal trading rules committee. Soybean oil trading rules committee. Technical, research, environmental, and safety, health, and loss prevention (TESH) committee. Technical. Address: 1255 Twenty-Third St., N.W., Washington, DC 20037. Phone: 202/452-8040. Fax: 202/835-0400.

1703. *GMF—Genetically Modified Foods Market Intelligence (Genetic ID, Fairfield, Iowa)*. 1997. DuPont next big player in ag biotech. No. 12. Sept. 1. p. 1.

• **Summary:** “In a bid to join Monsanto and Novartis in the top tier of developers of new genetically engineered crops, Wilmington, Delaware-based DuPont Co. is building a biotech food empire through acquisitions.

“DuPont has acquired a 20% stake in seed producer Pioneer Hi-Bred International of Des Moines, Iowa, which will give it a marketing outlet for its new seeds that are genetically engineered for special nutritional attributes. Pioneer had previously turned down purchase offers from Monsanto.

“As part of a strategy to create a vertically integrated structure to deliver its products, DuPont is also acquiring the Protein Technologies International (PTI) unit of Ralston Purina Co. PTI is a leading producer of soy protein powders that are ingredients in a wide range of nutritional products from infant formula to soy burgers. PTI will be the vehicle for processing and selling DuPont's soybeans engineered to contain altered nutritional components such as proteins and fats.

“The *Wall Street Journal* of August 25 reported that some Wall Street analysts are now expecting an alliance between Monsanto and Archer Daniels Midland Co. to process Monsanto's genetically modified crops into food products.”

1704. Marcial, Gene G. 1997. Inside Wall Street: ADM isn't staying down on the farm. *Business Week*. Sept. 1. p. 83.

• **Summary:** Investment manager Wayne Nordberg, head of equity investing at Lord Abbett, which manages \$25 billion, believes that ADM stock will soon start to rise. The company is a good value, but it has fallen on hard times and is bereft of friends. He believes it will earn \$1.35 a share in the year ending 30 June 1998, and \$2 in 1999, and that it will be worth \$40/share in 12 to 18 months.

Why? 1. ADM has settled most of the big lawsuits brought by the justice department. 2. A turn-around in earnings is just 6 months away. 3. A joint venture with Monsanto is rumored to be in the works. Monsanto, with

sales of \$9.2 billion last year, could buy a stake in ADM. Nordberg says ADM's entry into bio-products (in which it has invested \$1.5 billion) fueled these rumors. Margins on bio-products such as vitamin E, beta carotene, and lysine are high, and return on assets could reach 20%. ADM has 60% of the \$600 million lysine market. 4. ADM has a "clean balance sheet and cash on hand of about \$2 billion." This gives ADM opportunities to invest more in its own businesses.

1705. Skiff, James. 1997. Update on INTSOY (Interview). *SoyaScan Notes*. Sept. 7. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Wilmot Wijeratne, director of INTSOY, left about 1½ to 2 months ago to take a private-sector job in Iowa. As far as Jim knows, no new director has been named.

Karl Weingartner of INTSOY sent Jim an e-mail stating that 6 million bushels of soybeans are used to make foods in the United States, and 20% of these are organically grown. Jim does not know how Karl arrived at these numbers, or what the definition of "foods" is. It probably does not include soy oil, and probably does include all the modern soy protein products such as TVP, soy protein isolates and concentrates, etc.

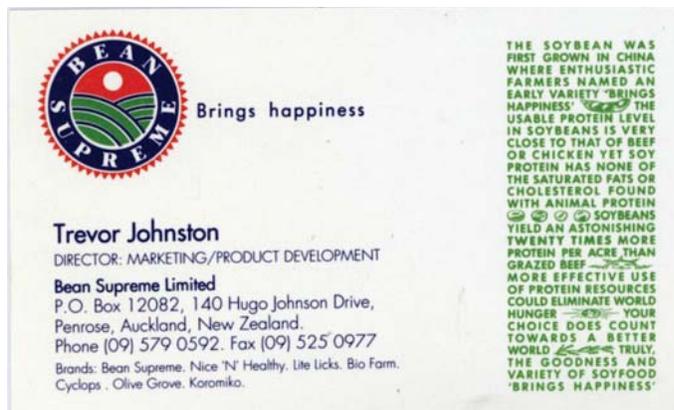
Note that in the book *Soyfoods Industry and Market, 5th edition* (1985, p. 41) Shurtleff and Aoyagi give a full-page table showing exactly how many metric tons of soybeans are used for each of the different types of soyfoods made in the USA. The total (not including soy oil) is 663,823 metric tons. Since there are 36.75 bushels per metric ton, this comes out to 24.4 million bushels. This figure from 1985 is more than 6 times larger than Weingartner's figure. Address: Cornbelt Foods, Inc., P.O. Box 218, Marshall, Minnesota 56258. Phone: 507-537-1406.

1706. Associated Press (AP). 1997. Company news: Archer Daniels to pay \$296 million for Moorman. *New York Times*. Sept. 13. p. 37.

• **Summary:** Yesterday the Archer-Daniels-Midland Co. (ADM, Decatur, Illinois) agreed to acquire the Moorman Manufacturing Co., a privately held agribusiness firm based in Quincy, Illinois, for at least \$296 million in ADM stock. Moorman said the precise number of shares to be exchanged would not be determined until three days before the close of the transaction. A spokeswoman for ADM confirmed that a deal had been struck but declined additional comment.

ADM "is an agribusiness giant with 1996 revenues of \$13.3 billion. Moorman has annual revenue of \$1.2 billion and employs 2,700 people in 35 states."

1707. Johnston, Trevor. 1997. Re: Update on Bean Supreme and genetically modified foods. Letter to William Shurtleff at Soyfoods Center, Sept. 22. 3 p. Handwritten, with signature on letterhead (fax).



• **Summary:** "The anti soy people are still alive and seem to appear in print as soon as there is any significant promotion of soy—even when it means rehashing old news (see enclosed).

"The parrot man [Richard James of Whangarei, New Zealand] still sends me hate mail—without stamps so my secretary unwittingly has to pay for the stamp.

"On a personal note—I remain very passionate about soy and grateful for your continued mentorship in this regard—albeit from a distance. Kind regards..."

On Trevor's business card is the colorful "Bean Supreme" logo followed by the words "Brings Happiness." Address: Marketing director, Bean Supreme Ltd., Box 12082, Penrose, Auckland, New Zealand]. Phone: 64 9 579-0592.

1708. Lightlife Foods, Inc. 1997. Eating healthy can be soy easy (Brochure). Greenfield, Massachusetts. 12 p. 22 cm.

• **Summary:** On the cover of this full-color, glossy brochure is a color photo of a meatless burger (between buns, with onion, tomato, and lettuce), a hot dog (in a bun, with a bead of mustard on top), and a plate of stir-fried tempeh with veggies. In the background are rolling soybean fields. In the foreground are three pods of green vegetable soybeans, and 15 whole dry soybeans.

Contents: Ten reasons to include soyfoods and soy protein in your diet (p. 2-3): 1. You will be in good company. 2. Lower your cholesterol. 3. Lower your risk of cancer. 4. Menopausal symptoms. 5. Soyfoods are nutritious. 6. A quality protein source. 7. Save our precious resources. 8. A variety of alternatives and greater availability. 9. Better quality. 10. Soyfoods are "in."

Glossary of common vegetable protein foods (p. 4-5): Tofu, tempeh, meat analogs, soymilk, soy cheese, soy flour, soy protein, textured vegetable protein (TVP), seitan, miso. A table shows each Lightlife product, serving size, and grams of soy protein (soy tempeh has the most at 24 gm per 4 oz serving, followed by Gimme Lean at 18 gm per 4 oz).

Products (with a brief definition of each) and mission statement (p. 6-7): Smart dogs. Tofu pups. Wonderdogs (The first low-fat vegetarian hot dog just for kids). Smart

deli slices (fat free). Foney baloney (Kids love it). Lean links sausages. Gimme lean (fat free). Marinated smoky tempeh strips (“Fakin’ Bacon”). Fakin’ bacon bits. Marinated tempeh “grilles” (soy tempeh patties in Tamari, Lemon, and Barbecue flavors). Lightburgers (fat free). Lightsausages (fat free). Tempeh (in 5 varieties–Soy, Three Grain {millet, brown rice, barley}, Garden Vegetable, Quinoa-Sesame, and Wild Rice), Savory seitan, Vegetarian request (100% vegetarian, all-natural entrees). A color photo shows many products in their packages.

Getting started (p. 8-10; how to use key products). About Lightlife (since 1979). Address: P.O. Box 870, Greenfield, Massachusetts 01302. Phone: 1-800-274-6001 Ext. 129.

1709. Ontario Soybean Growers’ Marketing Board (OSGMB). 1997. Overview of the Canadian soyfoods market. Chatham, Ontario, Canada: OSGMB. 44 p. 28 cm.  
 • **Summary:** This excellent, complete, and accurate market study was compiled by the Collège d’Alfred of the University of Guelph, under contract with the Ontario Soybean Growers’ Marketing Board (OSGMB). The project leaders were Suzanne Lavoie, Charles Goubau, and Ian Walker. The field research was conducted between Jan. 15 and Aug. 31, 1997. The first study of the Canadian soyfoods market was published in March 1990 (vi + 40 pages).

Contents: Acknowledgments. Summary. Introduction. Research procedures: Methodology, limitations (of the 100 companies in this study, over 75% were visited, interviews were conducted in person, and product samples were collected). The Canadian soyfoods market: History, structure of the Canadian soyfood industry, market highlights by region (The Maritimes, Quebec, Ontario, the Prairies {Manitoba, Saskatchewan, and Alberta}, British Columbia), factors influencing the soyfoods market (A closer look at Canadian demographic trends, a closer look at Canadian immigration trends, a closer look at vegetarianism and family food expenditure trends, research on soyfoods and their health benefits, the American influence). Supply and demand of soybeans for use in soyfoods: Soybean production in Ontario, imports and exports of soybeans, imports and exports of soy products, the soybean crushing industry in Ontario, consumption of whole soybeans by soyfood processors. Opportunities in the Canadian soyfoods market. Soyfood processors and their needs. Market opportunities for food-grade soybeans. Summary comments. Bibliography.

Tables show: (1) Major soyfood companies established in the province of Quebec (p. 13). (2) Major soyfood companies established in the province of Ontario (p. 16). (3) Major soyfood companies established in the province of British Columbia (p. 19).

(4) Percentage of change in units and sales of soyfoods by product in grocery stores in Canada between 1994 and 1996 (soy sauce, soy flour, soy oil, soymilk, tofu and meat

analogues). (p. 21). (5) Percentage distribution of population in Canada by province (p. 22. In 1996, 37.5% lived in Ontario and 24.6% in Quebec). (6) Percentage distribution of age groups–Canada (p. 22; In the 15-24 age group, 19% did not eat meat in 1992, down from 23% in 1986).

(7) Percentage of population who do not eat meat & share of budget spent on meat, Canada 1986 and 1992 (p. 28). (8) Canadian soybean: Supply and disposition (September–August crop year)–in metric tons (p. 31). (9) Canadian soybean exports by country of destination (p. 32. In 1997-98 some 325,000 tonnes went to the European Union, 145,000 to the USA, 85,000 to Japan, 40,000 to Hong Kong, 75,000 to other Asia, and 15,000 to other places).

(10) Imports and exports–All countries, dollar values (p. 33. The leading imports are soybean meal \$202.7 million, crude soybean oil \$16.75 million, and whole soybeans for oil extraction \$12.59 million. The leading exports are protein concentrates and textured protein substances \$9.1 million, soybean meal 6.5 million, and brans, sharps and other residues \$4.3 million).

(11) Soybean crushing facilities in Canada (p. 34. All are located in Ontario province; ADM Agri-Industries Ltd., Windsor. Capacity: 3,600 tonnes/day of raw soybeans. CanAmera Foods, Hamilton, 3,000. Helin Oil Packers, Whitby, 250. Started crushing in 1997. Cold Springs Farm Ltd., Thamesford, 100. Started 1995. Sunfield Oil Seeds, Wingham, 100. Started 1994. Dennis Jackson Seeds Services Ltd., Dresden, 40. Started 1994. Tri County Protein Corporation, Iroquois, 100. Not in operation yet).

(12) Estimated quantities of soybean utilized by soyfood processors–1996–metric tons (p. 35. Total volume of whole soybeans consumed: 9,650 tonnes, of which 4,780 are for soymilk, 4,775 are for tofu, and 95 are for other soyfood products). Total volume of whole soybeans consumed by province (by soyfood processors): British Columbia 3,825 tonnes, Ontario 3,050 (excluding crushing plants), the Maritimes and Quebec 2,535, and the Prairies 240.

(13) Major foreign companies in the Canadian soyfood market (p. 37. Soy cheese: Soyco Foods, Sharon’s Finest, Cemac Foods Corp. {Nu-Tofu}. Frozen desserts: Tofutti Brands Inc. Tempeh: Turtle Island Foods Inc. Tetra Pak packaged soymilk: Westbrae Natural Foods, Cenat, Pacific Select, Vitasoy USA Inc., Eden Food Inc. Tofu: Mori-Nu, Vitasoy USA Inc. Prepared dishes: Amy’s, Sharon’s Finest. Meat analogues: Fantastic Food Inc. MGM Brands, Northern Soy, Soy Boy, Turtle Island Foods Inc. Salad dressing: Nasoya Foods. Soy sauce: Eden Foods Inc., Kikkoman Foods Inc.).

The Prairie Provinces (Manitoba, Saskatchewan, and Alberta) contained about 16.6% of Canada’s population (4.5 million persons) in 1995. “The province of Alberta [Capital = Edmonton] is different from the other two Prairie provinces, due mainly to its larger population base, its growing Oriental population and its proximity to Vancouver.

Calgary [a large city in Alberta province] and Edmonton have their own Chinatowns, including small Oriental-owned tofu and soymilk production facilities.” Note: According to the Canadian Soyfoods Directory (1997, p. 14), there are 7 soyfoods companies in Alberta province, 2 in Manitoba, and none in Saskatchewan. Address: OSGMB, 180 Riverview Dr., P.O. Box 1199, Chatham, ON N7M 5L8, Canada. Phone: 519-352-7730.

1710. *Ontario Soybean Growers' Marketing Board Newsletter*. 1997. Profile: ADM. Sept. p. 15.

• **Summary:** In 1997 ADM was successful in acquiring up to 45% interest in United Grain Growers (UGG), Canada's largest farm co-op. Martin Andreas, Senior Vice President at ADM's headquarters in Decatur, Illinois, says that ADM plans further investments in Canada. The company already has 10 flour mills there, in addition to its soybean and canola business, and now its association with UGG.

Ontario soybean growers are most familiar with ADM through its Windsor elevator and crush complex, and through its elevators in the southwest, including elevators at Essex and Maidstone. While the company does not disclose its crush volumes, industry watchers estimate that ADM is processing approximately 25 million bushels of oilseeds a year at its recently expanded and modernized plant in Windsor, Ontario.

“Windsor's two extraction plants can crush either soybeans or canola, and it makes little difference in terms of plant operation whether the soybeans are grown in Ontario or the U.S.”

“ADM is more closely allied to farmers and elevators than its competitors. Andreas agrees. ‘In the U.S. alone, we need 9.5 million bushels of grains and oilseeds a day to meet our processing and export requirements,’ he explains. ‘We must be closely allied with the people who are the producers of our raw materials.’”

“ADM's recent investment in Saskatchewan-based UGG reflects its policy around the world. ADM has agreements in place in the U.S. with the 175,000-member Growmark co-op, as well as with Countrymark and Riceland. It also has a one-third interest in the peanut co-op, Golden Peanut.”

“Internationally, ADM has a 50 percent equity position in Europe's A.C. Toepfer, which with 2.5 million members, is the largest farm cooperative in the world.” Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

1711. *Ontario Soybean Growers' Marketing Board Newsletter*. 1997. Arbitration award imposes radical changes. Sept. p. 1, 11-14.

• **Summary:** In December 1996, ADM Agri-Industries and CanAmera Foods (Canada's two largest soybean crushers) announced that, for all soybeans they purchase for delivery after 1 Sept. 1997, they would implement a 13% moisture standard, with an allowance of 1% for dockage and foreign

material. The previous moisture standard had been 14%. Thus after Sept. 1 soybeans that contain more than 13% moisture when delivered, will be assessed a percent discount—based on the price of the soybeans at the time of sale. This discount is intended to cover drying charges, invisible loss, and moisture shrink. Tables show: Sample calculations (p. 12). The percentage discount for different moisture rates (p. 13). Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

1712. Soyatech, Inc. 1997. *Soya Bluebook Plus 1998: The annual directory of the world oilseed industry*. Bar Harbor, Maine: Soyatech. 400 p. Sept. Comprehensive index. Brand name index. Advertiser index. 28 cm.

• **Summary:** On the cover is a jigsaw puzzle map of the world on a blue background. The inside front cover and next two pages contain full page color ads from Lucas Meyer, “The Lecithin People” and “Edelsoja: The Protein People.” On the back cover is color ad from “ADM: Supermarket to the world.”

The Forward begins: “In the ten years since Soyatech began producing the Soya Bluebook, many things have changed in the world and the oilseeds industry.” Democracy and free markets have spread, the Berlin Wall has tumbled, and international markets have been created. “This book contains information on over 3,000 companies in more than 100 countries, including hundreds of new E-mail and Internet addresses.” Also, a limited edition of the directory is available at no cost on the World Wide Web at <http://soyatech.com>. In the reference section, “pages 368 to 373 provide detailed nutritional information on the major oilseeds and their products.” The statistical section has been completely updated and the glossary has been revised. Address: 318 Main St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207/288-4969.

1713. Woolsey, R. James. 1997. Alcohol and driving *can* mix. *Wall Street Journal*. Oct. 24. p. A-22 (East).

• **Summary:** New genetically engineered microorganisms and biocatalysts are now able to produce ethyl alcohol (ethanol) not just from feed grains but also from any other plants and common organic wastes. “The production of ethyl alcohol from biomass may turn out to be as revolutionary as the production of integrated circuits from silicon, vastly affecting the world's distribution of wealth and the fundamentals of international security. Replacing gasoline with biomass-derived ethyl alcohol would greatly reduce man-made greenhouse-gas emissions...”

The real question is the cost of producing ethyl-alcohol. Over the past 15 years the cost of producing a gallon of ethanol from corn—the main feedstock—has been cut in half, to about \$1 a gallon. But if the feedstock were to change to any biomass, ADM would probably end up losing its current near monopoly of the ethanol market. Address: Attorney,

Washington, DC (Director of the CIA–Central Intelligence Agency, 1993-95).

1714. Golbitz, Peter. 1997. Soyfoods Expo '97 in Mexico City, 21-23 Oct. 1997 (Interview). *SoyaScan Notes*. Oct. 31. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The American Soybean Association (ASA) sponsored this expo and hired Peter and Soyatech to recruit American companies to participate. 824 people attended (many more than the last soyfoods expo in Mexico in 1994) and 28 companies exhibited at the U.S. Trade Center in Mexico City. The event started Tuesday, October 21, with a briefing by the Trade Center on how to import products into Mexico. Tuesday evening there was an opening VIP cocktail, attended by about 300 people. The booths were all set up; it and ended Thursday Oct. 23. One Wednesday and Thursday the Expo hall was open from 12:00 noon until 8:00 p.m. each day. The U.S. Trade Center arranged appointments for people, from 9-12 o'clock each morning, linking potential buyers and sellers. A great deal of business was conducted. In addition there were five seminars each day, from 12:30 to 6:00 p.m., with the speakers being mostly Americans, talking about new technologies, marketing, soymilk standards, products, etc. There was one seminar about current developments with soy in Guatemala. ASA put together a beautiful little color catalog as part of a big packet on the Expo, with all the seminars, speakers, attendees, etc. Peter will send a 5-page faxed recruitment packet announcing the event.

Cuba has exported an excellent soymilk plant to Mexico; the company, Biotek, owned by Dr. Javier Sandoval Pierres, is now in operation at: Km. 9 Carreterra Celaya, San Miquel Allende, Guanajuato state (GTO, south of Mexico City), Mexico. Phone: +91 415 5-0347 or 0348. Fax: 4-0349. The soymilk is delicious. The company is beginning to work with the Mexican government to get this soymilk into schools.

Mexico is now the third largest importer of U.S. soybeans after the Netherlands (#1) and Japan (#2; see *Soya Bluebook*, p. 348). This is largely attributed to NAFTA, the proximity of Mexico to the USA, and the fact that as imports from the USA have increased, Mexican soybean production has decreased. In addition, China is now exporting good quality food soybeans to importing nations in Asia.

ASA Mexico now produces a quarterly Spanish-language magazine titled *Soya*. For more information contact Adela Perez and Viki Braverman at ASA Mexico.

Note: A photo in *Bluebook Update* (March 1998, p. 6) shows U.S. participants in the Expo: Matt Renkoski of Optimum Quality Grains; Deb Wycoff of Devansoy; Rick Eluk of Clofine Food & Dairy; Teresa Isakson of SunRich; Lorne Broten of International ProSoya; Alberto Pico of ADM; and Peter Golbitz of Soyatech, Inc. Also shown are Adela Perez of ASA (Mexico) and some of her staff. Address: Soyatech, P.O. Box 84, Bar Harbor, Maine 04609.

Phone: 207-288-4969.

1715. Archer Daniels Midland Co. 1997. Annual report. P.O. Box 1470, Decatur, IL 62525. 44 p. Oct.

• **Summary:** Net sales and other operating income for 1997 (year ended June 30) were \$13,853 million, up 1.05% from 1996. Net earnings for 1997 were \$337.3 million, down 45.8% from 1996. Shareholders' equity (net worth) is \$6,050 million, down 1.5% from 1996. Net earnings per common share: \$0.66, down 45% from 1996. Number of shareholders: 33,834. ADM spent \$1,127 million on additions to plant in 1997, compared with 801 million in 1996 and 658 million in 1995.

On the cover of the report is color illustration of a purple planetary globe. James R. Randall, who has been President of ADM for the past 22 years, has retired but continues advise the company. At ADM's website ([admworld.com](http://admworld.com)) a counter displays the world's population, now at 5.859 billion. "Every second of every day, the world gains 3 new mouths to feed." "The earth's population is projected to double in the next 50 years, hitting ten billion by the year 2050. Yet there will be no increase in the land available for growing food" (p. 5).

In the section titled "Discover the benefits of ADM's health products" (p. 6-7) are subsections on natural vitamin E, lecithin granules, soy protein, and isoflavones. The latter section states: "Isoflavones are special compounds called phytochemicals that occur naturally in soybeans. (Phytochemicals are different from vitamins or nutrients, but are thought to have and impact on health.) The two main types of isoflavones are genistein and daidzein. ADM is currently constructing the world's largest plant to make isoflavones in concentrated form.

"Initial research indicates that isoflavones may work in several ways to fight a range of diseases, including heart disease and cancer. They may also help relieve menopause symptoms, promote bone health and protect against osteoporosis.

In addition to the concentrated products, ADM makes a number of soy products that are naturally rich in isoflavones, such as soy milk, soy flour and Harvest Burgers products."

More than 100 million Green Giant Harvest Burgers have been sold (p. 19). The section on Haldane Foods (p. 20), a large producer of vegetarian foods in England, shows a half-page color photo of their products. It states: "A recent survey shows that 5.4% of the U.K. population is vegetarian and almost half are now actively eating less meat." ADM has just completed a fourfold increase in the capacity of its plant in Newport Pagnell—which produces many of these products.

Sales of oilseed products in 1997 increased 10% to 8.9 billion (p. 24). ADM sold its British Arkady bakery ingredient business (p. 25). Among the corporate officers, G. Allen Andreas is President and CEO. Address: Decatur, Illinois.

1716. Book Publishing Co. 1997. Complete '97 fall catalog (Mail order). Summertown, Tennessee. 48 p. 22 cm.

• **Summary:** Contains many books about vegetarian cookery (p. 14-29), including books on TVP, gluten and seitan, tempeh, soyfoods, and tofu. Address: P.O. Box 99, 156 Drakes Lane, Summertown, Tennessee 38483. Phone: 1-800-695-2241 or 615-964-3571.

1717. Newshour with Jim Lehrer. 1997. ADM—Feeding the world. Television broadcast. PBS. Oct. 1.

• **Summary:** The following three new ADM ads began to be aired on the Newshour in early October, 1997. (1) “Feeding the world is the biggest challenge of the new century. Outside of the U.S. you’ll find 96% of the world’s population. Inside, you’ll find the means to feed them. ADM—Supermarket to the world.”

(2) “Feeding the world is the biggest challenge of the new century. By the time this baby is old enough to vote, the world will have nearly 2 billion new mouths to feed. ADM—Supermarket to the world.”

(3) “Feeding the world is the biggest challenge of the new century. In fifty years the world must have room at the table for ten billion people. We’re setting new places every day. ADM—Supermarket to the world.”

Note: These ads may be the opening salvo in an effort to persuade American consumers that genetically engineered foods are necessary and a good idea.

At about this same time, ADM also began to air three more ads: (4) “Feeding the world is the biggest challenge of the new century. That’s why ADM is promoting soil conservation—so history doesn’t repeat itself. ADM—Supermarket to the world.” (5) “Feeding the world is the biggest challenge of the new century, which is why ADM promotes satellite technology to help the American farmer be even more productive. ADM—Supermarket to the world.” (6) “Feeding the world is the biggest challenge of the new century, which is why ADM is conducting research into aquaculture and other new food sources. ADM—Supermarket to the world.”

1718. *Ontario Soybean Growers’ Marketing Board Newsletter*. 1997. Profiles: Helin Oil Packers, Phil Iocavedes, and Jim Papadopoulos. Oct. p. 7.

• **Summary:** Helin Oil is a new oilseed crushing company, located on Hopkins Street in Whitby, Ontario, just east of Toronto—the site of a former Ralston Purina feed mill. By mid-winter Helin plans to buy 2 million bushels a year of Ontario soybeans, which it will convert into “high-quality partial-fat soymeal for dairy farmers in Ontario and nearby states,” and a variety of soybean oil products to be sold in Canada and overseas.

Phil Iocavedes (whose photo is shown) “will manage the plant, reporting to Jim Papadopoulos, director of operations

for Helin Oil and one of the principals in Empire Foods Ltd., the Markham wholesale food and paper company that three years ago decided the time was ripe to build a vegetable oil business in the province. Both Helin Oil and Empire Foods are now owned by Helin Industries Ltd., which will be traded publicly starting in mid-October on the Alberta Stock Exchange.

“Ontario’s oilseed crushing industry may be dominated by international giants CanAmera Foods and Archer Daniels Midlands, which crush nearly 60 million bushels of soybeans a year at their Hamilton and Windsor locations, with a value in round terms of \$500 million.”

“Papadopoulos was born in Greece and moved to Canada at the age of 17 years.”

“The company is considering becoming Canada’s first marketer of mechanically pressed crude oil

“With a staff of 35, the Whitby plant will be running its four expellers and six extruders 24 hours a day, seven days a week to crush 200 to 240 tonnes of cold-press oil per day.” Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

1719. Upbin, Bruce. 1997. Vindication: A year ago the news was filled with scandal stories about Archer-Daniels-Midland. A classic case of media overreaction. *Forbes*. Nov. 17. p. 52-53, 56.

• **Summary:** A pie chart (p. 56) shows the market shares of major U.S. soybean crushers: ADM 31%, Cargill 24%, Bunge 13%, AGP 10%, Central Soya 7%, Others 15%. Other pie charts show that ADM is also the single largest cocoa processor, grain miller, and high fructose corn syrup maker in the U.S.

A graph, titled “ADM’s spending spree,” shows gross additions to plant from 1988-1997. Spending hit \$1 billion in 1997.

ADM is spending its money in the areas where its growth is greatest—in emerging markets—such as China, which will become the world’s 4th largest soybean importer by the end of next year, projected to import about 2.7 million tons of soybeans and 3.4 million tons of soybean meal. The more meat and poultry the Chinese consume, the more soybeans they will need.

A large color photo shows Allen Andreas, standing in a corn field, dressed in coat and tie, waving 3 ears of corn and smiling. He notes that China has no chance of being self sufficient in soybeans.

In Sept. 1997, ADM swapped \$300 million of its stock for Moorman Manufacturing Co., a soybean processor in Quincy, Illinois, with \$1.2 billion in annual sales. This is ADM’s first soybean crushing plant on the Mississippi River. It costs only \$2 per ton to ship soybean meal by barge from Quincy to St. Louis (Missouri) versus \$6 per ton from ADM’s big plant in Decatur, Illinois, to St. Louis.

ADM stock has rebounded from a low of \$13 in mid-1995 to \$24 at present.

1720. Limpert, Bill. 1997. Functional and nonfunctional soy protein concentrates. Isoflavones in soy protein products (Interview). *SoyaScan Notes*. Nov. 18. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Cargill does not presently make soy protein concentrates; the two big manufacturers worldwide are ADM and Central Soya. Bill would guess that Central Soya may have a slightly larger market share—it is their flagship soy protein product. They each use two different methods to make these concentrates: the aqueous alcohol wash (for non-functional concentrates, which have high levels of denatured proteins) and the isoelectric wash (for functional concentrates, which have water absorption, higher solubility, etc.). Of the three major soy protein products (flour, concentrates, and isolates), soy flour has the highest level of all the different isoflavones. Since isoflavones are soluble in alcohol, they are absent in concentrates made using the aqueous alcohol wash. The normal way to get a *functional* soy protein concentrate is to use the an isoelectric wash—where only water (no alcohol) is used, at a pH of 4.2 to 4.5. A concentrate made in this way will have a fairly low level of isoflavones, but not as low as the level in soy protein isolates—even though not made using an alcohol wash. Bill is sure that PTI has far more people working on isolates than ADM.

One important, basic question is: Can you produce a functional soy protein concentrate using the aqueous alcohol wash system? The resulting product would not contain isoflavones.

ADM now pulls off one of their extraction streams to get concentrated isoflavones—which they plan to market as a separate product. They have all the pieces in place to make commercial isoflavones. At the IFT show they even had isoflavones on the front page of their catalog, even though they didn't offer the product inside! ADM's strength is that they offer all the soy protein products—and now they are offering “nutraceuticals” as well! Address: Research Chemist, Technical Services Manager, Cargill, Inc., Research Dep., P.O. Box 5699, Minneapolis, Minnesota 55440. Phone: 612-742-5365.

1721. Archer Daniels Midland Co. 1997. First quarter report to shareholders. Box 1470, Decatur, IL 62525. 4 p. 28 cm.

• **Summary:** This quarterly report comes in a new and much more attractive 8½ by 11 inch format, printed in full color on glossy paper. Includes: Excerpts from G. Allen Andreas's address at the 1997 annual shareholders meeting. Financial statements (gross profit and net earnings were down, in part because of litigation settlements), reprint of an article from *Vanity Fair* magazine, and a graph showing the prices per share of ADM stock from July 1980 (\$2.5) to July 1997 (\$24). Address: Decatur, Illinois.

1722. **Product Name:** Novasoy (Soybean Isoflavones).

**Manufacturer's Name:** Archer Daniels Midland Co.

**Manufacturer's Address:** P.O. Box 1470, Decatur, Illinois 62525. Phone: 217-424-5228.

**Date of Introduction:** 1997 November.

**Ingredients:** Soy isoflavones.

**Wt/Vol., Packaging, Price:** 20 kg paperboard drum.

Product wholesales for \$1,000/drum, which is \$500/kg (1998/03, Decatur, Illinois).

**New Product–Documentation:** Talk with Mark Messina of Nutrition Matters. 1998. This product was introduced in Nov. 1997. Ad (8½ by 11 inches, color) in *Natural Foods Merchandiser*. 1998. March. p. 110. “ADM Novasoy isoflavones. A natural reflection of soy.”

Talk with Steve Buchheim, marketing manager for soy applications at ADM. 1998. March 5. This product was first sold commercially in Nov. 1997 to Life Extension Institute in Florida. The pilot plant, in which it was made and is still being made, began operation in July 1997, and during that month a sample was sold to Bayer (USA) for their internal use. The full-scale plant in Decatur should be in operation by August or September 1998. ADM does not sell this product to consumers; it sells only to other companies and strongly advises them to follow DSHEA (pronounced du-SHAY), because of which ADM does not need FDA approval to sell Novasoy (soy isoflavones) as a food supplement; however FDA approval will be required before Novasoy can be used as a food additive, i.e. added to other foods.

Note: This is the Dietary Supplements Health Education Act (also called the Hatch Act, after Senator Orrin Hatch, Republican of Utah). When it was passed on 15 Oct. 1994, the whole world of nutraceuticals was revolutionized. This Act made it much easier to sell dietary supplements without FDA approval. It essentially put the burden of proof on the FDA. The actual language of the Act makes “amazing reading. The Act is a watershed event for the health food industry in the USA—a particularly for the nutritional supplement industry.

A typical tablet would be 50 mg, which is a daily dose. The product is a light beige powder, of very fine texture, which flows so nicely it almost seems slippery. Isoflavones are basically sugars. In Novasoy, the oil, protein, and fiber have all been removed, but many other micronutrients remain. There have been very complimentary articles about ADM's product in *USA Today* and *The New York Times* (2-part article by Jane Brody).

1723. Liebowitz, Annie; et al. 1997. A portrait of world power: The 65 men and women who shape and rule the world today... *Vanity Fair*. Nov. p. 217-75. See p. 262.

• **Summary:** Dwayne O. Andreas, Chairman of Archer Daniels Midland Co., is one of the 65 men and women profiled with a half-page photo and brief biography (p. 262). The Chairman of Archer Daniels Midland Company was

photographed by Nigel Parry on 1 May 197 at his apartment in New York City.

Born in Worthington, Minnesota, he “attended Wheaton College (Illinois) before leaving to join his father and brothers in a soybean processing business.” He married Dorothy Inez; they have three children.

Others include President Bill Clinton, The Dalai Lama, Her Majesty Queen Elizabeth II, Pope John Paul II, Bill Gates (Microsoft), Al Gore, Alan Greenspan, Andrew S. Grove (Intel), etc. A color photo shows Andreas, together with 1 page of information about him.

**1724. Product Name:** Prolongevity Mega Soy Extract (Soy Isoflavones).

**Manufacturer’s Name:** Life Extension (Marketer). Made in Decatur, Illinois by ADM (Archer Daniels Midland Co.).

**Manufacturer’s Address:** 1881 N.E. 26th St., Suite 221, Wilton Manors, FL 33305. Phone: 1-800-841-5433.

**Date of Introduction:** 1997 November.

**Ingredients:** Soy isoflavones in concentrated form.

**Wt/Vol., Packaging, Price:** 60 capsules x 135 mg each retails for \$30.38. 600 capsules x 700 mg each retails for \$590.00.

**How Stored:** Shelf stable.

**New Product–Documentation:** Talk with Mark Messina. 1997. Dec. 8. This product is now on the market. Talk with manager of Life Extension retail store near Ft. Lauderdale, Florida. 1998. Jan. 22. Mega Soy Extract was on the shelves of this store in about Nov. 1997. Talk with Life Extension toll-free order line. 1998. Jan. 22. This product is back-ordered; it should be available next Friday. A recent issue of the Life Extension magazine was largely devoted to this new product. Talk with Mike Friedman of Life Extension Foundation (LEF). 1998. Jan. 23. He just talked with Gary Prader, manager of the Life Extension retail store, who said that Mega Soy Extract has been in the store for about 2 months. This foundation is a not-for-profit organization with about 25,000 members and 100,000 regular buyers. It was founded by Saul Kent and Bill Faloon, who are still the principals. They pioneered new therapies and supplements, and they still fund extensive research in the field of life extension. Durk Pearson and Sandy Shaw, who wrote a very popular book titled *Life Extension* (1982) have never been connected with the foundation. At one point the FDA used a battering ram to break down the doors of the foundation. The case went to court and LEF was found not-guilty; all 40 charges were dropped. LEF filed a counter-suit against the FDA and won.

**1725. SoyaScan Notes.** 1997. Chronology of major soy-related events and trends during 1997 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Jan. 1–Novartis Seeds (headquartered in Golden Valley, Minnesota) is formed through the blockbuster merger

of Ciba Seeds and Northrup King Co. That merger was possible because of the mid-1996 merger of pharmaceutical giants Sandoz and Ciba-Geigy. Novartis Seeds is now America’s second largest seed company after Pioneer Hi-Bred International.

Feb. 3–Monsanto completes its acquisition of Asgrow Seed Co. of Kalamazoo, Michigan, for \$240 million. From May 1968 to 1994 Asgrow had been owned by The Upjohn Co., which built the company into one of America’s largest soybean seed companies. When Monsanto bought Asgrow it was called the Asgrow Agronomics business of Seminis Inc., a subsidiary of Empresas La Moderna, S.A. (ELM), a multi-national agricultural company based out of Monterey, Mexico. of Mexico.

March 4–Morinaga Nutritional Foods’ new tofu plant in Tualatin, Oregon holds its official grand opening. Mori-Nu Tofu, previously made in Japan, starts to be made in America for the first time. The plant, 65,000 square feet worth about \$15 million, is on the same property as Pacific Foods of Oregon, but in a separate building.

March 12–House Foods America Corporation holds the opening ceremony for America’s largest tofu factory, in Garden Grove, California; the company closes its tofu plant in central Los Angeles. The new fully automated, state-of-the-art, 130,000 square foot plant cost \$21 million, and will more than double the company’s tofu production capacity to 150,000 pounds/day, from 70,000 in the old plant. The old factory has been operating at full capacity for years. The new plant will have three tofu production lines, and is located on 5 acres of land—which gives plenty of room for expansion.

Sept. Nasoya Foods (owned by Vitasoy) finishes moving into a much larger, state-of-the-art \$13.5 million plant (125,000 square feet) in Ayer, Massachusetts, from its former location in Leominster. The first Vitasoy brand soymilk ever made in America starts to be shipped from the plant in mid-September. Nasoya’s offices have now been moved to Ayer from Leominster, but tofu is still being made at the plant in Leominster.

Oct. 14–The Hain Food Group acquires Westbrae Natural, Inc. Westbrae’s new name becomes Hain Food Group–Westbrae. Westbrae will continue to be headquartered in Carson, California.

Dec. 1–Phytoestrogens / isoflavones extracted from soybeans by ADM start to be sold commercially in the USA in pill form by supplement companies. ADM’s name for the product is Mega Soy.

Dec. 3–DuPont purchases Protein Technologies International (PTI—the world’s leading manufacturer of soy protein isolates), a wholly-owned subsidiary of the Ralston Purina Co. DuPont signed a letter of intent to acquire PTI on Aug. 24. PTI, which has offices worldwide, will continue to be headquartered in St. Louis, Missouri.

“How can I get more soy into my diet?” is the question most frequently asked by callers to Soyfoods Center. Soy

appears to have a bright future.

1726. *Bluebook Update (Bar Harbor, Maine)*. 1997. ADM to offer isoflavone concentrate. 4(4):2. Oct/Dec.

• **Summary:** Archer Daniels Midland Co. has started pilot plant production of the isoflavone concentrate and by early 1998 plans to have commercial quantities available from a new plant in Decatur, Illinois, in a range of concentrations.

The name of the new food concentrate is not given.

1727. *Ontario Soybean Growers' Marketing Board Newsletter*. 1997. Ontario soybean crush continues to increase. Dec. p. 5.

• **Summary:** The soybean crush has increased from 1,040,000 tonnes in crop year 1992/93 (Sept. 1 to Aug. 31) to 1,451,700 tonnes in 1996/97. Source: Canadian Oilseed Processors' Association. The biggest annual percentage increases were in 1996/97 (15.9%) and 1995/96 (11.6%). "The two large crushers in Ontario, ADM and CanAmera, have recently increased their crush capacity and oil/meal production. Ontario's four other crushers, Cold Spring Farms, Dennis Jackson Seeds, Helin Oil Packers, and Sunfield Oilseeds, also continue to expand." Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

1728. *Ontario Soybean Growers' Marketing Board Newsletter*. 1997. Profiles: La Cooperative de Pointe-aux-Roches—also known as Stoney Point Co-op. Dec. p. 10.

• **Summary:** This co-op, established almost 50 years ago—in 1948, has seven elevator locations and handles about 7 million bushels of oilseeds and grains a year; of this roughly 40% is soybeans. The majority of these go to the ADM crush plant in Windsor, "but sales of food-grade export soybeans are climbing rapidly and account for about one third of all sales, both in bags through a half-dozen Canadian exporters and in bulk via CP Rail to the Farmers Grain Dealers Inc. terminal at Mobile, Alabama.

"Today, the Co-op has 940 members and annual sales of \$56 million." A photo shows Chuck Desmarais, the Co-op's manager. Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

1729. **Product Name:** Flavored Textured Soy Items—Crispy Texture [New Improved Bacon, Type Q Bacon, Pepperoni, Italian Sausage, Breakfast Sausage, Bacon Flavored Chips, Beef Strips, Chicken Strips, Taco Flavored Granules] Soft and Chewy [Bacums I, Bacums III, Pepperoni, Italian Sausage, Breakfast Sausage, Bacon Flavored Chips, Beef Strips, Chicken Strips, Taco Flavored Granules].

**Manufacturer's Name:** Westwind Industries, Inc.

**Manufacturer's Address:** 3930 W. 29th St. South, Suite 55, Wichita, KS 67217. Phone: 316-943-3212.

**Date of Introduction:** 1997 December.

**Ingredients:** Textured soy flour plus flavorings.

**How Stored:** Shelf stable.

**New Product—Documentation:** U.S. Soyfoods Directory. 1999. p. 44-45. Talk with wife of Jim Beyers. 1999. May 3. Jim worked for ADM in R&D for 6-8 years, then worked for Westward Industries for 18 years making bacon bits. Talk with Jim Beyers. 1999. May 3. In late 1997 Jim bought Westward from its founder, Ken Towers, renamed it to Westwind Industries, and started his own production. The company makes two types of textured (extruded) soy flour: Crisp texture (about 5% moisture), and Soft and Chewy (these products are shelf stable, unrefrigerated for about 2 years). The Soft and Chewy line is made by a secret process that does not involve adding oil. It is not patented. Jim has written four patents and he never plans to write another one. "It's the fastest way to educate the planet." He sends a letter (fax), a sheet containing the names of each product in his two lines of textured soy items.

1730. **Product Name:** Terra Nuts (Dry Roasted Soynuts) [Nutty Flavor, Walnut Flavor, Pecan Flavor].

**Manufacturer's Name:** Westwind Industries, Inc.

**Manufacturer's Address:** 3930 W. 29th St. South, Suite 55, Wichita, KS 67217. Phone: 316-943-3212.

**Date of Introduction:** 1997 December.

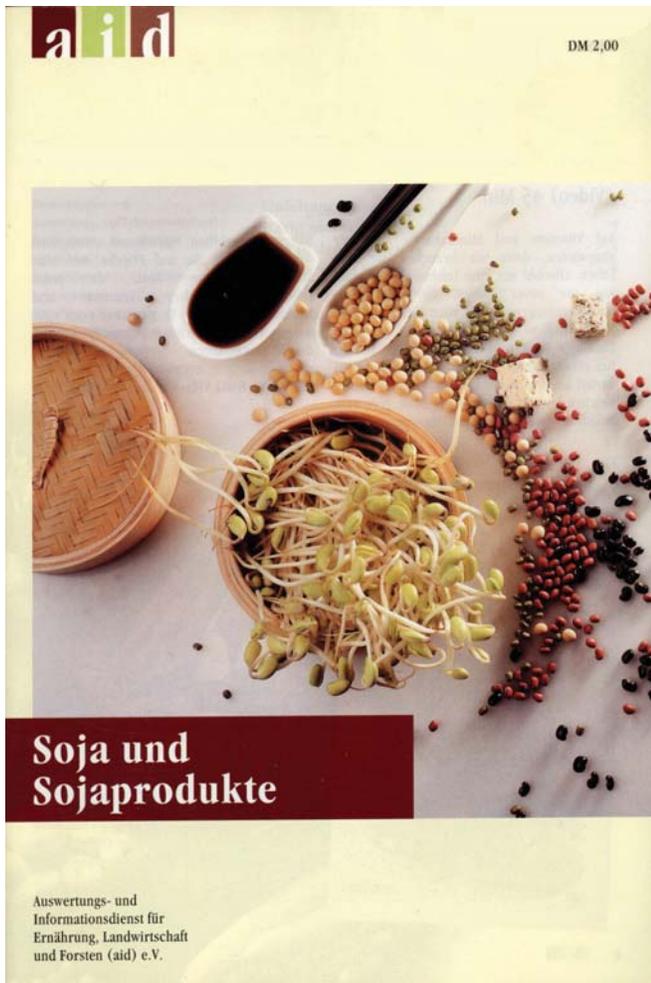
**Ingredients:** Whole soybeans + flavorings.

**How Stored:** Shelf stable.

**New Product—Documentation:** U.S. Soyfoods Directory. 1999. p. 44-45. Talk with wife of Jim Beyers. 1999. May 3. Jim worked for ADM in R&D for 6-8 years, then worked for Westward Industries for 18 years making bacon bits. Talk with Jim Beyers. 1999. May 3. In late 1997 Jim bought Westward from its founder, Ken Towers, renamed it to Westwind Industries, and started his own production. "The nut replacements that we manufacture are based on basically whole soybeans. Known by their trade name 'Terra Nuts,' they are based on the whole soybean principle, processed as either pecan replacements or walnut replacements. They are pressure cooked, then dry roasted." They come in three flavors.

1731. Keussink, Ruth. 1997. *Soja und Sojaprodukte* [Soybeans and soy products]. Bonn, Germany: Auswertungs- und Informationsdienst fuer Ernaehrung, Landwirtschaft und Forsten (aid) e.V. 28 p. Illust. (Color photos). 21 cm. [14 ref. Ger]

• **Summary:** Contents: Introduction. Market and utilization. Soya in the diet: Protein, fat, carbohydrates, minerals and trace minerals, vitamins. Overview—Soy products: Whole soybeans, soy sprouts, soy oil, soy beverage, tofu, natto, sufu, tempeh, soy sauces, miso, soy lecithin, soy sausages, TVP. Processing soybeans. Soy ingredients and additives: Soy protein isolate, concentrate, soy bulk / fiber (*sojaballastoffe*), fatty acids, lecithin, vitamin E (tocopherol). Product safety. Genetically engineered soybeans. Tips for



buying and storing. Recipes. Address: Konstantinstr. 124, 53179, Bonn, Germany.

1732. Klingel, Brigitta. 1997. *Soja und Tofu: 100 koestliche und gesunde Rezepte—Mit den Wirkstoffen der Sojabohne; Erkrankungen natuerlich vorbeugen; mit einfachen, schmackhaften Rezepten* [Soya and tofu: 100 tasty and healthful recipes. With soybean phytoestrogens. Prevent illnesses naturally. With simple, delicious recipes]. Munich, Germany: München Südwest Verlag GmbH & Co. 95 p. Illust. (color photos). Recipe index. Subject index. 20 x 18 cm. [Ger]

• **Summary:** A small but attractive book, containing many color photos on glossy paper. Soya, the food of the future? Favorable use of land using soya. New industrial uses of soybeans (paints, lacquer, soap, etc.). History of the soybean: East and West. World soybean production, yesterday and today. Soy in modern times: Henry Ford, two basic ways of using soybeans (as food or as livestock feed and oil), the sad story of genetically engineered (*genmanipuliertes*) soybeans. Soya: The power packet: Nutritional composition, a source of B-vitamins, magnesium, calcium and fiber, the world's best source of protein. Soya in medicine: Preventing

cancer, plant estrogens, isoflavones, prostate cancer, fiber and stomach cancer, effect on female hormones, men, medicine and soya, lowering cholesterol, help with diabetes, healthy nutrition.

Food products and buying tips: Yellow soybeans, black soybeans, green mungbeans (dehulled and not), azuki beans, glossary of soyfoods (miso, okara, soy flakes, dry soymilk powder, soy lecithin, Sojamark {TVP}, soy flour, soymilk, soy oil, soy protein, soy sauce, soy sprouts, tempeh, tofu, dry tofu, yuba).

Cooking with tofu—for a healthy kitchen, cooking with soy is easy. Infant and child nutrition. Recipe ideas: Basic recipes. Cooking whole soybeans. Homemade soymilk. Homemade soy cream. Soy mayonnaise. Homemade soy sprouts. Soya butter. Classical meat alternative with soya. Okara specialties. International tofu cuisine. Quick and easy recipes with soy and tofu. Healthy recipes for two. Desserts. Baked recipes. Address: Germany.

1733. Messina, Virginia Kisch; Messina, Mark. 1997. Soy to the world. In: 1997 Medical and Health Annual. Published by Encyclopedia Britannica, Inc. See p. 197-202.

• **Summary:** In the section titled "Diet and Nutrition" is a long subsection on "Soy to the world." Contents: Introduction. Sacred crop (history). Varied and versatile: Whole soybeans (incl. green vegetable soybeans), traditional soyfoods (soymilk, tofu, okara, yuba, tempeh, miso, soy sauce or shoyu), modern soy products (textured soy flour or TVP), "second-generation" soyfoods. One of nature's most nutritious foods. Health benefits: the evidence so far: Cancer, heart disease, osteoporosis, kidney disease, menopause. Tofu on your table (how to incorporate soy into American diets; incl. TVP, soymilk, soy flour, soy nuts). Address: 1. M.P.H., R.D.; 2. Ph.D. Both: PhD, 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

1734. Nutrition Education Service, Sanitarium Health Food Company. 1997. *Sensational soy cookbook*. Sydney, London, Vancouver, New York: Murdock Books. 64 p. Illust. Index. 20 cm. [32 ref]

• **Summary:** A saddle-stitched vegetarian cookbook on glossy paper loaded with color photos and lightweight text. The author and nutritionist is Cathy McDonald of Sanitarium. Recipes developed by Wendy van der Veer of Sanitarium. Contents: The story of soy. The soy family: Miso, soy beans, soy breads & cereals, soy cheese, soy drink, soy flour, soy grits & soy flakes, soy 'meats,' soy pasta, soy sauce, soy snacks, tempeh, TVP, tofu, tofu desserts (ice cream and yoghurt). Breakfasts. Soy for health (isoflavones, menopause, breast cancer, osteoporosis, prostate cancer, heart disease). Light meals. The secrets of soy. Main meals. Soy in perspective. Desserts. Sensational soy (sample menus). Snacks. Know your nutrients. Bibliography. Estimated isoflavones in soy foods (table). Address: 1

Sanitarium Drive, Berkeley Vale, NSW 2261, Australia.

1735. People for the Ethical Treatment of Animals. ed. 1997. *Cooking with PETA: great vegan recipes for a compassionate kitchen*. Summertown, Tennessee: The Book Publishing Co. 221 p. Introduction by Ingrid E. Newkirk, President, PETA. 21 cm. [47 ref]

• **Summary:** Tofu is mentioned on 53 pages in this cookbook, soymilk on 7 pages, tempeh on 7 pages, soy flour on 3 pages, miso on 1 page, soy-free cream cheese on 1 page, and TVP on 1 page. Address: 501 Front St., Norfolk, VA 23510.

1736. Saio, K. 1997. Soybean foods: Nutritionally and industrially valuable. In: Banpot Napompeth, ed. 1997. *World Soybean Research Conference V: Proceedings. Soybean Feeds the World*. Bangkok, Thailand: Kasetsart University Press. xxiv + 581 p. See p. 521-26. Held at Chiang Mai, Thailand, 21-27 Feb. 1994. [10 ref]

• **Summary:** Contents: Abstract. Introduction. Localization of the components seeds and foods. Roles and behavior of the components in soybean food. Physical functionalities of the components. Nutrition and physiological functionalities of the components. Conclusion.

Contains 4 figures (incl. 11 photos and 1 graph) and 4 tables. Table 3, "Chemical composition of main soybean foods (in 100 gm)" includes tofu (regular), abura-age, kori-tofu, yuba, kinako, soybean sprouts, natto, miso (dark yellow), soy sauce (common), TVP [textured soy flour], soy protein isolate, soybeans (Japanese). Address: National Agricultural Research Center, 1-1-3 Kannondai, Tsukuba, Ibaraki, Japan 305.

1737. Shintani, Terry. 1997. *Hawaii diet cookbook*. Honolulu, Hawaii: Health Foundation Press. xxii + 266 p. No index. 22 cm. [15 ref]

• **Summary:** This weight-loss book advocates a vegetarian diet but allows small amounts of fish. But Dr. Shintani "encourages a whole-food plant-based diet as ideal for optimal health, except under unusual circumstances" (p. xxix). Dr. Shintani, being a Japanese-Hawaiian professional, is naturally very positive about soyfoods. In the glossary of this book, the following soyfoods are defined (alphabetically):

"Aburage: Japanese deep-fried tofu skin that is often used as a 'cone' sushi wrap."

"Black Bean Paste: Salty fermented [soy] beans used in Chinese cooking."

"Miso: A thick, fermented soybean paste product which has a savory flavor, often used in soups and sauces."

"Soy Milk: Whitish creamy drink is made from soybeans. "Tamari: Genuine tamari is soy sauce made naturally without wheat as a by-product of miso making. However, it is commonly used as a term simply describing naturally brewed soy sauce."

"Tempeh: A whole soybean food that is a good meat substitute. It is fermented, which minimizes its 'beany' flavor and gassiness."

"Texturized Vegetable Protein (TVP): Usually referred to by the abbreviation of 'TVP.' A textured soy product made from extruded soy flour. Used for making sauces, it has the texture of ground meat. Available at natural food stores in minced, granule, and chunk form."

"Tofu: Fermented [sic] soybean curd."

The glossary also includes: Arame, azuki beans, hijiki, konbu, ogo, seitan, umeboshi, wakame, vegan diet [eliminates all animal products].

About the author: Terry Shintani, M.D., J.D., M.P.H., received his Master's degree in nutrition at Harvard University, and both his medical degree and law degree from the University of Hawaii. He is on the clinical faculty at the University of Hawaii School of Medicine and School of Public Health, and is the Director of Preventive Medicine at the Waianae Coast Comprehensive Health Center. His award-winning program has been featured in Newsweek, CNN, CBS, NBC and in the Encyclopedia Britannica. A color portrait photo shows Dr. Shintani.

Note 1. He published several popular weight-loss books in the mid-1990s.

Note 2. This book is crippled by lack of an index, Address: M.D., Hawaii Health Foundation.

1738. Spittler, Sue; Yoakam, Linda R. 1997. *1001 Low-fat vegetarian recipes*. Chicago, Illinois: Surrey Books. xii + 839 p. Index. 23 cm. Reprinted in 2000.

• **Summary:** The index contains 20 entries for tofu, 17 for tempeh, 3 for soybean (cooked soybeans, coarsely pureed; cooked dried soybeans, or canned soybeans), and 1 for TVP [textured soy flour]. Address: 1. Long Beach, Indiana; 2. R.D., M.S., dietitian and nutritional expert, Chicago, Illinois.

1739. Messina, Mark J. 1998. Soy phytoestrogen pills—The biggest soy-related story of the year (Interview). *SoyaScan Notes*. Jan. 22. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Phytoestrogens extracted from soybeans, made by ADM and sold in pill form, went on the market in the USA in about November 1997. The first company to sell them was the Life Extension Institute in Wilton Manors, Florida. They call the product Mega Soy Extract; in their catalog it is listed under the category Soy Supplements. They sell the capsules in two sizes: 135 mg and 700 mg. ADM is not mentioned in the catalog, but they have their own ADM brand name for the product: Novasoy. Two research scientists to talk to at ADM are Eric Gugger (phone 1-800-637-5850 X-4380) and Rasik Daftary. Mark has the highest regard for these two men as scientists. They are dedicated to the facts as shown by scientific research.

Central Soya is now also making and selling the same

kind of soy phytoestrogen pills, but ADM's were on the market first. What would happen if a person (such as a teenage girl wanting larger breasts) took 60 of these 135 mg pills at once? Mark has no idea; you'd have to know more about the absorption and blood levels. Many studies now suggest that a person needs to consume 70 to 100 mg/day of these soy isoflavones (equivalent to about 2 servings of tofu or 2 cups of soymilk) to derive the benefits. This is clearly much more than most Americans would be willing to consume day after day. So the supplements make it much easier for people to get their isoflavones. The average intake of these isoflavones among people in Asia is actually quite low, probably about 15-25 mg/day; this is much lower than was formerly thought to be the case, yet epidemiologic studies suggest that even these low levels confer benefits.

Solid studies increasingly show that these isoflavones give benefits in the areas of bone health (osteoporosis), reduced risk of heart disease, and reduction of menopausal symptoms. The benefits appear to be dose related—though there may be a threshold. There seem to be more benefits to women than to men, and little or no danger of any harm if taken at the recommended doses. Though the results are not yet definitive, there may be reduced prostate cancer risk for men. Some studies have also looked at the individual isoflavones. So Mark believes that many Americans will want to try these pills. They may take their place on the dining room table next to vitamins, minerals, and other supplements.

The area of greatest controversy concerns the effect of these isoflavones on breast cancer. Mark thinks it is very unlikely that they would increase the risk of breast cancer—even though some studies do seem to indicate that, and therefore further research is needed. Many difficult ethical questions are raised by how information in this area is presented to consumers.

Concerning soy and bone health, a 2-year study of monkeys without ovaries found that soy did not favorably affect bone health, even though estrogen did. That was one of the best studies conducted to date, yet it is never mentioned at any of the soy meetings. Mark is very concerned that there is a real bias in the way this information is being presented. This is such a “hot” area right now. There are so many fortunes to be made, so many researchers with patents, and so many trying to establish their careers on the basis of soy right now. Clinics all over the USA are now doing studies with isoflavones and with soy. Discussion groups on soy and breast cancer are taking place. “This is as hot as it gets.”

A big-name researcher in this field, with a reputation in nutrition research going back 20 years, recently proposed the “soy protein hypothesis” in a scientific paper. It had to do with the possibly favorable effects of protein on kidney function, with no acknowledgment of previous research in this area. But this idea/hypothesis was out 4-6 years ago, and a summary in *The Simple Soybean and Your Health*

(published April 1994) concluded that soy protein favorably affected kidney function. This appears to be but one of many examples where researchers are trying to establish their niche in soy and ride it to fame—and sometimes fortune. Now in nearly every major university in America, there is at least one researcher who is seriously interested in soy. That is really good for the field, and will help its progress.

The biggest event of 1997 is ADM starting to make soy isoflavone pills and thus taking soy isoflavones to the next level. These isoflavone pills are even sold on TV, in home shopping clubs—an amazing development. Many new books are being written on this subject by well-known authors, and soy plays a leading role. “There is a soy bandwagon here and everyone is jumping on it. The pills will take soy to the next level because there is more money to be made, and they are accessible to everyone. Now anyone can get the benefits (whatever they may turn out to be) without having to eat tofu or drink soymilk. Even with a bland soy powder, it was difficult for most people to consume enough of it (60 gm/day) to get benefits. Now that the soy isoflavones are available as pills, many researchers will now do clinical studies with them. Even now, there are studies underway all over the country. Three years ago, few people were aware of soy isoflavones. Now the research is almost one step removed from mainstream medicine. Virtually all researches involved with progressive health and nutrition, or with women's health, known about soy and phytoestrogens. It's just incredible. Being able to give out two placebo pills and two ‘soy pills’ a day makes it much easier to conduct controlled studies.” People used to think of soy as strongly connected with tofu. Then they began to think of the isoflavones separately and independently. Isoflavones are a type of phytoestrogens, but when the word “phytoestrogens” began to replace the word “isoflavones” a quantum leap took place. Every physician knows what estrogens are, and the word has a power that resonates. For example, Mark recently gave a talk last year at a meeting of the American Dietetic Association (ADA). He titled it: “Soybean phytoestrogens: Possible alternatives to hormone replacement therapy.”

So, in the field of soy, ADM and their soy pills is the big story of late 1997 and early 1998. ADM is a huge, respected company, and they plan strong promotion for these soy pills. Granted there were soy isoflavone pills available last year, but because they were made from the ground sprouts (hypocotyls) of soybeans, they had very low levels of genistein and they weren't nearly as potent as ADM's pills. Moreover, ADM is learning ways of processing soybeans to further concentrate the isoflavones, which will make the pills even more potent. Mark believes that the “halo effect” of these soy pills will soon benefit the whole category of soyfoods as well.

Mark has no plans to take these pills; he gets plenty of isoflavones from his natural diet, which contains lots of soymilk, plus some tofu, and other soyfoods.

An Australian newspaper reported that Protein Technologies International (PTI) recently paid \$15-20 million to Novagen, an Australian pharmaceutical company that will be marketing Promensil (made of isoflavones from red clover). Note: As of 3 Feb. 1998 Novagen is not listed in the text of any article in the *Wall Street Journal* since March 1984. It is not clear to Mark exactly what PTI got for this large amount of money (perhaps patent right to claims about a product containing isoflavones). This last weekend, PTI helped to sponsor a symposium at UCLA, attended by only about 45 people, but with good press coverage that made the wire services. The point is, a lot of money is being spent on this subject. Whereas ADM does not live or die by its new isoflavone business, some smaller companies do.

The proceedings of the Brussels symposium have been in the hands of editors at the *American Journal of Clinical Nutrition* since Sept. 1997; they have been reviewed, the comments have gone out, but they will not be published before Sept. 1998. Address: PhD, 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

1740. Behling, Ann. 1998. ADM to market isoflavone concentrate. *Soybean Digest*. Jan. p. 52.

• **Summary:** Early in 1998 ADM will begin producing a new isoflavone concentrate, derived from soybeans, at a plant in Decatur, Illinois. The product will be targeted at the fast-growing vitamin and supplement market.

1741. Greenberg, Patricia; Hartung, Helen Newton. 1998. The whole soy cookbook: 175 delicious, nutritious, easy-to-prepare recipes featuring tofu, tempeh, and various forms of nature's healthiest bean. New York, NY: Three Rivers Press (Crown Publishers / Random House). ix + 221 p. Illust. Index. 24 cm.

• **Summary:** Contents: Acknowledgments. Introduction. All about soy: Health benefits of soy (reduces the risk of heart disease, lowers the risk of breast cancer, eases the symptoms of menopause, protects against prostate cancer, prevents digestive disorders {when using whole soybeans or soy products containing high levels of fiber}, eliminates the problem of lactose intolerance, prevents the problems of milk allergy, beneficial in diabetic diets), cooking with soy products (meat analogs or meat substitutes {soy sausage, soy bacon, hamburgers and hot dogs}, miso, okara, soy cheese, soy milk, soy sour cream, soy yogurt, soy flour, whole soybeans, soybeans-green, soybeans-roasted, tempeh, textured vegetable protein (TVP), tofu & silken tofu; Soy-based foods (containing little or no protein): Egg replacers, soy margarine, soy mayonnaise, soybean oil, soy sauce) how to get optimum nutrition from soy (protein, carbohydrates, fat, cholesterol, fiber, sodium), nutrition information. Sample menus (for 3 meals a day, 7 days a week). Recipes: 1. Appetizers, dips, and spreads. 2. Salads and vegetables. 3. Brunch and breads. 4. Pizza and sandwiches. 5. Soups and

stews. 6. Main dishes. 7. Pastas and grains. 8. Desserts.

This book contains almost 200 delicious and easy ways to add that essential 25 grams of soy protein to your diet. These recipes (each of which includes a nutritional analysis) are based on more than ten years of experience and experimenting (p. 2). Address: P.O. Box 10853, Beverly Hills, California 90213. Phone: (310) 474-4539.

1742. Mitchell, Paulette. 1998. The complete soy cookbook: More than 150 simple recipes for good health and great taste. New York, NY: Macmillan Publishing (A Simon & Schuster Macmillan Co.). xlix + 270 p. Illust. Index. 24 cm.

• **Summary:** A very attractive vegetarian cookbook. Each recipe is marked with one of three symbols: V = vegan, lo = lacto-ovo vegetarian, and l = lacto vegetarian. Contents: Preface: An ancient Asian secret isn't a secret anymore. Introduction: The whys (cancer, heart disease, osteoporosis, menopause, diabetes), the hows, soy food ingredients (soybeans, sweet beans {edamame}, tofu, tempeh, textured vegetable protein {TVP}, soy milk, soy flour, soy oil, soy sauce), other soybean products (soybean sprouts, okara, miso, roasted soynuts, isolated soy protein {ISP}, dairy and meat analogs), a note on food allergies. Soy success: Stocking your refrigerator and pantry, using the recipes, kitchen equipment. 1. Appetizers. 2. Soups. 3. Salads. 4. Entrees. 5. Desserts. Appendix: Recipes listed by soy food categories (and within each category by recipe type—such as salads, soups, desserts): Whole soybeans (32 recipes), sweet beans (green vegetable soybeans, 7 recipes), tofu (96), frozen and thawed tofu (14, all entrées), pressed tofu (12), tempeh (14), textured vegetable protein (TVP, 4), soy milk (14). Note that tofu was used in by far the most recipes (96), followed by whole soybeans (32).

Paulette, who lives in Minneapolis, Minnesota, is a cooking instructor, restaurant consultant, and lecturer. Paulette is the author of many Macmillan books, including *The 15-Minute Vegetarian Gourmet*, *The 15-Minute Single Gourmet*, and *The Complete Book of Dressings*. This book is dedicated to her 14-year-old son, Brett. Address: Minneapolis, Minnesota. Phone: 612-941-7576.

1743. Empie, Mark W. 1998. Re: GRAS notification for isoflavones derived from soy beans. Letter to Dr. Alan M. Rulis, Ph.D., Director, Office of Premarket Approval (HFS-200), Center for Food Safety and Applied Nutrition, Food and Drug Administration, 200 C St. SW, Washington, DC 20204, Feb. 4. 2 p. Typed, with signature on letterhead. [4 ref]

• **Summary:** "Dear Dr. Rulis: The Archer Daniels Midland Company ("ADM"), by this letter and enclosed documents, is providing the Food and Drug Administration ("FDA") notice in accordance with the FDA proposed regulation at 62 Fed. Reg. 18938, 18950 (April 17, 1997), that it has determined, based on a review of the data referenced in

the enclosed summary, that the substance, soy isoflavone, is generally recognized as safe ('GRAS') for use as a micronutrient in food. This substance is a naturally occurring constituent of soybean products and has been a part of the Asian diet for thousands of years. Published epidemiology and feeding studies referenced in the summary in both animals and humans indicate no toxic effects at dietary levels." Address: Director, Regulatory Affairs, Archer Daniels Midland Company, Decatur, Illinois.

1744. Eichenwald, Kurt. 1998. Court is told of suicide try as ex-Archer aide is absent. *New York Times*. Feb. 27. p. C3 (National ed.).

• **Summary:** Mark E. Whitacre, who now lives in Chapel Hill, North Carolina, tried to kill himself today hours before he was scheduled to be sentenced in Urbana, Illinois, on charges of embezzling millions of dollars from grain giant ADM. Mr. Whitacre admitted taking the money but said that it was part of a corporation-wide scheme at ADM to provide under-the-table payments to senior executives. Prosecutors have since concluded that his allegations were not true.

1745. Soyfoods Association of North America. 1998. Soyfoods Once a Day for Life (Portfolio). Washington, DC. 21 inserts. Feb. 15. 28 cm.

• **Summary:** The following three news releases are from the Soyfoods Association: (1) Soy the subject of serious research. (2) Soyfoods Association of North American proclaims April is Soyfoods Month. (3) Once a day for life. Also contains the following leaflets on SANA letterhead: (1) Names and addresses of researchers studying health impacts of soy. (2) Table of member companies, type of soy products made, brand, sales channel, market area. (3) Soyfoods menu plans. Brochures from member companies and "Soy facts" leaflets. Nancy Chapman is executive director. Address: 1723 U Street, N.W., Washington, DC 20009. Phone: 202-986-5600.

1746. Sakthi Soyas (A Division of Sakthi Sugars Ltd.). 1998. Classified ad: DGM-marketing. *Times of India (The Bombay)*. March 23. p. IV.

• **Summary:** "Sakthi Soyas, a division of Sakthi Sugars Ltd., is a pioneer of Soya revolution in the south. The company has successfully launched branded and value added soya products- Soyabite (TVP), Trishul (Refined Soya Oil), Aquaforte (Shrimp feed) besides marketing Soya flour, Oil, Meal, Lecithin, Acid Oil, etc. This division requires a DGM-marketing.

"The ideal person should be a Management graduate with specialization in Marketing. Responsibilities involve Strategic planning for the brand, Launch of new products, Strengthening distribution network, liaisoning with advertising agencies to achieve overall marketing objective.

Candidates with 7-10 years experience in a similar

capacity and possessing clarity in thinking, creative flair, excellent communication and interpersonal skills would fit the bill.

"Attractive remuneration and perks comparable to the best in the industry. Apply in full confidence within 10 days to... The General Manager-Admn." Address: 180 Race Course Road, Coimbatore-641 018, Tamil Nadu.

1747. Soyfoods Association of North America. 1998. Membership lists (as of March 1998). Washington, DC. 1 p. March 23. Unpublished typescript.

• **Summary:** The Association has 34 paid members; 7 past members have not yet paid for 1998. The paid members are: ADM, American Health & Nutrition, American Soy Products, Central Soya Co., Clofine Dairy & Food Products, Corn Belt Foods, Devansoy Farms, EMB Partners, ExSeed Genetics, Galaxy Foods, GeniSoy (MLO) Products, Highland Equipment, Iowa Soy Specialties, Iowa Soybean Assoc., Kentucky Soybean Assoc., Lightlife Foods, Monsanto, MYCAL, Natural Health Magazine (Boston Common Press), Natural Products, Inc., Nebraska Soybean Board, Nutrition Advantage, Optimum Quality Grains [DuPont], P.J. Lisac & Associates, Pacific Soybean & Grain, Sacramento Tofu (California), Soyatech, Sun Rich, Sunrise Markets, Tofu Shop Specialty, Vitasoy (USA), White Wave, Wildwood Natural Foods, Worthington Foods.

The biggest paid members are ADM, Central Soya Co., and Monsanto. Address: N. Chapman Associates, 1723 U. Street, N.W., Washington, DC 20009. Phone: 202-986-5600.

1748. James, Richard F.; James, V.A. 1998. Re: Oppose petition by ADM for soy isoflavones to be generally recognised as safe (GRAS). Letter to Dr. Alan M. Rulis, Ph.D., Director, Office of Premarket Approval (HFS-200), Center for Food Safety and Applied Nutrition, Food and Drug Administration, 200 C St. SW, Washington, DC 20204, March 25. 2 p. Handwritten, with signature. [10 ref]

• **Summary:** "The thrust of our submission will be the biological effects demonstrated in the following published papers:" Ten scientific studies are cited. Address: R.D.4, Whangarei, New Zealand.

1749. Skiff, James. 1998. Impressions from the Natural Products Expo West at Anaheim this month (Interview). *SoyaScan Notes*. March 30. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Jim finds that the soymilk made by Ted Nordquist (White Wave's Silk) is by far the best tasting—much better than SoNice from Canada. Both companies had booths at Anaheim. Jim has always liked Ted's soymilk the best. In fact, he and Howard Weiner were ready to set Ted up in business with a soymilk processing plant, but they could never come to terms. Ted wanted to control everything. Ted did not have a booth at Anaheim.

Dusty Cunningham of International ProSoya Corp. (IPC) was at the show, having come from England. She said that GMO-free soybeans are very big in the UK (where new labeling laws have been passed), and to a somewhat lesser extent throughout the rest of Europe. There was some interest in GMO-free soybeans at Anaheim, but it was still a bit reserved. This may be in part because Monsanto and ADM are working so hard to push things in the other direction.

In the past, most of the soy-related companies have been in the same general area at Anaheim. This year they were spread out over many buildings and on various floors so they were hard to find. Address: Cornbelt Foods, Inc., P.O. Box 218, Marshall, Minnesota 56258. Phone: 507-537-1406.

1750. Archer Daniels Midland Co. (ADM). 1998. ADM Novasoy isoflavones: A natural reflection of soy (Ad). *Natural Foods Merchandiser*. March. p. 110.

• **Summary:** The left half of this 8½ by 11 inch color ad shows the shadows of two runners on a cliff made golden by the sunlight. The right half explains ADM's new product. "Novasoy isoflavones are the product of top-grade soybeans and a careful extraction process, so they retain the healthful qualities of soy, nature's isoflavone source." ADM operates "the world's largest soy isoflavones production and research facility..." The logo, with a green leaf, reads: "Novasoy—The Power of Soy." Address: P.O. Box 1470, Decatur, Illinois 62525. Phone: 217-424-5228.

1751. Book Publishing Co. 1998. Catalog—1998 (Mail order). Summertown, Tennessee. 48 p. 23 cm.

• **Summary:** This catalog has a glossy color cover with five books pictured on a gold background. In the center is Tofu Cookery. Contains many books about vegetarian cookery (p. 14-29), including books on TVP, gluten and seitan, tempeh, soyfoods, and tofu. Address: P.O. Box 99, 156 Drakes Lane, Summertown, Tennessee 38483. Phone: 1-888-260-8458.

1752. *Food Magazine (The) (UK)*. 1998. FDA caught in battle over phytoestrogen safety. March. [4 ref]

• **Summary:** "The controversy over the safety of oestrogen-like compounds in soybeans (see previous issues of the *Food Magazine*) has been brought to a head following an extraordinary move by US soya processing giant Archer Daniels Midland (ADM), which has petitioned the USA Food and Drug Administration (FDA) to have soy isoflavones generally recognised as safe (GRAS) for use as a food supplement and a micronutrient added to foods."

1753. James, Richard F. 1998. Work to expose the dangers of toxic substances in soybeans (Interview). *SoyaScan Notes*. April 18. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Richard James, who was born and raised

in New Zealand and still speaks with a "down under" accent, lives with his wife Valerie and many exotic birds in Whangarei, a fairly large city near the northern tip of New Zealand's North Island, about 80 miles north of Auckland. Before he moved to New Zealand, he was a lawyer and real estate agent in the San Francisco Bay area.

After many of Richard and Valerie's parrots began to die, Richard started to notice that a number of different animal species, including humans, were having some adverse reactions to the consumption of soy products. First he spent a considerable amount of his own money phoning around New Zealand, starting with agricultural people who were having trouble with their birds. It turned out, bit by bit, that rabbits, guinea pigs, pet hamsters, race horses—indeed everything being fed soy products was having some really nasty problems. And yet we couldn't quite put our finger on exactly what it was. We noticed that it was also affecting the reproductive capacity; we were getting deformed babies and infertile eggs. Valerie, apart from being distraught at watching all her lovely friends dying in miserable ways, spent a lot of time talking to Rob Shaw, the technical manager of a health food company—whose phone number Richard would be glad to share. Because the end results are so diverse, because these bloody soybeans have so many levels of toxicity, you almost couldn't put your finger on what was happening. Ultimately Valerie mentioned to Rob that the bird food was being advertised as producing 11-week-old baby birds that had the sexual characteristics of 2-year-old birds. At this point Richard and Valerie had no idea what an estrogen was, but Rob had enough biochemistry (and he really is quite a brilliant fellow) that he said immediately: Oh! That's premature maturation. Not many people in this part of the world would have known about that. Other good men are Dan Sheehan (of the USA) and Glen Plymate (616 Westland Dr., Alameda, CA; a personal friend of Richard's to whom Richard has sent many documents implicating the toxicity of soy).

Sheehan's revenge: Two important scientific papers have been published. The most recent was published in Nov. 1997 in *Biochemical Pharmacology*. The significance of these two is that they did basically what Richard suggested to Sheehan and his co-workers. They examined the huge number of thyroid cases that are reported in the medical literature. Note that one of the first places the effects of the estrogenic chemicals (like DDT, the dioxins, cadmium, mercury, etc.) shows up is in the thyroid gland. Having discovered that, see if you can prove the link between that and soy. The soy industry's defense has always been that their processing gets all the toxins out; that's why nobody else ever complained. In response to that, we have produced all these published research papers about prostate tumors in dogs, and liver cancer and infertility in cheetahs, mice, rats, hamsters, etc. Richard and his research team has the best library of this type of research in the world. Richard offers to send Shurtleff

copies of page 1 and the bibliography of many of these key papers.

Back to Sheehan's revenge: They set out to prove that flavonoid compounds cause thyroid cancer. Again, there were two key papers.

There has been a major cover-up. When Rob Shaw looked at the early literature Richard and his team were collecting on their literature review, he was very upset: He said the U.S. government must have known (for at least 20 years) the estrogenic content of soy infant formulas, and that that in some cases little girls fed soy infant formula show premature breast development, premature menstruation, premature menopause (at about age 22), etc. It doesn't show up until the kids reach puberty. Then (according to the dosage) the thyroid deficiency and the problems mentioned above start up; the evidence is unequivocal.

Another thing that has never been revealed properly or has been propagandized, like the premature thelarche in Puerto Rico: The only food correlation they found was with soy infant formula. The Centers for Disease Control (CDC) went off and did another search and absolutely, completely ignored soy infant formula, the foods fed after infant formula, and they ignored boys—so they came up with the answer that there is no incidence of anything—no problems. Basically, they defined the scope of their study so narrowly, that they defined away the problem. But even in this limited definition of girls who had problems, they were 2¼ times as likely to have been fed soy formula as anything else.

The other two epidemiologies were on Long Island, New York, where the North Shore Community Hospital went looking for a reason for the high incidence of auto-immune thyroid disease in children age 10 plus or minus 4 years. This occurs when the immune system has gone berserk and is actually attacking the thyroid gland. This is a permanent debilitating disease; its manageable, but chances of early death are fairly high. Kids with that syndrome were 2½ times as likely to have been fed soy formula. The same North Shore Community Hospital also found that kids with insulin-dependant diabetes—which is another auto-immune disease—were twice as likely to have been raised on soy formula. Moreover, some kids with this type of diabetes also had the auto-immune thyroid disease—and no one looked at abnormal breast development in these two groups of kids.

ADM stated to the FDA that they had determined that the soy isoflavones they are now selling [Novasoy pill with 70 mg of soy isoflavones in a softgel form] were safe to be used as a general additive to all foodstuffs. This is “totally toxic.”

In 1966 the National Academy of Sciences, National Research Council, Food and Nutrition Board, Food Protection Committee, compiled a very important book titled *Toxicants Occurring Naturally in Foods* (Washington, DC: NRC Press, 301 p.). A greatly expanded 2nd edition was published in 1973 (vii + 624 p.). Their basic approach was:

Gee whiz, isn't it great that we have these analytical methods so that we can detect when these toxicants are getting into our foodstuffs. They concluded that the main source of estrogens in foodstuffs is the isoflavones in soy products. Hormone replacement therapy isn't necessarily the same as the chemicals that are in soy; they both mimic hormones but they may not have the same biochemical effects.

“I could go on weeks talking like this but I'll tell you the basics that we can document... We were absolutely 'monstered' by some of the biggest and nastiest companies in the world. But also by certain arms of the U.S. government, particularly the U.S. Department of Agriculture.” A professional journalist is now writing a book about this. The small things were late night phone calls. But the pitch that was made all over New Zealand was: “We can buy TV channels. We can divert medical schools. We can influence governments. And we have millions of dollars and teams of lawyers—and we crush nutters like you. You won't last six months. We will destroy your credibility. We do this to 20 or 30 like you every year. “I am not a retired bird raiser. My professional training was as a lawyer. I practiced in New Zealand, in London, and in San Francisco—all quite successfully—until the California Bar Association lowered the boom on lawyers who hadn't passed the California Bar. I had an office at Bechtel Corporation in the legal department on the 20th floor, the corner office, facing out towards the Ferry Building.” He also got an MBA at Golden Gate University in San Francisco (part time; it took about 5-7 years). “Right now I am the soy industry's biggest friggin' pain in the ass.” After I quit Bechtel, we were in the real estate business in Walnut Creek, directly east of San Francisco. We hit the boom in 1976, invested quite carefully in California real estate, and made a few million dollars. Returned to New Zealand and decided to do what the liked—raising exotic birds. His wife has dual citizenship (U.S. and New Zealand).

Dr. Clifford Irvine was (Richard believes) the “chairman of the governing board of Lincoln University in Canterbury, New Zealand. He was also dean of the Dep. of Animal Sciences. His secretary intercepted so many terrifying phone calls—death threats and whatever—that she finally left and went home. She broke down. Cliff was told that if he went to the USA to Dan Sheehan's conference, he should wear body armor and travel on a separate plane from Mike Fitzpatrick—which he did. Mike also was told to wear body armor and to watch out. This was not very nice stuff. Mike's employer was driven out of his mind. I've got it documented from Bill Grayson, who owned Grayson Laboratories, that the pressure was coming from Bean Supreme and Nestlé. If you phone somebody three times a bloody day and tell him the whole New Zealand Food Industry is going to take their business away from his laboratory, you'll frighten the sh\*t out of him.

“The soy boys pick a pinch hitter in some country. They started with Bean Supreme, then dumped him, and they've been using a fairly big Seventh-day Adventist owned health

company—the most corrupt, dishonest company in the world—and I can document that for sure.” They have been putting incredible pressure on Richard and the others in his group. Continued. Address: 1868 Whangarei Heads Road, Rural Delivery 4, Whangarei. Phone: +64 9 434 0564.

1754. Lang, Paul. 1998. Membership in the Soyfoods Association of North America: Some big new companies have joined (Interview). *SoyaScan Notes*. April 21. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Paul has been in charge of Soyfoods Association membership for the last 3 years. When he arrived the Association had about 22 members. During this year, the number of members has increased from about 33 in Feb. 1997 to 34 at present (as of 23 March 1998). Three large soy companies, each of which paid \$3,000 in annual membership dues, are now members: ADM, Protein Technologies International (PTI), and Central Soya. DuPont joined under the name “Optimum Quality Grains” for a much lower fee. Nancy Chapman was largely responsible for bringing on Central Soya and PTI. Paul Lang brought on DuPont and 6-7 smaller new members.

Update: 1998 July 8. The Board of the Soyfoods Association is not happy that Nancy Chapman & Associates is charging the Association so much per hour. Some board members are wondering “Is this worth it?” When they went to Peter Golbitz and said the work was going to take more time and money, Peter said he was not willing to change the written agreement. “If they are not doing a good job for the Association and bringing in new members, they will be out in a year.” Address: Natural Products, Inc., 798 Hwy 6, Grinnell, Iowa 50112. Phone: 515-236-0852.

1755. Sheehan, Daniel M. 1998. Re: Oppose petition by ADM for soy isoflavones, such as genistein, to be generally recognized as safe (GRAS). Letter to Linda Kahl, PhD, Div. of Product Policy, Mail Code HFS-205, FDA, 200 “C” St. SW, Washington, DC 20204, April 22. 2 p. Typed, with signature on letterhead.

• **Summary:** “I oppose this application because there is abundant evidence that some of the isoflavones, including genistein and equol, are toxicants. I enclose several reprints from my lab showing the developmental toxicology of equol, but other labs have also published data for the isoflavones.”

“In the meantime, Dr. Dan Doerge, a colleague here at NCTR, and I have agreed to write a review of this subject. We would also like this to be considered as you evaluate the FDA’s response to ADM...” Address: PhD, Director, Estrogen Base Program, Div. of Genetic and Reproductive Toxicology, National Center for Toxicological Research, 3900 NCTR Road, Jefferson, Arkansas 72079-9502.

1756. Dibb, Sue. 1998. Re: Petition by ADM for soy isoflavones to be generally recognised as safe (GRAS).

Letter to Linda S. Kahl, PhD, Regulatory Policy Branch HFS-206, Office of Premarket Approval, Center for Food Safety and Applied Nutrition, 200 C St. SW, Washington, DC 20204, April 28. 2 p. Typed, with signature on letterhead. [4 ref]

• **Summary:** “The Food Commission is a consumer organisation which campaigns for safer, healthier food. We publish a quarterly journal, *The Food Magazine*, and are well respected as a source of independent information and food policy analysis. We have taken an interest in phytoestrogens in the human diet and the debate around their potential health benefits and risks and have published a number of articles in our journal on the subject.”

“We are concerned that the FDA is considering a petition by Archer Daniels Midland for soy isoflavones to be generally recognised as safe (GRAS). Given the conflicting and controversial nature of the research on the health risks and benefits of isoflavones we request that the FDA rejects this petition.” Address: Co-director, The Food Commission (UK) Ltd., 94 White Lion St., London N1 9PF, England. Phone: 0171 837 2250.

1757. Golbitz, Peter. 1998. It’s morning in Brazil’s soy industry. *Bluebook Update (Bar Harbor, Maine)* 5(2):1, 4-5. April/June.

• **Summary:** “Brazil, the sleeping giant, is stirring. And as it awakens from a long and restful slumber, the largest country in the South American continent appears to be rejuvenated, strong, and ready to enter the 21st century as a world-class soybean producer.

“Although some lethargy still exists from years of governmental problems, rampant inflation and an inefficient and inadequate transportation system, recent investments in Brazil have quickly transformed this sleepy giant into the second largest soybean producer in the world—and there is still room to grow. Since 1960, Brazil’s annual production of soy beans has grown from 206 thousand metric tons to a projected record of 30,700 thousand metric tons, or 30.7 million tons, for the 1998 marketing year (February–January), according to a recent report from Safras & Mercado. This is the second year in a row that Brazil has produced a record crop. The country now produces 20 percent of the world’s soybeans and is second only to the United States which harvested 74.5 million tons of soybeans last year, according to the USDA.

“There are a number of factors responsible for the growth of the industry in Brazil during the past 38 years. Not only has there been a sharp increase in overall demand for soybeans, but Brazilian government subsidies and policies have favored increased production and development of a domestic crushing industry.

“The country is also blessed with ideal soil and climate conditions, abundant water reserves and an expanding agricultural frontier that would be the envy of

any developing nation. This frontier has been made even more valuable of late with improvements being made in the country's transportation infrastructure and the development of a number of new waterway systems which rival the important and valuable Mississippi River system in the United States. As new transportation corridors open up, freight costs will go down, and more land will be committed to soybean production in established growing areas and in new areas to the North as well. And just recently, Brazil eliminated its ICMS value added tax on exports of unprocessed soybeans, helping to improve the country's ability to compete with exports from other countries.

"Brazil's future potential is not news to those already deeply involved in the soybean trade. Recently, there has been a wave of new investments made by large multinational companies like the Decatur, Illinois-based Archer Daniels Midland Company (ADM) and The Bunge Group in Brazil. These deals, along with a series of other mergers and acquisitions occurring in the country, should help to further consolidate, and most likely strengthen, Brazil's soybean processing industry.

"Mergers and Acquisitions: In an effort to gain a stronger foothold on both supply and processing, ADM last year purchased Glencore Grain Holding's grain handling facilities in Brazil and Paraguay, and acquired Brazil's number three soybean crusher, Sadia Concordia S.A.

"With these deals, ADM now has 130 barges and 25 tow boats plying South American waterways, two major terminal elevators, 104 grain elevators and a four percent share of the Brazilian crushing industry with Sadia's soybean plants and oil refineries.

"We see Brazil as a major origination point for beans for ADM," says Martin Andreas, senior vice president of ADM. "The facilities we have acquired with Sadia and Glencore allow us to procure beans down there for Asia and Europe, and to export directly to China."

"One advantage of having facilities in both North and South America is that the harvesting dates of the two continents compliment each other. In the North, sales of soybeans begin in September and October while in the South, sales commence in March and April.

"We purchase roughly 20% of Brazil's export beans and have been doing that for a while," reports Mr. Andreas. "Part of the year we get American beans for our European operations in Hamburg [German] and Rotterdam [Netherlands], and part of the year you can't due to seasonality factors. So with the two, Brazil fills that gap for us."

"South American-based Bunge has also been busy shoring up its position in soybean processing by first purchasing the fifth largest processor in Brazil, INCOBRASA, in April of last year. They followed that move by acquiring the number one processor, Ceval Alimentos S.A., in November. Santista Alimentos S.A., the number two

soybean processor in Brazil was already owned by Bunge. Bunge is now in the process of combining the crushing and refining operations of Santista within Ceval, and will use Santista solely as a consumer products company.

"With this merger, Ceval's plans are 'to be and continue to be, the leading crushing company in South America,' says Jose Zilio, the director of the company's functional food division.

"While remarking on the entry of ADM into South America with a quick comment that 'ADM obviously wants to participate,' Mr. Zilio adds that it is quite obvious where most of the new growth in the industry is going to happen. 'The new growing areas in the world are in Brazil. In the U.S., 90% of the available farm land is already in use; in Argentina, 70 to 80 percent is currently being used. When you look at Brazil, less than 50% of the agricultural area is being used. We have tremendous potential.'

"Development of Waters: But in order for Brazil to fully utilize these new growing areas, efficient transportation systems need to be developed to reduce the extra 'Brazilian cost' which results from moving beans long distances by truck over rough roads. One way the country is doing this is by developing efficient transportation systems utilizing their many rivers, tributaries and ocean ports.

"Last year, it was reported that 320,000 tons of soybeans were exported via the new Northwestern Corridor, a waterway which connects the Madeira River to the Amazon River port of Itacoatiara. This year, a projected 600,000 tons of soybeans will most likely take the same route. In addition, the Center-North Corridor, which connects eastern Mato Grosso to the port of Ponta da Madeira in Sao Luis, Maranhao, will begin operations this year with shipments expected to reach 40,000 tons along that route.

"Continuing investments in the Tiete-Parana waterway will help to further reduce freight costs for soybeans cultivated in the heavy production areas of the Center-West region. For example, the recent opening of a lock at Jupia, on the Parana River at the border between the states of Sao Paulo and Mato Grosso do Sul, increased the useful length of this waterway from 1,100 to 2,400 kilometers (683 to 1,491 miles).

"The Parana River system is the third largest in the world, covering 1.7 million square miles with 2,350 principal channel miles. By comparison, the Missouri and Mississippi River system is the world's fifth largest, encompassing 1.2 million square miles and 3,900 principal channel miles.

"Investments in these systems, as well as a move to improve roads and the privatization of railways, will certainly help to stimulate soybean expansion over the next five years, as reductions in freight costs will make Brazilian soybean farmers increasingly more competitive in international markets.

"We hope that the crop in both the U.S. and Brazil grows, as they have been," says Mr. Andreas. "The good news

is that it is going to require both U.S. soybean production to go up and the Brazilian as well to meet projected demand.”

A large map shows Brazil and its larger rivers.

A graph shows Brazilian soybean production from 1960 (206,000 MT) to 1998 (30,700,000 MT)—an almost 150-fold increase in 39 years.

1758. Fitzpatrick, Mike G. 1998. Re: Oppose petition by ADM for soy isoflavones to be generally recognised as safe (GRAS). Letter to Dr. A.M. Rulis, Office of Premarket Approval (HFS-200), Center for Food Safety and Applied Nutrition, Food and Drug Administration, 200 C St. SW, Washington, DC 20204, May 1. 9 p. Typed, with signature on letterhead. [4 ref]

• **Summary:** Contents: Cover letter from Kingett Mitchell & Associates Ltd. Introduction. Soy isoflavones: history of use. Soy isoflavones: safety of use. Soy isoflavones: adverse effects. Soy isoflavones: benefits. References. Address: PhD, MNZIC, Senior Consultant, Kingett Mitchell & Associates Ltd., Environmental Consultants, ASDA Plaza, Fred Thomas Dr., P.O. Box 33-849, Takapua, Auckland, New Zealand.

1759. Messina, Mark J.; Messina, Virginia. 1998. Does consumption of soy increase or decrease a woman's risk of breast cancer (Interview). *SoyaScan Notes*. May 18. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Mark: In the area of possible adverse effects of soy (especially soy isoflavones), Mark's greatest concern is with soy and breast cancer. "It still bothers me tremendously." There have been 3-4 animal studies in which soybeans or isoflavones have been fed to animals and then they have been given a breast carcinogen. In none of these studies have scientists found an increase in the number of tumors or in the incidence of breast cancer. Several of the studies show "modest protective effects" from soy. So this is good news. The epidemiologic studies are not that supportive of the hypothesis that soy reduces the risk of breast cancer, but none of them have suggested that soy increases breast cancer risk. There were one or two studies showing that fried tofu increased risk of breast cancer, but that nonfried tofu did not. So within an individual study, one soyfood might pop up as being problematic. "But overall, you would not look at those kinds of studies and conclude that soy is risk factor for breast cancer." The fact that Japanese women have about one-fourth the incidence and mortality of breast cancer compared with American women is worth noting. Several basic facts about soy must be kept in mind. (1) It is clearly estrogenic, containing phytoestrogens. (2) When you add genistein to cancer cells that are estrogen receptor positive, it will stimulate their growth over the typical physiologic concentration, but at higher levels it will inhibit their growth. In the range at which it stimulates growth, this is probably due to an estrogenic effect, but at the higher range, genistein is probably inhibiting one of the enzymes that cause the

cancer cells to stop growing. At least ten scientific papers have raised the question of what is happening with these isoflavones, and they sound a little cautionary note. The criticism of these studies, where a little genistein is added to cells growing in a petri dish, is that there is absolutely no estrogen in the medium, and that even in post-menopausal women estrogen is present. So some people would say the petri dish does not represent a physiologic condition—you need to add some estrogen. Mark has heard that a researcher in Minnesota has added estrogen to the medium and she still gets a 20% increase in breast cancer cell growth. So genistein may still be an estrogen in that situation. One animal study showed that if you implant estrogen receptor positive cancer cells into rats who don't have ovaries, then you give them a significant amount of genistein, it will stimulate the growth of those cancer cells (tumors). But one criticism of this design is that there is very little estrogen in these rats and fairly high doses of genistein were used.

It is the three human studies (two of which have been published) which are troubling, and cannot be ignored. One is "Stimulatory Influence of Soy Protein," by Nicholas Petrakis at UCSF (1996) in *Cancer Epidemiology, Biomarkers, and Prevention* (5:785). A second is an abstract from the 1997 Brussels symposium by McMichael Phillips. Third, McMichael Phillips told Mark about a study in England that was 4 months in duration. They looked at nipple aspirate fluid and also got an increase in estrogen-regulated gene products. Mark has not seen the actual study and it is a long way from being published. These studies are troubling not because they are scary, but because they do not make sense. Malcolm Pike, from UCLA, a leading endocrinologist, said after studying McMichael Phillips' actual paper (not the abstract), that his must be a short-term effect, because that kind of stimulus would cause an increase in breast cancer, as (for example) in the Japanese population. Given that the other epidemiology does not suggest that soy increases risk, and given that the animal studies don't either, and given that the Japanese have a low breast cancer mortality rate, there is probably something else that could explain this phenomenon. Again, it could be a short-term effect that is actually preventive in the long run. But if it was a short-term effect, it still might be possible that soy should not be given to a person who already had estrogen-receptor positive cancer. So Mark is very reluctant to think that soy could increase risk of breast cancer risk; for one thing, it is very hard to identify any kind of food that increases or decreases breast cancer risk. And it is so unlikely that such a food would be soy, because there is very little supporting evidence. Nevertheless, Mark has about 25 scientific studies at the end of which the authors have expressed a cautionary note. The latter range from "Wow! These soy isoflavones are stimulatory; we've got to find out what is going on here," to "It's clear that we need to understand more about the estrogenic / antiestrogenic effects of these compounds before

we recommend them to the public.”

Mark does not differentiate between soyfoods such as tofu and isoflavone pills in terms of toxicity. He asks: “Would anyone use the above studies to recommend that people stop consuming tofu? No! When you look at the data collectively, it’s hard to conclude that soy would increase the risk of breast cancer—especially for normal women. On the other hand, if it weren’t for the low breast cancer mortality rate in Japan, and we just had the animal studies and the individual case control studies (neither of which show that soy increases breast cancer risk) plus the human studies, there would be more of a movement to look into this.” When Nick Petrakis’ study was published, it didn’t get much attention; Mark thinks there is a built-in bias to assume that soy is either beneficial or (at the worst) has no effect. It will be interesting to see what the response will be when McMichael Phillips’ paper is published as a full paper as part of the proceedings of the Brussels symposium (in Sept. in a supplement to the *American J. of Clinical Nutrition*). It is quite powerful; they actually took biopsies and found an increase in DNA synthesis.

Virginia: Ginny is well aware of the research showing possible adverse effects of soy (especially soy isoflavones) on breast cancer. She definitely thinks about this in planning her diet—in part because she has a fairly high risk for breast cancer; she has had two biopsies. “This is uppermost in my mind almost every day.” Ginny wasn’t eating a lot of soy products before this new research was published (she probably ate them 3-4 times a week), so she has not reduced her consumption based on the new information. Because of the concern with soy and breast cancer, Ginny would not eat soy products 2 or 3 times a day. “I certainly still eat soy products and I do not feel that I need to avoid them.”

Ginny eats soyfoods because she is a vegetarian, because she likes them, they are easy to include in the diet, and they are generally good, healthy foods. Ginny has never calculated how many milligrams of isoflavones she is consuming per day. “I’m really into food, into good, healthy, whole food, with lots of fruits and vegetables, and whole grains. I don’t think about things like isoflavones, vitamin C. I just figure I eat a really good diet.” Address: 1. PhD; 2. MPH, RD. Both: Nutrition Matters, 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

1760. Messina, Virginia. 1998. Soy and breast cancer (Interview). *SoyaScan Notes*. May 18. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ginny is well aware of the research showing possible adverse effects of soy (especially soy isoflavones) on breast cancer. (See today’s interview with her husband, Mark Messina, PhD). She definitely thinks about this in planning her diet—in part because she has a fairly high risk for breast cancer; she has had two biopsies. “This is uppermost in my mind almost every day.” Ginny wasn’t

eating a lot of soy products before this new research was published (she probably ate them 3-4 times a week), so she has not reduced her consumption based on the new information. Because of the concern with soy and breast cancer, Ginny would not eat soy products 2 or 3 times a day. “I certainly still eat soy products and I do not feel that I need to avoid them.”

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1761. Roblin, Lynn. 1998. Asian staple soy good for you. *Toronto Star (Ontario, Canada)*. May 20.

• **Summary:** Discusses the health benefits of soyfoods, which may be caused by their rich content of isoflavones, soy sterols, and soy protein. Various soyfoods are discussed: Tofu, soy beverages (brands include So Good and ProSoya So Nice), soy cheese, texturized soy protein (TSP, such as So Soya made by Bay Hill Impex Ltd. and TVP Meatfree made by Health Haven: A Vegetarian Place), tempeh, and most soy flours.

1762. Smith, Rod. 1998. Bunge International to accelerate soybean strategy. *Feedstuffs*. June 1. p. 5, 8.

• **Summary:** Bunge International (BI) Ltd., founded in 1818 and headquartered in Sao Paulo, Brazil, is the third largest soybean processor in the world and the largest exporter of soybean meal and oil. Bunge Corp. based in St. Louis, Missouri, is the third largest soybean processor in the USA. The International company is the controlling holder of Ceval Alimentos, based in Gaspar, Brazil, the largest soybean processor in Latin America, and a subsidiary of Guipeba. Bunge is also a major processor in Argentina, and a partner in Moyresa, based in Barcelona, Spain, the largest oilseed processor in Spain.

The three largest soybean processors worldwide are Archer Daniels Midland (24%), Cargill, Inc. (21%), and Bunge International (15%).

In 1994 BI began a restructuring strategy to sell non-agriculture and non-food businesses in order to concentrate on its core segment in grain marketing, oilseed processing, and fertilizer production—according to Oscar Bernardes, the CEO of Bunge International. In 1997 the company had total sales of \$13 billion, of which \$9 billion (about two-thirds) came from agriculture businesses. Over the next 5 years, BI plans to invest more than \$1 billion in agribusinesses, mainly in Argentina and Brazil, two countries with acreage

available for soybean planting. It will also invest in fertilizer production. Address: Staff Editor.

1763. Archer Daniels Midland Co. 1998. ADM this quarter: Third quarter report to shareholders. Decatur, Illinois: ADM. 2 p.

• **Summary:** A quarter-page article titled “Soy isoflavones now in production” states: “ADM is now producing soy-derived isoflavones for use in the rapidly growing vitamin and supplement market.”

“A recent University of Illinois study, in fact, described isoflavones as ‘dietary components that are effective in decreasing the risk of cardiovascular disease and cancer.’

“The study also found that soy isoflavones inhibit bone breakdown and may even stimulate bone formation. Isoflavones may thus play a role in preventing osteoporosis, a major public health threat to 25 million Americans, 80 percent of whom are women.

“ADM is now producing commercial quantities of isoflavones at its pilot plant. The world’s first commercial plant will be completed by ADM later this year. Based on demographics, incidence of disease, and the growing acceptance of vitamins and supplements, the potential number of world-wide users could be as high as 100 million.” Address: Decatur, Illinois.

1764. Chajuss, Daniel. 1998. Soy protein concentrate: Current status. *Oils & Fats International* 14(3):35-36. June.

• **Summary:** The three main commercial soy products are (1) Full fat and defatted soya flours and textured soya flour—current world production and sales about 80,000 tonnes (metric tons). (2) Soya protein isolates—current world production and sales about 130,000 tonnes. (3) Soya protein concentrates—current world production and sales about 284,000 tonnes, and growing at about 15% a year. More than 75% of all concentrates are now used for human consumption, the rest being used in pet and animal feeds. In human foods, concentrates are used mainly in meat alternatives or extenders. In animal feed they are used in formulations for calves and piglets as a milk replacer, in pet foods and in special feedstuffs such as ‘fish-flavour-free’ bland fish feeds, and for mink and other animal feeds. Concentrates are devoid of the antigenic protein components present in most other soya products.

Production of soy protein concentrates worldwide is presently concentrated in the hands of two companies: ADM and Eridania Béghin-Say (Central Soya). About 95% of all soy protein concentrates worldwide are now made by the counter-current aqueous alcohol wash system, originally developed in the late 1950s by the Hayes Company of Israel. A table shows estimates of world production (in metric tons) by company and country in 1998:

ADM, Netherlands 70,000 AAW (Aqueous alcohol wash).

ADM, USA 60,000 AAW.

Central Soya, USA (several factories) 60,000 AAW.

Central Soya, Aarhus, Denmark 50,000 AAW.

Sogip (Central Soya group), France 15,000 AAW.

Solbar Hatzor (formerly named Hayes Ashdod) (with Soya Mainz, an ADM subsidiary), Israel 15,000 AAW.

Sopropech, France 6,000 AWL (Acid/water leach).

Sanbra (Bunge), Brazil 5,000 Acid wash.

ADM, USA 3,000 Acid wash.

Lucas Ingredients, UK 2,000 (unconfirmed, Acid wash).

Total worldwide 284,000 metric tons.

The margins on soy protein concentrates are much more attractive than those from crushing soybeans into oil and meal—which in recent years have been either small or negative. The cost of making a tonne of concentrates ranges from US\$459 to \$600. For food applications, the sales price obtained by manufacturers for powder and small grits forms ranges from \$1,200 to \$1,600 per tonne, but for textured or functional forms this increases to \$1,500 to \$3,000 per tonne. The sales price for the pet food, milk replacer, and special feed industries ranges from \$1,000 to \$1,200.

Another high-value product, a potential source of additional income, is soya molasses, a by-product of making soy protein concentrates. It is a rich source of soya phytochemicals and soya oligosaccharides.

A second table shows estimates of world production (in metric tons) of soy protein isolates, with estimates for 1997 and forecasts for 1998.

Protein Technologies International (PTI, USA) 60,000 in 1997, 70,000 in 1998.

ADM, USA 15,000, 25,000.

PTI Belgium 15,000, 15,000.

Fuji-PTI Japan 10,000, 10,000.

Sanbra (Bunge) Brazil 5,000, 10,000.

Others worldwide 6,000, 8,000. Total worldwide 110,000, 138,000. Address: Managing Director, Hayes General Technology Co. Ltd., Misgav Dov 19, Mobile Post, Emek Sorek, 76867 Israel. Phone: +972-8-8592925.

1765. *Leaders Magazine*. 1998. This is really a growing business! An interview with G. Allen Andreas, President and Chief Executive Officer, Archer Daniels Midland Company, Decatur, Illinois. 21(2): April/June.

• **Summary:** Last year G. Allen Andreas succeeded Dwayne Andreas as CEO and president of ADM, while Dwayne remained chairman. ADM has been a pioneer in the soy protein industry. They are with the greatest potential “includes the value-added products that can be derived from the further processing of the farmer’s crop. Vitamin E, vitamin C, isoflavones, and new nutraceuticals [sic, nutraceuticals] that are being developed and researched across the world generate health benefits that will enable our citizens to enjoy longer, happier, and more successful lives. They are the keys to our company’s growth and ADM’s

growth in profitability over the coming years.” Address: ADM, Decatur, Illinois.

1766. *Soybean Digest*. 1998. Soy-based vitamin E plant to expand. May/June. p. 13.

• **Summary:** ADM is expanding by one-third its production of vitamin E, made from soybeans. With the expansion, the company will be able to supply 600 million people with the vitamin.

1767. Messina, Mark J. 1998. Problems with the media hyping soy: Concerns about Alzheimer’s disease, breast cancer, and thyroid function (Interview). *SoyaScan Notes*. July 18. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Mark feels that, when presenting an overview of the scientific research concerning health benefits of soy, he is the only person who is presenting a balanced and accurate picture; the media is clearly hyping the subject and many of the scientists are going along with the media—even though they know better. Much of what the media is saying is not supported by the scientific evidence. “It’s just getting carried away, and I feel it is very unfortunate. The exaggeration on the positive side, will probably come around to hurt you when they hype the negative side on the second time around. All of this is only interesting because people are now very excited about soy.”

Shurtleff notes that he agrees completely with Mark’s position and analysis, and that he too refuses to go along with the hype. The difference, however, is that Mark is in a more difficult position, because he is “doing the rubber chicken circuit” where he is paid to give lectures on the health benefits of soy.

For three years, Mark has been trying to explain this problem to the United Soybean Board’s (USB) PR firm in Seattle (EvansGroup, now renamed something like Publiciste) and to encourage them to conduct a workshop to deal with and refute the growing number of concerns about soy (Alzheimer’s, thyroid function, etc.). They haven’t been interested, then recently they learned that a woman’s magazine plans to do a story on soy that is negative for breast cancer. So now they are really concerned, and Mark will meet with them next Monday to try to plan a workshop, with 10-12 professionals present to deal with Alzheimer’s disease, breast cancer, and thyroid function as they relate to soy. For the Alzheimer’s disease, hopefully they could get Lon White from Hawaii, and the person in Seattle who is doing the study to present their data. He would also invite 3-4 people who are doing animal studies, to summarize what we know about soy and Alzheimer’s disease. Then two things from that: (1) To make research recommendations to the USB to try to resolve the situation—if that is possible, and (2) from a PR standpoint, to prepare a statement that would put as much of a positive spin as possible on the Honolulu data.

Steve Barnes (in Mark’s opinion) knows more about isoflavones than anyone else in the USA. When Mark has a question about them, he calls Steve. In a recent speech, Steve dismissed the papers on thyroid function from the NCTR (National Center for Toxicological Research). He noted simply that a large proportion of the polyphenolics and flavonoids (pronounced FLAY-vuh-noids) have the same effects of isoflavones in vitro, and we are supposed to be eating foods that contain these substances. But the scientists at NCTR are not stupid; they know that and they even discussed it in their papers. Moreover, in Mark’s opinion, the last three epidemiologic studies have found, at least in Europe, that the average flavonoid intake is 40-50 mg/day. So if anyone recommends 100 mg/day of isoflavones, that is doubling the average flavonoid intake. This is a big deal—at least theoretically. The NCTR researchers found an effect on thyroid function at a concentration of 1 micromolar; that is a lower concentration than is used to inhibit the growth of cancer cells and all the other wonder beneficial effects.

The NCTR is rarely completely objective, because they are always looking for funds to do more research. The FDA may be the only organization can look at these matters in an objective and balanced way—since their mandate is to safeguard the public health. So FDA is looking for a clear understanding of the situation, but much of the information they are getting may be biased. Hopefully, they know these biases and can take them into account.

One new area, which is a complete surprise and broadens our perspective—Several studies show that the effect of genistein is sometimes different from the effect of a complex mix of isoflavones, and that in turn could be different from the effect of a whole soy food (such as soy flour). Scientists realize that soy contains much more than isoflavones, but nowadays many focus solely on the isoflavones—especially genistein.

Mark likes ADM’s pills because he believes that the amounts people need may be very difficult for most people to consume without pills. Address: PhD, 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

1768. Kilman, Scott. 1998. Cargill searches for a corporate identity: Advertising. *Wall Street Journal*. July 23. p. B-11.

• **Summary:** “Cargill Inc., the biggest American company without an image, wants one.”

Cargill is the largest privately owned company in America, with fiscal 1997 revenues of more than \$56 billion. Cargill operates 25% of America’s oilseed crushing plants. But most Americans have never heard of Cargill and don’t know what the company does. Its name doesn’t even show up in supermarkets. The commodity processing giant, based in Minneapolis, has hired hometown ad agency Martin/Williams Advertising to create an image for the company. With the number of farmers in America steadily decreasing, and farm size swelling, Cargill is competing with other

grain and oilseed processors for the loyalty of increasingly sophisticated farm operators. Cargill's rival, ADM, is well recognized because of its ongoing "Supermarket to the World" campaign. But Cargill must be careful not to confuse itself with ADM, which has been embroiled in a price-fixing scandal for the past three years.

Cargill is probably the largest U.S. company that Americans know the least about—"even though its businesses handle much of what ends up on their dining plates each day."

"Cargill executives and family have preferred to stay out of the spotlight"—in part "because the commodity business is cyclical, and profits often swing wildly from year to year." And in part to avoid the impatience of Wall Street analysts and of shareholders who may expect regular dividends.

Address: Staff reporters.

1769. **Product Name:** Perfect Soy: Super Concentrated Soy Isoflavones.

**Manufacturer's Name:** MetaGenics—Ethical Nutrients Div.

**Manufacturer's Address:** 971 Calle Negocio, San Clemente, CA 92673. Phone: 1-800-668-8743.

**Date of Introduction:** 1998 July.

**Ingredients:** Soy isoflavones.

**Wt/Vol., Packaging, Price:** 30 or 90 tablets in bottle. 30 tablets retails for \$15.95, and 90 tablets for \$36.95.

**How Stored:** Shelf stable.

**New Product—Documentation:** Ad (full page, color) in Natural Foods Merchandiser. 1998. Sept. p. 59. "Take better care of your customers with some of the most innovative nutritional supplements you can buy: Women's Health." A photo shows a box and bottle of Perfect Soy. Talk with Patricia Wise at Metagenics. 1998. Sept. 21. This product was first sold in July 1998. It is based on Novasoy (from ADM). The retail price of 30 tablets (take one a day) is \$15.95, and of 90 tablets is \$36.95. One tablet contains 45 mg of total isoflavones, including 21.6 mg of genistein and 19.4 mg of daidzein.

1770. Robertson, Robin. 1998. The soy gourmet: Improve your health the natural way with 75 delicious recipes. New York, NY: Penguin/Putnam/Dutton. xv + 191 p. July. Introduction by James W. Anderson, M.D. Index. 21 cm. A Plume book.

• **Summary:** Contents: Foreword. Introduction: Health benefits of soy protein, by James W. Anderson, M.D. 1. The soy solution. 2. Soy what? (soybeans, tofu, tempeh, textured soy protein or TVP, soy milk, miso, soy sauce, soy flour, dry-roasted soybeans or soy nuts, soy convenience foods, egg replacers). 3. Making soy protein work for you. 4. Breakfasts. 5. Let's do lunch. 6. What's for dinner? 7. Desserts. 8. Shakes and more. 9. Sample menus. Glossary (In addition to the soy foods described at Chapter 2: Gomasio, soy cheese, soy protein powder, and tamari soy sauce).

The author, who is a woman, worked as a professional chef during the 1980s, when she used large quantities of meat, eggs, and dairy products to prepare dishes in classic cuisines, such as French and Italian. In 1987 she made a dramatic change in her life, when she decided to stop working in professional kitchens, and start to pursue a healthier lifestyle, becoming a vegetarian, eliminating all meat and dairy products from her diet. Having lost both parents to heart disease and stroke, she had a personal interest in helping people learn how to cook and eat properly. Using soy products such as tofu, tempeh, and soy milk, she was able to recreate her favorite old recipes—sautéed dishes with cream sauces, rich pasta dishes, and even delicious cheesecakes—all without cholesterol. But these soy foods actually offered a double benefit, for recent scientific studies show that they actually reduce cholesterol levels.

1771. Zind, Tom. 1998. Making the case for soy: Soy protein merges into the fast lane as a functional food ingredient. *Food Processing (Chicago)* 59(7):31-32. July. Foods of Tomorrow section.

• **Summary:** Soy protein is getting more attention in the budding functional foods/nutraceuticals arena in large part because of the isoflavones in soy which have many health benefits. A number of companies have developed isoflavone-rich extracts—such as Novasoy from ADM. Big companies like General Foods and Nabisco are now working with soy and see a bright future ahead. ConAgra Frozen Foods is promoting soy in its Advantage\10 line, recommended by Dean Ornish, M.D. A color photo shows the front of one package. ADM markets a powdered soy drink named Nutribev and is test marketing a soy-based frozen dessert, named Dairylike, in Southern California. Protein Technologies International says it has found new scientific evidence that soy isoflavones can control cholesterol.

1772. Ndungi Khotu, Aubry. 1998. Contribution a l'avant-projet d'une usine de production de lait de soja en poudre a Lubumbashi [Contribution to the rough draft for a factory for the production of soymilk at Lubumbashi, Congo]. Civil Engineer thesis, University of Lubumbashi, Polytechnic Faculty, Dep. of Industrial Chemistry. v + 154 + 16 p. Illust. 30 cm. [73 ref. Fre]

• **Summary:** Preface and dedication. Introduction. Part I: Review of the literature. 1. General information about soya and proteins: 1.1. The soybean (Botanical, origin and history, soybean production and commerce worldwide, soya in the Democratic Republic Republic of the Congo {Congo, formerly Zaire}, structure and composition of soybean seeds, utilization of soybeans {with diagram}, food uses of soybeans {oil and meal, soy flour (4 types), soy concentrates and isolates, textured soy proteins {TVP, thermoplastic extrusion, spun fibers}, soymilk, tofu, other uses (shoyu, miso, tempeh, yuba)}, industrial uses of soybeans {linoleum,

plastics, paints, varnishes, etc.}). 1.2. Proteins (in the human body, in foods), the structure of proteins (amino acids, ionization and acid-base properties of amino acids), protein bonds, denaturation. 1.3. Soya proteins (glycinin or globulin 11S, globulin 7S, hemagglutinins or lectins, protein inhibitors and other antinutritional factors, amino acid composition of soy protein). 1.4 Factors affecting the food value of soya: Acceptability problem (food value of raw soybeans), intolerance to soy proteins, off-flavors in soya and their source, inactivation of lipoxygenase, other treatments affecting the food value of soya: Alkalis.

2. Preparation and properties of soymilk. 2.1. Properties. 2.2. Advantages and disadvantages of soymilk compared with cow's milk. 2.3. Preparation. 2.4. Commercial / industrial production using the Alfa-Laval process.

3. Reminder of certain operations required for the preparation of soymilk powder: 3.1. Homogenization. 3.2. pasteurization and sterilization. 3.3. Concentration by evaporation. 3.4. Drying by atomization. 3.5. economies of energy in dewatering operations.

4. Some ideas on the methods of sensory evaluation: 4.1. The different methods. 4.2. Results and interpretations.

5. Important ideas in the study of the market, in determining the capacity of production, and in the economic evaluation of a project: 5.1. Study of the market. 5.2. Determining the capacity of production. 5.3. Economic evaluation of a project, incl. estimating fixed capital by adding capital costs.

Part II: Experimental, industrial calculations, economic calculations. Introduction. 6. Origin and characterization of the raw materials, trials for inactivation of lipoxygenase. 7. Determination of the optimal conditions for the preparation of soymilk. 8. Results of pilot plant trials. 9. Market study and determination of the capacity of production. 10. Description and calculations for the installation. 11. Economic evaluation of the project. General conclusion.

Tables show: (1) Number of people that can be supported for 1 year by the production from one acre devoted to certain crops and animals. Fewest: Beef 190. Pork 319. Poultry 457. Most: Potatoes 5,329. Split peas 6,901. Soybeans 9,075. Algae 43,200–154,000. Yeast 3,275,000.

(1.1) Leading soya producing countries in 1985 (worldwide, with area, production, and yield; USA, Brazil, China, Argentina, India). (1.2) Leading soya producing continents in 1985 (North and Central America, South America, Asia, USSR, Europe, Africa, Oceania). (1.3) Leading soya trading countries in 1985. Importers: Japan, Netherlands, R.F.A. (Republique Federal Allemagne = Germany), Spain, Italy. Exporters: USA, Brazil, Argentina, China, Paraguay. (1.4) Production of soya in the Congo, by province 1970-1978 (the leading producer by far in 1978 was Western Kasai). (1.5) Production of soya in Katanga [formerly Shaba, before that Elisabethville] (1990-1994; by far the leading producer is Tanganyika). 1.6 Total production of soya in the Congo

(1,000 metric tons) from 1970-1995 (increased from 1.7 in 1970-74 to 18 in 1995). (1.7) Average composition of different parts of the soybean seed. (1.8) Physico-chemical composition of soybean seed (ranges and average). (1.9). Mineral content of soybeans. (1.10). Vitamin content of mature soybean seeds and soybean meal. (1.11) Fatty acid composition of soybean oil. (1.11A) Enzymes in the soybean: Lipoxidase, urease, lipases, beta-amylase. (1.12) Properties and characteristics of the water-soluble fractions of soybean seeds. (1.12A) Variations in the solubility of proteins from defatted soy flour at various pH levels. (1.12B) Amino acid composition of soybean protein. Address: Lubumbashi, Katanga Province, Congo.

1773. Kilman, Scott. 1998. Jury convicts ex-executives in ADM case. *Wall Street Journal*. Sept. 18. p. A3-A4. Western ed.

• **Summary:** A federal jury in Chicago found Michael D. Andreas (son of ADM CEO Dwayne Andreas) and two other former Archer-Daniels-Midland Co. executives guilty in a landmark price-fixing case. James M. Griffin, chief of the Justice Department's antitrust office in Chicago, helped lead the prosecution; Scott R. Lassar was the U.S. attorney on the case.

The unanimous decision by the six-man, six-woman jury, was reached after a week of deliberations following the two-month trial. The decision was a blow to the Andreas family, one of the Midwest's wealthiest and politically most influential families. ADM generated revenue of \$16.1 billion during the fiscal year ended June 30.

The verdicts also give the Justice Department major convictions in its legal push to stop illegal global cartels. The department has 30 grand juries around the country considering international price-fixing cases, and more are expected.

The government had to rebuild its case after its informant at ADM [Mark E. Whitacre, president of the company's BioProducts division] turned out to have embezzled money from the company. Yet Whitacre provided the government with hundreds of undercover tapes he made during the 2½ year investigation. Before the scandal, Michael Andreas, age 49, was earning \$1.3 million a year as the No. 2 executive at ADM and was being groomed to succeed his 80-year-old father, Dwayne. Michael Andreas is the most prominent American executive ever convicted for international price fixing. The jury determined that he helped organize a cartel with four Asian companies to rig the \$650 million world market for lysine, a livestock feed additive that increases the growth rate of chickens and hogs. Also found guilty were Terrence M. Wilson and Mark. E. Whitacre, both formerly of ADM. Whitacre became an informant for the FBI in late 1992; but the government stripped him of his immunity in the price-fixing case when prosecutors learned that he had embezzled millions of dollars from ADM, an

offense for which he is now serving 9 years in federal prison. In addition to ADM, four Asian lysine makers (incl. Ajinomoto and Kyowa Hakko of Japan) and four European citric acid makers (incl. Haarmann & Reimer {a New Jersey Unit of Bayer AG of Germany} and F. Hoffmann-La Roche Ltd. of Switzerland) have pleaded guilty to rigging prices with ADM. Two tables show the companies and individuals involved in the lysine and citric acid price fixing, and the fines paid by each.

ADM's financial liability was capped by its 1996 guilty plea to two criminal charges of rigging prices of lysine and citric acid. ADM paid \$100 million in criminal fines and nearly that amount to settle lawsuits by customers and investors. Moreover, ADM's legal woes are not yet over. Former ADM employees may be charged with trying to rig citric acid prices. ADM also faces a price-fixing lawsuit in Illinois by buyers of its high-fructose corn syrup.

The man likely to take Michael Andreas' place at ADM is how elder cousin, lawyer G. Allen Andreas. He became CEO of ADM in 1997. He faces sentencing January 7. Prosecutors said they will seek the maximum sentence of three years in prison for violating the Sherman Antitrust Act. Address: Staff Reporter.

1774. Archer Daniels Midland Co. (ADM). 1998. Novasoy: Our isoflavones are a natural reflection of soy (Ad). *Natural Foods Merchandiser*. Sept. p. 64.

• **Summary:** The top half of this full-page color ad shows two stylized leaves, each on front of billowing clouds in the sky. On each leaf is written "Novasoy." The bottom half is a reflection of the top half. The text reads: "It's easy to understand why the demand for isoflavones is growing. Studies have shown that isoflavones may reduce the risk of osteoporosis, provide dietary support during and after menopause, and even inhibit the growth of certain cancer cells.

"But not all isoflavones are alike. Novasoy brand isoflavones are derived from soy, and thanks to ADM's careful production process, Novasoy reflects the same percentage of genistein and daidzein as the soybean—one of nature's most nutritious foods." Address: ADM Protein Specialties, P.O. Box 1470, Decatur, Illinois 62525. Phone: 217-424-5228.

1775. Archer Daniels Midland Co. 1998. Mother Nature comes through again. Vitamin E—Health (Ad). *Soybean Digest*. Sept. Back cover.

• **Summary:** The letter "E" in the word "Health" is written very large and in red. All the text appears against the background of an evening sky over a farm landscape, with a small crescent moon at the top. "When it comes to health, natural solutions are often best. Now doctors around the world are discovering that naturally produced Vitamin E, extracted from soybeans, may be one of the best remedies for

some of our most dreaded diseases, including heart disease, prostate cancer, diabetes, and Alzheimer's.

"With a multimillion-dollar investment in natural-source Vitamin E processing, Archer Daniels Midland Company is working to help all Americans live longer, healthier lives. Naturally."

Note: This ad also appeared on the back cover of the *Soya & Oilseed Bluebook* 1999 (shipped in Sept. 1998). Address: Box 1470, Decatur, Illinois 62525. Phone: 217-424-5200.

1776. Fisher, Kate. 1998. Soybeans pack powerful health punch: New research shows. *Soybean Digest*. Aug/Sept. p. 18, 20.

• **Summary:** Vitamin E, extracted from soybean oil, is a powerful antioxidant and a nutritional hero. It can reduce the risk of heart disease and lower the chance of a heart attack by as much as 75%.

It can reduce the probability of developing prostate cancer and the risk of dying from it by 40%.

It can significantly reduce menopausal symptoms without the use of hormones.

It can help control diabetes and its complications.

It can strengthen one's immune system, especially in people over age 65—increasing antibodies by 65%.

Reduce chances of developing cataracts.

Cut the risk of colon cancer by 75%.

Protect against getting Parkinson's disease.

Slows the deterioration of some types of Parkinson's disease by 25%. Vitamin D from natural sources (such as soybeans) is 36% more potent than its synthetic counterpart.

These are the results of numerous scientific studies from around the world.

Companies like ADM make vitamin E. It takes 1.5 billion bushels of soybeans to meet the production capacity of ADM's vitamin E plant.

Color photos show: Three soybeans in an open pod. A bottle of natural-source vitamin E.

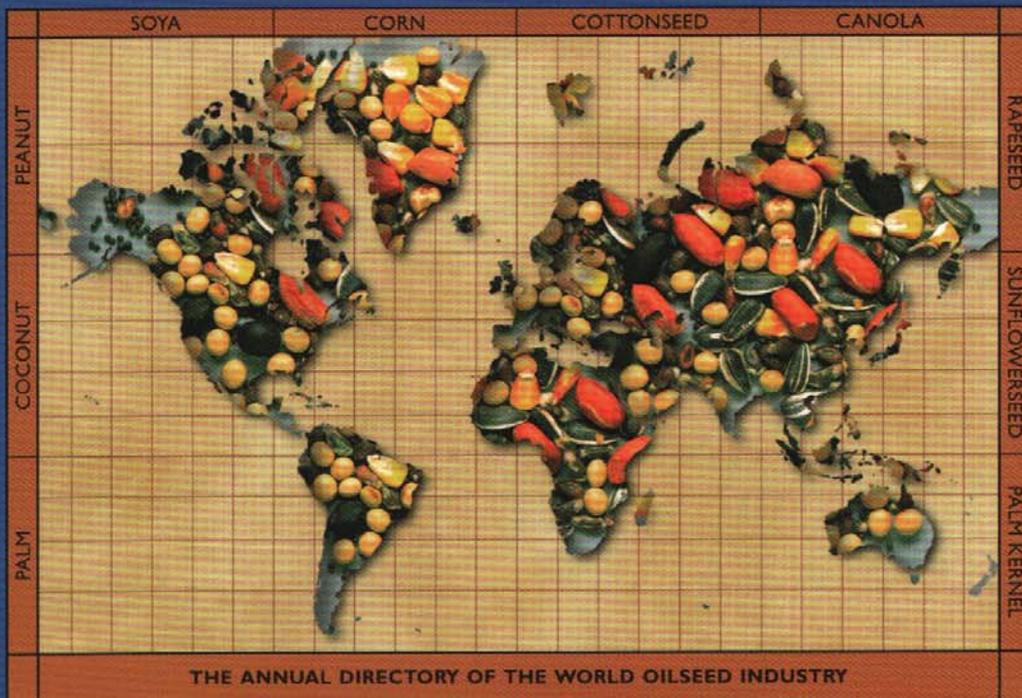
1777. Golbitz, Peter. 1998. Interview: Martin L. Andreas, Senior Vice President, Archer Daniels Midland Company. *Bluebook Update (Bar Harbor, Maine)* 5(3):4-5. July/Sept.

• **Summary:** A photo shows Martin Andreas, who joined ADM in 1970 as Executive Price President of Corn Sweeteners in Cedar Rapids, Iowa.

1778. Soyatech, Inc. 1998. Soya & Oilseed Bluebook 1999: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 424 p. Sept. Comprehensive index. Internet address index. Brand name index. Advertiser index. 28 cm.

• **Summary:** The Bluebook has a new title (see separate "serials" record). On the cover is a rectangular [Mercator projection] map of the world made of the different oilseeds

# Soya & Oilseed BLUEBOOK



# 1999

A SOYATECH PUBLICATION

now included in the Bluebook: Soya, corn, cottonseed, canola, rapeseed, sunflowerseed, palm kernel, palm, coconut, and peanut. The inside front cover and first page contain full page color ads from Lucas Meyer, “The Lecithin People” and “Edelsoja: The Protein People.” On the back cover is a color ad from ADM promoting their vitamin E.

The Foreword begins: “The next millennium is just around the corner. A new age, perhaps, in which increased interdependence and trade are coupled with the free flow of information. A new era where the efficient utilization of the Earth’s resources is a key factor in all activities of business and daily life.

“One of Soyatech, Inc.’s founding principles is the dictum that, ‘the world would be a better place if it used its agricultural resources more efficiently—for food, for animals and as a renewable industrial product source.’ We continue to see this as a primary goal of our publication and information services.”

The Bluebook’s new title “more aptly describes the directory’s continuing evolution to encompass the expanding field of plant-based proteins and oils.”

Another new section, near the front of the book, titled “Translations of oilseed terminology” (p. 9-15), includes over 300 terms related to oilseeds translated from English into German, French, Spanish, and Portuguese.

Note: This is the earliest English-language document seen (Nov. 2014) that contains the term “plant-based proteins” (or “plant-based protein”). Address: 318 Main St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

1779. Horvath, Jeffrey M. 1998. Re: Biodiesel progress during FY 1998. Letter to Mike Youngerberg, Minnesota Soybean Research & Promotion Council, North Mankato, MN 56003, Oct. 23. 1 + 7 p. Typed, with signature on letterhead.

• **Summary:** “Fiscal Year 1998 has been the most significant and eventful year yet for the farmer’s biodiesel commercialization effort... Five products (SoyShield, SoyGuard, Soy Power, Agri-Guard and Soy Gold) are now being marketed to and by the petroleum industry. Congress has passed legislation designed to *sell* biodiesel fuel. President Clinton included biodiesel in his National Alternative Fuels Week proclamation and Missouri’s Governor Carnahan declared the third week in May as National Biodiesel Week.” Both ADM and Cargill “are in the pre-planning stages of biodiesel production.”

Attached are the following reports: (1) National Biodiesel Board FY98 Final Report (3 p.). (2) Petroleum Alliance Program final report (3 p.). (3) Final report for Petroleum Partnership and Alliance Project (6 p.). Address: Chief Executive Officer, National Biodiesel Board [Jefferson City, Missouri].

1780. Stewart, Chuck. 1998. Update on work toward restoration of Henry Ford’s chemical plant and soybean laboratory—and new ideas (Interview). *SoyaScan Notes*. Oct. 30. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The Iowa Soybean Association and the Michigan Soybean Association contributed \$80,000 to fund a feasibility study on refurbishing Henry Ford’s Soybean Lab. Then they put together a proposal, that has now been presented to the Central States Soybean Group—which consists of the major soybean producing states, of which Iowa and Illinois are the top two. They had a second meeting with Steven J. Hamp, president of the Henry Ford Museum. They are now talking about going beyond the Soybean Lab and presenting the “big picture of agriculture through the lens of the soybean.” The Soybean Lab would be the historical component, the “look back.” Part of the new picture would be the big idea of moving from a carbon-based society to a carbohydrate-based society.

Note: In a week or so, Chuck Stewart and representatives of the Illinois and Iowa Soybean Associations will meet with representatives (including Martin Andreas of ADM) to discuss funding. Address: Chuck Stewart & Associates, 4949 Pleasant St., Suite 204, West Des Moines, Iowa 50266. Phone: 515-226-0358.

1781. Archer Daniels Midland Co. 1998. Annual report: The nature of our business. P.O. Box 1470, Decatur, IL 62525. 40 p. Oct.

• **Summary:** Net sales and other operating income for 1998 (year ended June 30) were \$16,109 million, up 16.3% from 1997. Net earnings for 1998 were \$403.6 million, up 7.0% from 1997, but far below the recent peak of \$796 million in 1995. Shareholders’ equity (net worth) is \$6,505 million, up 7.5% from 1997. Net earnings per common share: \$0.68, up 7.9% from 1997. Number of shareholders: 32,539.

“We have moved rapidly toward a borderless world... Globalization of trade has changed the face of agriculture. The central focus for agriculture today is the emergence of consumer power. Consumer demand drives the entire food and fiber system” (p. 1).

One half-page color photo (p. 2) shows the factory where ADM makes isoflavones at Decatur, Illinois. High on one side is the huge green and black logo: “Novasoy—The power of soy.” This is the world’s first commercial isoflavone plant. A larger photo (p. 3) shows a bottle of Novasoy Soy isoflavones—a co-branded ingredient found in leading nutritional supplement products. “ADM is meeting the needs of health-conscious consumers by offering a wide range of health and nutrition products, including nutraceuticals, also known as functional foods.

“Among our nutraceutical products are soy-derived isoflavones, which have been shown in initial studies to stimulate bone formation (thus boosting the body’s natural defenses against osteoporosis), to inhibit the growth of

cancer cells, and to contribute to lower cholesterol levels. In addition, isoflavones are thought to play a role in alleviating the symptoms of menopause. ADM produces Novasoy isoflavones in the world's first commercial isoflavones plant."

ADM now has a major presence in the South American soybean market, with five crushing plants (that crush 5,600 tonnes/day), two Atlantic coast export facilities (incl. a new one at Tubarao, southern Santa Catarina state, Brazil), and nearly two million metric tons of storage capacity (p. 5).

A world map (p. 6-7) titled "ADM's global network" shows ADM processing plants, partnerships, grain elevators, and A.C. Toepfer trading offices. The company owns 800 trucks, 13,000 railcars, and 2,250 river barges (p. 11).

"ADM Lecithin: Early in 1998, the Food and Nutrition Board of the Institute of Medicine established for the first time a Dietary Reference Intake (DRI) for choline, the principal component of lecithin. Ultralec, a deoiled lecithin made from an innovative ultrafiltration technology exclusive to ADM, is an excellent source of dietary choline. This plant has been completed in Decatur, Illinois. Acquisitions brought significant increases to production capacities in the past year. In the U.S. the acquisition of Moorman Manufacturing Co. included their lecithin production facilities at Quincy, Illinois and Helena, Arkansas. Production capacity was gained in Mainz, Germany through the acquisition of Soya Mainz GmbH" (p. 16). Note: Moorman Manufacturing Co. bought the Quincy Soybean Processing Co. (Quincy, Illinois) from Irving Rosen in 1961.

"ADM Research: Nutraceuticals (or 'functional foods') now in production include vitamin E, vitamin C, isoflavones, granular lecithin, and sterols (from vitamin E). Among ADM's forthcoming health and nutrition products are the antioxidants beta-carotene, oligosaccharides, and tocotrienols. Already in use in Japan, oligosaccharides are complex sugars that belong to the nutritional category of prebiotics that have been proven to decrease the risk of colon cancer and perhaps increase life expectancy" (p. 16).

Haldane Foods has four factories in England that make a variety of "meat and dairy alternatives... New products include meatless slices, including chicken, ham, and 'Vege-Bacon.'" Haldane also makes an outstanding dairy-free ice cream (p. 17).

Color photos show: (1) Dwayne Andreas shaking hands with Shimon Perez (facing p. 1). (2) A white plastic bottle of NovaSoy Soy Isoflavones (p. 3). (3) ADM's dock and export facility in the Atlantic port city of Tubarao, Brazil (p. 5).

Accompanying the annual report is a "Notice of Annual Meeting of Stockholders." Address: Decatur, Illinois.

1782. Worthington Foods, Inc. 1998. Third quarter financial report. 900 Proprietors Rd., Worthington, OH 43085. 8 panels. 22 x 9 cm.

• **Summary:** Net sales increased 21% to \$35 million for

the third quarter vs. 29 million a year ago. Net sales are up 18% for the first 9 months of 1998 compared with the same period one year ago. "Despite Gardenburger's concentrated efforts in the veggie burger category, including a \$17 million TV campaign, 5 national FSI drops in Sunday newspapers, and very aggressive trade support for shelf space and retail price reductions, Morningstar Farms Veggie Burger sales for the past nine months are up over 13 percent. However, the veggie burger category is only 40 percent of Morningstar Farms meat substitute business! The other 60 percent of our meat alternative business has increased nearly 40 percent during the past 3 quarters."

"On October 16, 1998, Worthington Foods, Inc., closed on the purchase of the Harvest Burger brand of meat alternative products from the Archer-Daniels-Midland Company (ADM). The purchase price of \$9.3 million was paid with 488,750 shares of common stock from Worthington Foods, Inc., approximately 4.1 percent of the outstanding shares of stock... Sales of Harvest Burger branded meat alternative products have been approximately \$15 million over the past 12 months with approximately 8 percent market share. Now sold under the Green Giant brand, the Harvest Burger Original has the 3rd highest sales-per-point of distribution of all burgers. These same Harvest Burger products will begin appearing under the Morningstar Farms brand beginning January 1, 1999. Foodservice sales were up 34% for the third quarter of this year compared to 1997 and increased 37% for the first nine months of the year." Address: Worthington, Ohio. Phone: (614) 885-9511.

1783. **Product Name:** Morningstar Farms Harvest Burgers [Original Flavor, Southwestern-Style, or Italian, plus pre-cooked Crumbles for Recipes].

**Manufacturer's Name:** Worthington Foods, Inc.

**Manufacturer's Address:** 900 Proprietors Rd., Worthington, OH 43085. Phone: 614-885-9511.

**Date of Introduction:** 1998 October.

**Wt/Vol., Packaging, Price:** 4 Corn Dogs weigh 10.0 oz (284 gm). Paperboard box.

**How Stored:** Frozen.

**New Product-Documentation:** Worthington Foods annual report. 1999. March. p. 4-5. On 16 Oct. 1998 Worthington purchased the Harvest Burger product line from ADM. As part of the agreement ADM continues to produce the Harvest Burgers—previously marketed by Pillsbury under the Green Giant label—at its Illinois plant. A color photo shows the label.

1784. *Bluebook Update (Bar Harbor, Maine)*. 1998. ADM to manufacture soy and palm nutraceuticals. 5(4):2. Oct/Dec.

• **Summary:** ADM is introducing two new products: Novasoy, an isoflavone product with various health benefits, and tocotrienols, which come from palm oil will be marketed as nutritional supplements.

1785. Fisher, Kate. 1998. Soy isoflavones charge onto supplement scene: Disease-preventing compounds are available in tablets. *Soybean Digest*. Nov. p. 24.

• **Summary:** Soy isoflavone tablets are now available from many supplement companies. Novasoy, a soy isoflavone compound made by Archer Daniels Midland Co., is the active ingredient in many of them. While many studies have shown the health benefits of soyfoods and soy protein products, few studies have been done using isoflavone tablets as supplements.

Soy isoflavones are fairly stable and able to withstand normal cooking without breaking down. There is presently no recommended daily allowance, but 30-50 mg per day seems to be beneficial, especially for post-menopausal women.

A bar chart from the University of Kentucky shows the isoflavone content of soybeans and various soyfoods (in mg per serving (svg)): Mature soybeans (170), roasted soybeans (165), green soybeans (70), tempeh (60), soy isolate (57), soy flour (45), tofu (35), textured soy protein (30), soy beverage (20), and soy concentrate (15).

1786. *Nutrition Business Journal* (San Diego, California). 1998. Haldane leads U.K. market for vegetarian and non-dairy foods. 3(10/11):26. Oct/Nov.

• **Summary:** The Haldane Foods Group is owned by agribusiness giant Archer Daniels Midland Co., based in Decatur, Illinois. ADM group vice president Larry Cunningham says Haldane has revenues of under 50 million British pounds, from sales of 350 products sporting such well-known brands as Vegemince (the company's brand leader; a soy-based minced meat alternative), Realeat, Direct Foods, Dietburger, So Good, and Hera.

The *Linda McCartney* line of vegetarian foods, launched in 1991, has become a leader in its category, with retail sales of about 50 million pounds in 1998. Haldane's newest line, launched in April, is *Linda McCartney's Dairylike*, non-dairy desserts developed by Haldane and marketed under a licensing agreement to use the Linda McCartney brand name. The line includes cultured and frozen vegan desserts which are free of lactose and cholesterol and fortified with calcium and minerals. Haldane is promoting the new Dairylike line using national TV and print ads. ADM is test marketing Dairylike in Southern California under the name Dairyless.

About one-third of Haldane's sales come from products made by third party manufacturers such as Asda and McVities.

During the last year Haldane has faced two big challenges: (1) In the spring of 1998 EU food labeling legislation required companies to stop using the term "soya milk" or "yoghurt" or any misspelling of it. Haldane reformulated, renamed, and relaunched its line of non-dairy products. (2) In Sept. 1998 a EU regulation which came into

effect requiring products containing genetically modified soy protein to be labelled appropriately. Haldane guaranteed that all its soy products are GMO-free, made from identity preserved soybeans.

Haldane's "Realeat Survey," now in its 15th year, studies attitudes toward meat eating in the British Isles. Each survey is conducted by The Gallup Organization. The 1997 Realeat Survey showed that a record 5.4% of the British population now chooses a vegetarian diet, up 20% over 1995. Thus, Britain now has more than 3 million vegetarians. And 14.3% of the population no longer eats red meat—over 8 million people. Many Britishers avoid red meat because of fear of BSE or Mad Cow Disease. In the 1995 Survey 7% mentioned BSE as their main health concern; this figure rose to nearly 22% in the 1997 survey. The 1998 Survey showed that 13% (over 7 million people) never or almost never eat dairy products. Today roughly half of the British population is actively reducing consumption of meat, especially red meat, and one-third is doing the same with dairy products.

1787. *SoyaScan Notes*. 1998. Chronology of major soy-related events and trends during 1998 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** June—WholeSoy Co. of San Francisco (Ted Nordquist) launches Creamy Cultured Soy (soy yogurt) in 3 flavors. In about 2001 the product is renamed WholeSoy Soy Yogurt.

June—Britain's Prince Charles, who practices organic farming and is a patron of the Soil Association, writes an article attacking genetically modified food that is published in Britain's *Daily Telegraph*. Explaining that he wouldn't eat such food or knowingly give it to his family or guests, he concludes, "I happen to believe that this kind of genetic engineering takes mankind into realms that belong to God and God alone." The prince's surprise article helped unleash a wave of anti-GMO activity and sentiment, that continued for weeks in the British press and carried over to the Continent.

Sept.—New European Union (EU) labeling laws, requiring labeling of genetically modified ingredients, go into effect. However the regulation exempts foods which contain no soy protein but do contain soy oil or soy lecithin.

Sept.—Imagine Foods of Palo Alto, California, the natural foods leader in nondairy beverages, launches Soy Dream (soymilk), the company's first soy product. They support the product with an extensive and very creative advertising campaign.

Sept.—Protein Technologies International starts to offer certified non-GMO soy protein isolates.

Oct.—The Hain Food Group (which owns Westbrae) has announced that it will start to label some of its products as GMO-Free (i.e. free of genetically modified / engineered organisms). It has developed a "Pure Food" logo and a "Just Say No to GEOs" slogan.

Oct. 16–Worthington Foods purchases the Harvest Burger product line from ADM; by agreement, ADM will continue to make the Harvest Burgers at its Illinois plant.

Nov. 1-2–Conference titled “Estrogen, phytoestrogens and cognitive function” held in Seattle, Washington (organized by Mark Messina), largely to learn more about the research of Lon White on tofu and dementia/Alzheimer’s disease.

Dec. 31–DE-VAU-GE acquires Bruno Fischer GmbH, which sells bottled soymilk; both companies are located in Germany.

Major trends: (1) The steady expansion of genetically engineered Roundup Ready soybeans. This year an estimated 30% of America’s soybean acreage was planted to genetically engineered soybeans. This is one of the hottest and most controversial stories in most countries of the world—except the United States, where it gets unbelievably little media coverage. (2) The hype about the health benefits of soyfoods continues to increase. There are definitely some health benefits, but the exaggerated statements that now routinely appear in articles and advertisements go far beyond what can be supported by scientific evidence. The media seems intent on making as much money as possible as it whips up the story of soy’s health benefits. The bigger the story it becomes, the more money they can make later debunking it. (3) The natural foods industry is changing into a supplements industry because of the higher profit margin on supplements. Many consumers are being misled into thinking that supplements are more important than healthy foods in determining good health. (4) Among commercial soy products this year, the ratio of supplements to foods has increased sharply.

Areas of potential danger on the horizon: (1) Lon White of Hawaii and his data on tofu and dementia/Alzheimer’s disease. (2) Young girls discovering that overdoses of soy isoflavones could be useful in growing breasts, then publicizing that information using the Internet and World Wide Web. (3) The danger that the media will start to debunk its own hyped story of the health benefits of soy. (4) The concern that the FDA health label claim for soy will not include traditional soy products—such as tofu and soymilk—which contain too much fat. Therefore manufacturers will be tempted to add soy protein isolates to raise the protein to a level that will trigger the health claim.

1788. Allison, Karen Hubert. 1998. *The vegetarian compass: New directions in vegetarian cooking*. Boston, Massachusetts: Little, Brown & Co. xiii + 383 p. Illust. Index. 24 x 20 cm.

• **Summary:** One chapter (p. 163-210) is titled “Tofu, tempeh, and seitan.” The index contains 28 entries for tofu, 23 for tempeh, 17 for seitan, 2 each for miso and for texturized vegetable protein (TVP), and 1 each for milk–nondairy and for soy grits.

On the inside rear dust jacket is a portrait photo of the author and a brief biography. Karen “was the former owner, with her husband, Len Allison, of the three-star New York City restaurant Huberts. She taught at the Culinary Institute of America and was the author of the novel *How I Gave My Heart to the Restaurant Business* (1997). She lived in New York and Maui until her death in 1997.” She is the mother of three children. Address: New York and Maui.

1789. Campbell, Regina. 1998. *Regina’s vegetarian table: your invitation to flavor, freshness, and health*. Roclin, California: Prima Health. A Div. of Prima Publishing. xx + 336 p. Illust. (some color). Index. 24 x 19 cm. Reprinted in 2002.

• **Summary:** The list of “uncommon foods commonly used in vegetarian cooking” (p. xiv-xvi) includes descriptions of miso, soy milk, shoyu, tahini, tempeh, tofu, and vegetarian worcestershire sauce.

A table (p. xix) compares the nutritional composition of 5 types of cheddar cheese made with cow’s milk (whole), cow’s milk (nonfat), goat’s milk (whole), soy milk (whole), and soy milk (nonfat).

Soy-related recipes: Teriyaki and pineapple cheese spread (p. 8). Silky caesar dip (with “10 ounces soft tofu” and “1½ teaspoons Worcestershire sauce,” p. 14). Tofu vs. sour cream vs. yogurt (sidebar; a table compares nutritional composition, p. 16). Gourmet teriyaki sauce (with “1 cup shoyu {or soy sauce}” plus honey, sesame seeds, minced onion, pressed garlic, sesame oil, and finely grated fresh ginger, p. 52). Chinese eggdrop soup with tofu (p. 66). Scorched teriyaki green beans (p. 188). No need to soak beans (sidebar, p. 190).

The section titled “Soy dishes” (p. 237-52) includes: Tofu and broccoli in peanut sauce. Honey-mustard tofu salad. Tempeh con queso. Mexican tofu. Chilled lemon-rice soup. Faux beef spaghetti sauce (with “1 cup beef- or chicken flavored TVP {optional}”). Spanish rice with tempeh. Stuffed peppers with tempeh and rice. Vitamin B-12 in the diet (sidebar). Not-so-Sloppy Joes (with tempeh and Worcestershire sauce). Tempeh tacos. Barbecue tofu with caramelized onions. Lentil loaf (with tempeh). Teriyaki eggplant and tofu.

Vegurritos (vegetarian burritos, with 2-3 tablespoon imitation bacon bits, p. 257). A color photo of Regina appears on the front cover. Address: Cook, columnist, television producer, writer, and on-air personality, Sacramento, California.

1790. Melina, Vesanto; Forest, Joseph. 1998. *Cooking vegetarian: healthy, delicious and easy vegetarian cuisine*. Minneapolis, Minnesota: Chronimed Press. 239 p. + 8 unnumbered pages of plates. Foreword by Graham Kerr. Illust (some color). Index. 25 cm. [9 ref]

• **Summary:** This is a vegan cookbook, originally published

in Canada by Macmillan, Canada in 1996.

The index contains 14 entries for tofu, 2 each for tempeh, for textured vegetable protein (TVP), and for miso soup, and 1 each for soy milk and for teriyaki sauce. Melina Vesanto was born in 1942. Address: 1. Registered Dietician, Canada; 2. Chef and food consultant, Vancouver.

1791. Cooper, Kim. 1999. New developments with soybeans in Canada (Interview). *SoyaScan Notes*. Jan. 18. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The term “food-grade soybeans” is increasingly widely used by Canadian soybean exporters and their Asian customers to refer to all soybeans developed specifically for food use. Many are large seeded, but some are also small seeded—developed for sprouting (to have high germination) or natto. All have a white hilum. The biggest problem with this term is that all soybeans can be used for human food. About 5-10% of the soybeans exported from Canada are “food-grade.”

Most overseas buyers of Canadian food-grade soybeans want them to be GMO-free. In addition, some overseas crushers now also want soybeans that are GMO-free, though they need not be food grade.

The genetically engineered soybeans grown in Canada are generally handled in two different ways. The great majority, which are used by Canada’s two major soybean crushers (owned by the American companies ADM and Central Soya) are given no special treatment; they are simply sold by farmers to their local elevator, where they get mixed with other soybeans in “the stream.” These two crushers have made it very clear that they do not want these GMO soybeans to be segregated or given any special treatment. However the genetically engineered soybeans purchased by soybean exporters are handled like any other identity preserved (IP) crop, primarily so that buyers in foreign countries who want GMO-free can be guaranteed what they want. For the past ten years, the Canadian soybean trade has been developing its system of IP varieties, especially to serve Japanese customers—who usually like specific varieties. Exporters would contract with farmers to grow these special varieties, then at harvest they would be stored in their own elevator, silo, tank, etc. and shipped with their identity preserved. Organically grown soybeans are handled in a quite similar way. So when GMO soybeans arrived, the export trade decided to handle them just like IP varieties—actually more like organic soybeans than like IP. Setting up such an IP system has that added benefit that if and when, in the future, consumer benefits are genetically engineered into soybeans, their identity will have to be preserved. An increasing percentage of the soybeans grown in Canada are grown under contract—perhaps about 10% at present.

Shurtleff notes: The U.S. soybean distribution system is based on bulk shipments; its ability to handle IP shipments is much less advanced than the Canadian system. For

this reason, the U.S. exports of soybeans to Europe have decreased dramatically over the past year. In America, GMO soybeans simply took over the main soybean distribution system; they did so with hardly any discussion and probably based on the assumption that hardly anyone would care. It is the latter assumption that is highly questionable.

Kim: U.S. soybean exporters went to Europe several years ago and told their customers: “We have these genetically modified soybeans and we’re going to be shipping them to you starting this fall.” The European buyers explained that European consumers are different from American consumers, and may want to think about and discuss this new matter. The American’s said, “Sorry, we can’t wait. The soybeans are coming.” The Europeans felt upset, like the Americans were trying to shove something down their throats.

In Canada, the problem is far from resolved. Consumers in Canada are starting to become aware of this issue, and they are just starting to sound the alarm. But more and more genetically modified products are coming onto store shelves, so Kim believes consumers will gradually develop confidence in them—but not in the next 1-2 years. Kim believes that there is essentially no chance that most consumers will reject genetically modified foods in the long run.

The international conference in Canada last September was attended by about 200 people; there would have been more but for an airline strike in Canada. Peter Golbitz presented an excellent keynote address. His paper and some others are posted on the OSGMB website. Address: Marketing Specialist, OSGMB, Chatham, Ontario, Canada N7M 5L8. Phone: (519) 352-7730.

1792. *ADM Nutrition & Health Update (Decatur, Illinois)*. 1999. A primer on soy isoflavones. 1(1):1, 3. Winter.

• **Summary:** Contents: Phytochemicals—Changing the way nutritionists view foods. What’s special about isoflavones? Defining isoflavones. Isoflavones and estrogen. Isoflavones are more than phytoestrogens. Effects of food processing on isoflavones. Approximate isoflavones content of soyfoods and soy products (table). Defining optimal isoflavone intake.

1793. *ADM Nutrition & Health Update*. 1999-- . Serial/periodical. Decatur, Illinois: Archer-Daniels-Midland Co. Vol. 1, No. 1. Winter 1999. Quarterly. Editor: Norma Maddio.

• **Summary:** This newsletter is published by ADM’s Nutraceutical Division. Contents of Vol. 1, No. 1: Welcome to this publication. A primer on soybean isoflavones: Phytochemicals—Changing the way nutritionists view foods, what’s special about isoflavones?, defining isoflavones, isoflavones and estrogen, isoflavones are more than phytoestrogens, effects of food processing on isoflavones, approximate isoflavones content of soyfoods and soy



## ADM Nutrition & Health Update

Archer Daniels Midland Newsletter on Nutrition News, Research, and Products

Vol. 1, #1

products (table), defining optimal isoflavone intake. Novasoy update. Beverage applications. Research briefs: Summaries of six scientific articles published in 1998. In the news: (1) Worthington Foods, Inc. and ADM sign agreement. (2) ADM forms nutraceuticals division. (3) Health claim considered by FDA. Fast fact: U.S. soybean production. Meetings calendar. ADM divisions. Address: Decatur, Illinois. Phone: 217-424-5944.

1794. *Milling and Baking News*. 1999. Dwayne Andreas as creator and builder. Feb. 9. [1 ref]

• **Summary:** An excellent evaluation of the career and contribution of Dwayne Andreas, longtime president and CEO of Archer Daniels Midland Co. Andreas and the word “agribusiness” are inextricably linked. He played a major role in creating and interpreting modern agribusiness. He has built a publicly owned company into to the best in the world, even though most of his competitors can operate in secret.

1795. Archer Daniels Midland Co. 1999. Do what comes naturally [Vitamin E] (Ad). *Soybean Digest*. Mid-Feb. Back cover.

• **Summary:** At the top half of the ad is a sepia photo showing an elderly man and woman dancing on a pier over a body of water. The text below the photo states: “The best things in life just seem to come naturally. Like natural Vitamin E from ADM. Made from the healthy goodness of soybeans, natural Vitamin E is significantly more effective than synthetic brands. In fact, studies have shown it can help you maintain cardiovascular health as well as a health cholesterol level. Natural Vitamin E also helps support the immune system, strengthening your body’s own disease-fighting abilities. And some say it can even help you feel younger, longer. Look for natural Vitamin E in leading brands of dietary supplements. It might just be the most natural choice you’ll ever make.”

Below the text is the ADM logo: “Supermarket to the world.” [www.admworld.com](http://www.admworld.com).

The text flows around two small photos which show: (1) A person’s hand reaching into dry soybeans. (2) Three vitamin E gelcaps. Address: Box 1470, Decatur, Illinois 62525. Phone: 217-424-5200.

1796. *Soybean Digest*. 1999. ADM donates soy beverage to Cuba. Mid-Feb. p. 93.

• **Summary:** Archer Daniels Midland Co. is donating 100 metric tons of powdered soy beverage for distribution to children in Cuba. This is one of the biggest donations of food ever made to Cuba, according to the U.S. Dep. of Commerce. ADM chair Dwayne Andreas says that this donation is a gift to the children of Cuba from the 23,000 employees of ADM.

1797. Soyfoods Association of North America. 1999.

Soyfoods Association of North America celebrates April as Soyfoods Month (News release). Washington, DC. 2 p. Feb. 15. 28 cm.

• **Summary:** According to HealthFocus, a research firm located in Des Moines, Iowa, that tracks consumer trends: (1) In 1998 some 16% of U.S. shoppers use soyfoods such as tofu, tempeh, tofu hot dogs, etc.—up from 13% in 1996. (2) 10% of shoppers in 1998 are eating more soy specifically because they believe it will reduce their risk of disease—this is an increase of 3% from 1996 data.

What forces are driving this increased interest in soyfoods? (1) The double-digit increase of Asians in America. (2) Baby boomers (now in their 50s and more interested in longevity and health) fighting death, disease, and aging. (3) More and more teens and young adults are vegetarians or partial vegetarians, choosing more plant-based foods. An ADM survey found that 97% of colleges and universities now offer meatless entrees on their menu. Address: 1723 U Street, N.W., Washington, DC 20009. Phone: 202-986-5600.

1798. **Product Name:** Easy Soy Gold [Soy Isoflavones].

**Manufacturer’s Name:** Carlson (J.R.) Laboratories, Inc.

**Manufacturer’s Address:** Arlington Heights, Illinois.

Phone: 1-888-234-5656.

**Date of Introduction:** 1999 February.

**Wt/Vol., Packaging, Price:** Bottle.

**New Product—Documentation:** Spot in Healthy & Natural Product News 1999. April. p. 12. A color photo shows the bottle and label. “An easy, reliable way to get soy! One tablet of Easy Soy Gold provides more powerful isoflavones than 2½ cups of soy milk.”

Talk with company representative. 1999. March 15. This



Contact: Rebecca Stephens  
 Date: February 15, 1999  
 Ph: (202)986-5600

## Soyfoods Association of North America Celebrates April As Soyfoods Month

WASHINGTON, D.C. — The Soyfoods Association of North America celebrates April 1999, as Soyfoods Month. It's time for all Americans to enjoy "Soyfoods Once a Day for Life." Many people have learned they can't live without soy.

product is pure soy isoflavones, such as the type made by ADM. It was introduced about 2 months ago. The company got involved with soy products about 2 years ago.

1799. Lamp, Greg. 1999. Soyfoods health claim nears FDA okay: Heart-risk labeling should boost soybean demand. *Soybean Digest*. Feb. p. 68.

• **Summary:** Funds from the soybean checkoff helped generate the research and information that was submitted to the FDA. The process began in 1995 with financial assistance from the Illinois Checkoff Board and the United Soybean Board (USB). Roughly \$1 million in soybean checkoff funds were invested in the project. "A coalition to develop the soy health claim involved ASA [American Soybean Association], USB, state checkoff boards and industry partners, such as Protein Technologies International, Central Soya and the Archer Daniels Midland Company."

An estimated 20% of all Americans (54.2 million adults) have high blood cholesterol levels—over 240. ASA predicts that if each of these people consumed 25 grams (less than 1 ounce) of soy protein each day, annual demand for soybeans would increase by more than 55.2 million bushels.

Consumption of U.S. soybeans in the United States now totals about 1.2 billion bushels a year.

A color photo shows two 3-shelf racks of American foods. Those on the left rack already contain soy protein: Mori-Nu Tofu, Take Care, GeniSoy bars, Harvest Burgers, Galaxy Veggie Slices, SoNice soymilk, Edensoy, Morningstar Farms [Worthington Foods] meat alternatives, etc. Those on the right rack are foods with potential to have soy protein added: Cream of Wheat, Raisin Bran, puddings, Snackwell's cookies, etc.

1800. Soyfoods Association of North America. 1999. Soyfoods Once a Day for Life (Portfolio). Washington, DC. 21 inserts. Feb. 15. 28 cm.

• **Summary:** The following eight news releases are from the Soyfoods Association: (1) Soyfoods Association of North America celebrates April as Soyfoods Month (2 p.). (2) Soyfoods sales soar with increased consumer acceptance (2 p.). (3) Soyfoods Association of North America—Industry insiders (ask the experts, 1 p.). (4) Start young enjoying soy (ideas for kids, 1 p.). (5) 1999 Soyfoods Month sponsors (a half-page profile of 11 companies: Archer Daniels Midland, Galaxy Foods Co., Hain Food Group, Lightlife Foods, Inc., P.J. Lisac & Associates, Inc., SunRich, Inc., Tetra Pak, Vitasoy USA Inc., White Wave, Inc., Worthington Foods, Inc., Yves Veggie Cuisine; 6 p.) (6) Soyfoods Association of North America product list (lists soyfood products of 15 companies, many of whom are sponsors of "April is Soyfoods Month," 11 p.). (7) Soyfoods Association of North America member list (52 companies, 1 p.). (8) Dear member of the press, from Allan Routh, President, SANA (1 p.).

Product brochures from the following companies are also included: (9) Sweet Soybeans—Hearty & Natural Edamame, from SunRich. (10) Vitasoy soymilk, (11) Fresh, ready to heat entrées, from Yves Veggie Cuisine. (12) Go Veggie (dairy alternatives), from Galaxy Foods. (13) Lisanatti—The good health cheese alternative, from P.J. Lisac & Associates (Clackamas, Oregon). (14) Trust the protein authority, from ADM. (15) Fact sheet, from White Wave. (16) Nasoya tofu. (17) Veggie recipes, from Galaxy Foods. (18) Westsoy recipes, from Westbrae Natural. (19) Eating healthy can be soy easy, from Lightlife. (20) The change will do you good, from Morningstar Farms. (21) Sweet beans—Vegetable soybeans, from Sno Pac. Address: 1723 U Street, N.W., Washington, DC 20009. Phone: 202-986-5600.

1801. Butts, Jennifer. 1999. Charitable donations: life-long giving illustrates generosity. *Herald and Review (Decatur, Illinois)*. March 7. p. 60. Sunday.

• **Summary:** A photo shows: "Charitable meeting: Mrs. Inez

Andreas (left) greets Mother Teresa as Dwayne Andreas and an unidentified Sister of Charity look on.”

A sidebar titled “Memorable comments” states: “The following quote comes from comments by Dwayne O. Andreas, Chairman of the Board and Chief Executive, at the 69th annual ADM shareholders meeting in early 1993.

“The following quote was spoken by President Dwight David Eisenhower in 1953, and when I heard it I asked for a transcript, which I have carried with me ever since.

“Every gun that is made, every warship launched, every rocket fired signifies, in the final sense, a theft from those who hunger and are not fed, those who are cold and are not clothed.

“This world in arms is not spending money alone. It is spending the sweat of its laborers, the genius of its scientists, the hopes of its children. ... This is not a way of life at all in any sense. Under the cloud of threatening war, it is humanity hanging from a cross of iron.”

“The nations are spending more than \$1 trillion a year on destructive weapons—more than \$3 million every minute, day and night, including Sundays and holidays. The cost of one Trident submarine would pay for immunization and basic health care for all the needy children in the world. The cost of 10 bombers or two submarines would pay for all the food needed to arrest the starvation of 100,000,000 people for one year—long enough to let them start to earn a living.

“Shortly after Ike made that statement he sponsored Public Law 480, a law designed in 1954 to distribute U.S. Food abundance to the hungry around the world. In recent months Public Law 480 has been revived to help Somalia and other countries feed their people, because, thank God, we couldn’t stand to see the faces of these starving children on television.

“That is why I believe that in years to come ADM technology can help save the world.

“Shareholders, you underwrite these great enterprises by permitting your capital and its proceeds to spawn ADM’s endless growth. You make it possible, and we aspire to continue to merit your confidence.

“Think about it. Ike had it right.” Address: Special projects writer.

1802. Butts, Jennifer. 1999. Lisbon [Iowa] classmates remember Dwayne Andreas as ‘special’ student. *Herald and Review (Decatur, Illinois)*. March 7. p. 68 [newspaper page 14]. Sunday.

• **Summary:** Dwayne Andreas attended school in Lisbon, Iowa. One building housed first grade through 12th grade. “He was a whiz at math. He would have his four columns of addition problems done before we even solved the first problem.”

His father was “a very well respected president of the Lisbon school board.” Dwayne had a long walk from his farm on the other side of town to school and back. And he

had to walk home and back for lunch.

Dwayne gave a “stirring send-off speech” as he and his class graduated from high school. He finished high school in an accelerated three years. His fellow classmates in high school recognized his “talents and his vision... we all thought he was something special.”

Many of the memories are from Eleanor Meyers Butterfield, a student classmate of Dwayne Andreas. Photos show: (1) “Fourth Grade: In May 1927, Dwayne Andreas was in fourth grade. Pictured here are (back row, from left) Miss Eva Floyd (teacher), Floyd Leinbaugh, Orion Owens, Dwayne Andreas, Marvin Brokel, John Thayer and Gordon Bridges; (front row, from left) Helen Graver, Eleanor Van Fossen and Eleanor Meyers (Butterfield).” (2) Eleanor Meyers Butterfield (in 1935 and in 1997). (3) “School Days: Here is the school Dwayne Andreas attended in Lisbon, Iowa. The building, pictured here in 1938, housed first grade through 12th grade. An auditorium and basketball court were downtown in the old ‘Opera House.’ Even his fellow students recognized his talents and his vision, especially in high school.” Address: Special Projects Writer.

1803. Dawson, Linda. 1999. Family ties: Andreas’ children always knew ‘Dad’ as a special guy. *Herald and Review (Decatur, Illinois)*. March 7. p. 59. Sunday.

• **Summary:** A photo shows the Andreas family (left to right): Sandy McMurtrie, Inez Andreas, Michael Andreas, Dwayne Andreas, and Terry Andreas.

Note: Inez is Dwayne’s 2nd wife. Sandy has worked with Mother Teresa and her Missionaries of Charity in Calcutta, India. Dwayne and his first wife Bertha Benedict (they were married in 1935 in Florida) had two children: Terry Lynn Andreas (born about 1943) and Sandra Ann Andreas. Address: Special projects coordinator.

1804. *Herald and Review (Decatur, Illinois)*. 1999. The Andreas’ legacy: his children reminisce on life with Dad. March 7. p. 58. Sunday.

• **Summary:** Photos show: (1) Brothers: Glenn (left) and Dwayne Andreas, about 1920.

(2) Family portrait: This photo of the family in which Dwayne was a child was taken in about 1930. Dwayne Andreas is pictured seated on the floor, holding the dog. Other family members, from left, are Albert Andreas; his wife, Dorothy; their son, Perry; Lowell Andreas (Dwayne’s younger brother); Lydia Andreas (Dwayne’s mother); Reuben Andreas (Dwayne’s father); Lenore Andreas (Dwayne’s sister); and Glenn Andreas (Dwayne’s older brother).

(3) Young children: The Andreas children, about 1923 (from left): Lenore, Glenn, Dwayne and Lowell. Address: Special projects coordinator.

1805. *Herald and Review (Decatur, Illinois)*. 1999. Photo

gallery. March 7. p. 62. Sunday.

• **Summary:** Clockwise from upper left, four photos show Dwayne Andreas and: (1) Senator Hubert Humphrey, President John F. Kennedy and John Thatcher, chairman of the Farmers Union Terminal Association (1964); (2) President Jimmy Carter and Rosalyn; (3) President Harry S. Truman and Mrs. Inez Andreas; (4) Senator Humphrey and staff members with Pope John XXIII.

1806. *Herald and Review (Decatur, Illinois)*. 1999. Memories. March 7. p. 63. Sunday.

• **Summary:** Clockwise from upper left, four photos show Dwayne Andreas and: (1) USSR President Mikhail Gorbachev, an interpreter and Armand Hammer; (2) Senator Hubert Humphrey, William Thatcher and President Lyndon B. Johnson; (3) Senator Bob Dole and President Richard Nixon; (4) Nancy Reagan and President Ronald Reagan.

1807. *Herald and Review (Decatur, Illinois)*. 1999. More memories. March 7. p. 65. Sunday.

• **Summary:** Clockwise from upper left, four photos show: (1) Dwayne Andreas, front left, conferring with Mikhail Gorbachev, across the table, at a Dec. 3, 1984, meeting in Moscow; (2) Dining with Patriarch Alesky II of the Russian Orthodox Church; (3) Conferring with Boris Yeltsin of Russia at the Andreas' Sea View home in Florida; (4) Greeting President George Bush. Address: Special to the H&R.

1808. *Herald and Review (Decatur, Illinois)*. 1999. Photo memories and a poem. March 7. p. 66 [newspaper p. 12]. Sunday.

• **Summary:** Photos: (1) Dwayne and Lowell with a swordfish and several smaller fish they caught at Miami Beach, Florida. (2) Dwayne poses with Supreme Court Justice Warren Burger and President Ronald Reagan. (3) Twenty-seven students in Lisbon pose for a school picture with Dwayne second from right in the bottom (front) row. Address: Special to the H&R.

1809. *Herald and Review (Decatur, Illinois)*. 1999. [ADM by the numbers]. March 7. p. 70 [newspaper page 15]. Sunday.

• **Summary:** "Number of employees added since Dwayne Andreas assumed chairmanship of ADM in 1970: 20,052.

"Number of locations added: 234.

"Increase in shareholder's equity: \$6.4 billion [= \$6,400 million].

"Value of Dwayne Andreas' leadership: Priceless."

1810. Reeve, Stuart. 1999. Agriculture's man of the century: a salute to Dwayne O. Andreas for a lifetime of contributions to agriculture and humanity. It's been an amazing career: legend in agriculture praises influence of others. *Herald and Review (Decatur, Illinois)*. March 7. p. 55, 69. Sunday.

• **Summary:** This outstanding story has many parts. On the right of page 55 is "Life Line," a chronology of Dwayne Andreas' life and work. Other stories include:

Page 1: "Five 'accidents' have great impact." "Life line" (timeline / chronology of Dwayne's life).

Page 2: "Andreas, ADM prove strong allies of U.S. farmers."

Page 4: "The Andreas legacy: His children reminisce on life with dad." Family has always been an important part of Dwayne Andreas' life.

Page 5: "Family ties: Andreas' children always knew 'Dad' as a special guy.

Page 6: "Charitable donations: Life-long giving illustrates generosity." Mother Teresa found a friend and helper in Dwayne Andreas. A photo shows Mrs. Inez Andreas greeting Mother Teresa as Dwayne Andreas (5'5" tall) looks on. Dwayne's daughter, Sandy McMurtie, has worked with Mother Teresa and her Sisters of Charity, and Dwayne has generously supported her work with food and money.

Page 7: ADM has been a major source of support to Decatur, Illinois and its economy. One way is by adding so many new jobs, but also by generous financial help. Since his arrival at ADM in 1965, Dwayne Andreas has made his mark on agribusiness. A photo shows a bottle of Novasoy isoflavones. G. Allen Andreas is the new CEO and president of ADM.

Page 8: Photos of Dwayne Andreas with "Sen. Hubert Humphrey, President John F. Kennedy and John Thatcher, chairman of the Farmers Union Terminal Association (1964); President Jimmy Carter and Rosalyn; President Harry S. Truman and Mrs. Inez. Andreas; Sen. Humphrey and staff members with Pope John XXIII."

Page 9: Photos of Dwayne Andreas with more influential people: "USSR President Mikhail Gorbachev, an interpreter and Armand Hammer; Sen. Hubert Humphrey, William Thatcher and President Lyndon B. Johnson; Sen. Bob Dole and President Richard Nixon; and Nancy Reagan and President Ronald Reagan."

Page 10: "Dwayne Andreas has made fighting hunger his mission in life." "In 1946 he helped develop the federal school lunch program that now feeds 26 million children annually." "In the late 1960s, he helped Sen. Bob Dole and Sen. Hubert Humphrey develop the federal Food Stamp Program."

Page 11: More photos of Dwayne with famous people, including Mikhail Gorbachev in 1984 in Moscow, Patriarch Aleksey II, of the Russian Orthodox Church, President Boris Yeltsin of Russia and President George Bush.

Page 12. Photos.

Page 14: Dwayne Andreas attended school in Lisbon, Iowa.

A.E. Staley gave Dwayne Andreas a key piece of advice which was one of five events (all accidents) that changed his life. Andreas was sent to the Staley Company in Decatur to

buy a year's supply of soybean meal. After completing the deal, he was getting into the elevator on the 7th floor when Mr. Staley, who was about 80 years old at the time, reached right into the elevator, grabbed his arm and said "Come back." Later, Dwayne often wondered what would have happened if the elevator doors had closed just three seconds sooner.

They had lunch together and Mr. Staley said, "Young man, it's foolish for you to come down here to buy soybean meal. You should build your own plant in Iowa." Dwayne said, "Mr. Staley, I don't have that kind of money." He replied, "Go to Allis-Chalmers (the equipment manufacturer) in Milwaukee and they'll send you a soybean plant 5% down. Give them my name as a reference."

Three days later Dwayne was starting to build a soybean processing plant.

Last page [70]: From the employees of ADM: "Value of Dwayne Andreas' leadership: Priceless. Thank you for 28 years of wisdom, humanitarianism, and leadership." "Number of employees added since Dwayne Andreas assumed chairmanship of ADM: 20,052. Number of locations added: 234. Increase in shareholder's equity: \$6.4 billion."

1811. Reeve, Stuart. 1999. Banking on ADM: 'quiet giant' supports major portion of Decatur economy. *Herald and Review (Decatur, Illinois)*. March 7. p. 61. Sunday.

• **Summary:** Photos show: (1) "In the cart: Novasoy™ isoflavones have proven successful as one of ADM's initial entries into the burgeoning nutraceutical market."

(2) "On the river: ADM products are transported along inland waterways on their journey to countless international export markets."

(3) "At home: The horizon is constantly changing at ADM's corporate headquarters on the east side of Decatur, as new plants and processes pop up to help meet the growing global demand for ADM ingredients." Address: Special to the H&R.

1812. Reeve, Stewart. 1999. Dwayne Andreas has made fighting hunger his mission in life: Andreas campaigns against hunger like it was devil's work. *Herald and Review (Decatur, Illinois)*. March 7. p. 64. Sunday.

• **Summary:** A portrait photo shows Dwayne Andreas.

A sidebar is titled: "Employee also spreads the word: here's why Gary Keltner says he's a walking advertisement for ADM and the Andreas family." Address: Special to the H&R.

1813. Archer Daniels Midland Co. 1999. ADM this quarter: Second quarter report to shareholders. Decatur, Illinois: ADM. 4 p.

• **Summary:** Dwayne Andreas has stepped down as ADM Chairman after 28 years at the helm. He will remain on the

Board as Chairman Emeritus. G. Allen Andreas will be his successor as Chairman and CEO. John D. McNamara was elected president of the company. Color photos all three men. Address: Decatur, Illinois.

1814. Archer Daniels Midland Co. 1999. Do what comes naturally. And keep your heart healthy (Ad). *Soybean Digest*. March. p. 57.

• **Summary:** At the top half of the ad is a sepia photo showing a man and a child having fun swinging on a rope swing. The text below the photo states: Being true to yourself means listening to your heart. And if you listen close enough, you'll hear about natural Vitamin E from ADM. Made from soybeans, natural Vitamin E is a powerful antioxidant that can help you maintain cardiovascular health, as well as a healthy cholesterol level. Which is good news for everyone who's looking out for their heart. Look for natural Vitamin E in leading brands of dietary supplements. Because if you don't listen to your heart, who will?"

Below the text is the ADM logo: "Supermarket to the world." [www.admworld.com](http://www.admworld.com).

The text flows around two small color photos which show: (1) Three vitamin E gencaps. (2) Several mature soybean plants growing in a field. Address: Box 1470, Decatur, Illinois 62525. Phone: 217-424-5200.

1815. *Food Magazine (Food Commission, London)*. 1999. Soya safety questions. Jan/March. p. 8. No. 44.

• **Summary:** This magazine has expressed considerable doubts about the safety of soya-based infant formula, given the high levels of oestrogen-like chemicals found in such products, and the small body weights of babies. The soy industry has continued to deny any problems, but food giant Archer Daniels Midland Co. (ADM) has withdrawn its application to the US Food and Drug Administration to have its soya isoflavone products given a Generally Recognized as Safe (GRAS) status.

The company said it is "in the process of incorporating additional information to update the file." The FDA has been deluged by letters from campaigners in New Zealand and the UK, including the Food Commission, pointing out the scientific evidence for a potential hazard.

1816. INTSOY. 1999. Strategies for success: Processing and utilizing soybeans for global markets—1999 INTSOY Course July 28 to August 7 (Leaflet). Urbana, Illinois. 3 panels each side. Each panel: 22 x 9 cm.

• **Summary:** This glossy leaflet (green and black on white) announces the INTSOY course, which now runs for only 11 days and costs \$3,750. Of the 11 days, only 4½ are classroom instruction, one is an excursion to ADM, and the last 4 are attendance at the Global Soy Forum 99 in Chicago, Illinois. Classes are scheduled to be held at the National Soybean Research Laboratory. The fee does NOT

cover the cost of accommodation at the University of Illinois and the conference in Chicago. Address: Attn: Dr. Karl E. Weingartner, INTSOY, Univ. of Illinois, 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 333-6422.

1817. Worthington Foods, Inc. 1999. Annual report 1998: Celebrating 60 years, 1939-1999. 900 Proprietors Rd., Worthington, OH 43085. 20 p. 28 cm.

• **Summary:** For the fifth consecutive year, Worthington Foods has achieved record earnings and record sales. Net sales rose to \$139.5 million in 1998, up 18.2% from \$117.9 million in 1997. Net income (profit) rose to \$8.021 million in 1998, up 0.2% from \$8.006 million in 1997. Earnings per share (diluted) fell to \$0.66 in 1998, from \$0.67 in 1997. Gross profit as a percentage of net sales increased to 43.2% in 1998 from 41.3% in 1997. Foodservice sales rose nearly 33% in 1998 compared with the prior year.

Contains a nice, full-page story honoring Allan R. Buller—visionary, leader, and friend, who steps down after 53 years of service to the company. When he arrived in Dec. 1945 “the company had sales of less than \$250,000 and had only recently moved its manufacturing from a two-story white frame house to a newly-built plant. Distribution consisted largely of mailing its most popular product, gluten-based *Choplets*, to households across the country at a price of three cans for a dollar.” In the 1950s he helped to make “Worthington the first company in the world to offer frozen vegetarian foods.” The company reached its first million-dollar sales year in 1960. In 1982, at age 65, Buller withdrew his retirement savings and refinanced his house to further the pursuit of his lifelong dream. “To make healthful vegetarian foods readily available to mainstream consumers.” He and a handful of other investors—including Dr. George Harding IV and James Hagle—raised \$9.5 million to buy back the assets of Worthington Foods from Miles Laboratories. “The deal closed on Friday [in October]; and the reorganized company—with Buller as president—started production the next Monday without missing a single order or shipment.” Buller retired as president of Worthington Foods in 1986, when Dale Twomley was named to the post. He became chairman of the board in 1989; now, a decade later, he steps down from that post, succeeded by Twomley. He joins other fellow Worthington visionaries, Jim Hagle and George Harding, in seeing a brilliant future for vegetarian foods. “‘When I was growing up, vegetarianism was accepted largely on faith,’ he recalls. ‘But today, we have strong scientific evidence to support the benefits of this dietary approach. That can only mean a continually growing market for our products.’”

“Morningstar Farms (including *Harvest Burgers*) leads the meat alternative market category in supermarkets across the U.S., capturing a 52% market share. As the only brand with meat alternative products for every meal occasion, Morningstar Farms continues to provide customers with the largest variety of products and tastes.

“Shoppers can find the Morningstar Farms brand in more than 96% of the nation’s supermarkets. The line now includes more than two dozen frozen and refrigerated food items to replace whole eggs and processed meats. Most of these meat alternatives are made from high quality soy protein,…”

New products introduced during 1998 include MeatFree Corn Dogs (batter-dipped on a stick), MeatFree Buffalo Wings (a fun food, great for kids, spicy vegetarian drumettes), and Hard Rock Café Veggie Burgers (a partnership with Hard Rock Cafe restaurants worldwide), and Morningstar Farms Harvest Burgers (On 16 Oct. 1998 Worthington purchased the Harvest Burger product line from ADM; by agreement, ADM will continue to make the Harvest Burgers at its Illinois plant). Two new refrigerated products were introduced in “modified atmosphere packaging” (MAP): Chick Nuggets and Breakfast Patties. MAP products are sold in the grocer’s meat case.

Color photos show: Dale E. Twomley. Allan R. Buller. Three new product labels. An aerial view of Worthington’s manufacturing facility at Zanesville, Ohio.

Includes a 27-page “Notice of Annual Shareholders Meeting.” Address: Worthington, Ohio. Phone: (614) 885-9511.

1818. Buchheim, Steve. 1999. The success of ADM’s Novasoy soy isoflavone pills (Interview). *SoyaScan Notes*. April 13. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Consumer acceptance of Novasoy has been very positive. The product is doing very well, and has definitely met ADM’s expectations. Steve is glad that ADM makes a completely natural soy product in pills that contain 50 mg of soy isoflavones. One initial problem was the price: ADM’s customers pushed for a lower price, arguing that consumers were generally not willing to pay more than \$10/month for any one supplement, so in about May or June 1998 cut its wholesale price to half of what it had been.

Two big changes have taken place in the market during the past 12-18 months. First, two other companies now extract and sell pure soy isoflavones, one from the Netherlands and the other from Israel. Steve has heard that Central Soya—through Henkel Corp. (LaGrange, Illinois)—is also planning to start extracting and selling soy isoflavones. Second, consumers are now faced with many more supplement choices than before.

Steve receives many calls from satisfied consumers who simply want to tell him how the product has changed their lives. Most of these calls are from women who have gotten relief from menopausal symptoms. Shurtleff suggests that ADM start collecting specific information from women who call concerning menopause, such as: Age of caller. Educational level. Daily dosage and its effects on symptoms. Are you also consuming other soy products? If yes, how

much of each per day on average. Have you used Novasoy to replace ERT (estrogen replacement therapy) or Premarin? Address: Marketing Manager, Soy Protein Applications, Archer Daniels Midland Co., P.O. Box 1470, Decatur, Illinois 62525. Phone: 1-800-637-5824 X-5394.

1819. Buchheim, Steve. 1999. Thinking about GMO-free soybeans at ADM (Interview). *SoyaScan Notes*. April 13. Conducted by William Shurtleff of Soyfoods Center.  
 • **Summary:** GMO-free soybeans are currently the subject of a great deal of official discussion at ADM—in part because ADM has strong corporate relationships with many soy companies in the UK, where the GMO issue is now very hot. Steve has not heard that ADM may have established a new department to deal with GMO-free beans but he is very sure that no organization has yet developed a reliable test to determine whether a given sample of soybeans contains any beans that are genetically modified. He has seen many conflicting results from the same sample coming from Genetic ID and from a company in Germany. He is not sure whether the problem is in the test itself or in the sampling procedure. If a company does guarantee that a shipment of soybeans is GMO-free, it must do so with some statistically valid margin of error. But the key point is this: Before ADM or any other company starts selling GMO-free beans, they must do so in conjunction with a reliable test and with an acceptable margin of error.

Note: Things have not changed much at ADM since Dwayne Andreas officially retired. He still comes into work each day and seems to be as busy and involved as ever. He is greatly admired by those who work with and for him. Address: Marketing Manager, Soy Protein Applications, Archer Daniels Midland Co., P.O. Box 1470, Decatur, Illinois 62525. Phone: 1-800-637-5824 X-5394.

1820. Jacobson, Jim. 1999. Agribusiness flourished with Sinaiko, Andreas. *Cedar Rapids Gazette (Iowa)*. April 25.  
 • **Summary:** The subtitle reads: “This story is part of a yearlong series that looks at the impact that Iowans and Iowa institutions made on the world during the 20th century.” Discusses and compares Joe Sinaiko and Dwayne Andreas, with a small portrait photo of each. Sinaiko was one of America’s first soy millionaires. “At one time he was the king of soybeans” says Forbes Olberg (retired chairman of the board of Banks) of Sinaiko. Les Liabo [pronounced LAI-bo], who managed the Iowa Milling Co. plant for twenty years recalls that Joe was “truly a pioneer in the soy business.” Joe always believed that there was a better way of doing things, and he introduced new milling technologies before his competitors. In the early 1950s Sinaiko built a plant that used chemical solvents to extract more oil from soybeans.

In 1928, a salesman from Quaker Oats told him about some farmers in Illinois who were growing a new crop

called soybeans. Joe decided to turn his mill into a soybean processing plant.

To have enough soybeans to mill and sell, Joe traveled the back roads of Iowa, persuading farmers to grow the crop. After extracting the oil from the soybeans, he’d go back to the same farmers and sell them the protein-rich meal for livestock feed.

After the oil shortage of the early 1970s, Andreas spent \$20 million to build a plant that would convert corn into ethanol. But it proved too expensive as a gasoline additive until 1979, when the Iranian oil crisis hit and the federal government exempted ethanol—called gasohol at the time—from excise taxes. Address: Gazette Assoc. financial editor.

1821. **Product Name:** Pro Fam 891 Isolated Soy Proteins. **Manufacturer’s Name:** Archer Daniels Midland Co. **Manufacturer’s Address:** P.O. Box 1470, Decatur, IL 62525.

**Date of Introduction:** 1999 April.

**New Product–Documentation:** Note and product specification sheet sent by Clyde Boismenu of Basic Foods Co. in Los Angeles, California. 1999. May 27. “This is the first of a new generation of purified soy protein products. Very low flavor, very low odor, and protein functionality greater by a magnitude than anything else available.” Spec sheet (undated). “Pro Fam 891 isolated soy protein is specially produced for food systems where a dispersible, highly soluble, low viscosity protein is required. Because of its unique functional characteristics, Pro Fam 891 may be used in various food products as both an effective emulsifier and moisture binder.”

1822. Gower, Elaine Ruth. 1999. Cost comparison of traditional and soy foods planned for a long term care facility cycle menu. MSc thesis, Southern Illinois University at Carbondale. v + 121 p. 28 cm. [49 ref]

• **Summary:** Conclusion: This study indicates that soy protein ingredients planned on a long term care facility (LTCF) menu can be substituted for traditional meat products with no significant difference in cost, but with the addition of significant amounts of protein to the diet. These ingredients include soy protein isolate, soy protein concentrate, and soy flour. As of Nov. 1998, the prices of basic soy protein products from ADM are as follows: Isolate \$1.55/lb. Concentrate \$0.72/lb. Soy flour \$0.40/lb.

Ruth earned her BSc degree at Southern Illinois University at Carbondale in 1997. This research paper was submitted in partial fulfillment of the requirements for the Master of Science degree—in the Food and Nutrition Program, Dep. of Animal Science, Food and Nutrition, in the Graduate School, Southern Illinois University. Address: 1233 Orchard Ave., Apt. I, Springfield, Illinois 62702. Phone: (217) 726-7118.

1823. Jacobi, Dana. 1999. Buono appetito! Soy makes hearty Italian classics healthy. *Vegetarian Times*. April. p. 36, 38-40, 42. No. 260.

• **Summary:** Recipes using eight soyfoods to make one Italian dinner—a veritable soy feast. The recipes are: Herb pesto (with white miso, dairy-free). Soy minestrone (with edamame). Sicilian stuffed squash (with TVP flakes and grated soy Parmesan cheese). Pasta al forno (with fat-free Italian sausage, and white miso). Chocolate almond biscotti (with soy flour). Italian ‘cheese’ pie (with extra-firm tofu and soy margarine). Address: Food writer, New York, NY.

1824. *Ontario Soybean Growers’ Marketing Board Newsletter*. 1999. New president for ADM. April. p. 3.

• **Summary:** Archer Daniels Midland Co. recently elected John McNamara as president. This promotion took place less than two years after John was promoted from ADM’s Canadian operations to assume the position of company vice-president responsible for oilseed crushing operations. Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

1825. Beyers, Jim. 1999. Work with ADM and Westward Industries, Inc. making textured soy protein (Interview). *SoyaScan Notes*. May 3. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In 1969, when Jim graduated from Southern Illinois University, he was hired by ADM to work on extruding soy protein. He worked with Bill Atkinson, who was using an old vintage extruder to make TVP, which was used primarily for pet food. Jim was hired to do research on adding value to the pet food by making it fit for human consumption, and to diversify the product catalog to include meat analogs. They soon were testing beef, ham, and chicken flavors in different sizes, shapes, and colors. Before long they were experimenting with some “wild and crazy things” such as fruit replacements, vegetable replacement, and nut replacements—all with TVP. At the beginning, only Beyers and Atkinson were working on this project. This was before the settlement of the big patent dispute between ADM and Ralston Purina in 1970. That dispute grew out of the fact that Atkinson and Robert Boyer (both of whom once worked together for Henry Ford) both came up with the idea of extrusion at about the same time. Bill Atkinson was extruding 50% protein soy flour and Ralston apparently said they were extruding soy flour. Atkinson fortunately kept the little desktop extruder that he used to make his first trials; it made a little rope of TVP about the size of an ink pen refill [about one-eighth inch in diameter]. “We reenacted those early experiments of his time and time again for the courts—to the point where we had miles of this little bitty TVP rope piled up.” Each company thought that it had invented the extrusion process first. “So they went to war with each other. They spent at least several hundred thousand dollars on attorney’s fees, until they finally resolved it out

of court. Swift and Staley were just standing on the side lines in the last half of the battle waiting for the judge to tell them who to pay the royalty checks to. Finally, the process patent was awarded to Ralston Purina and the product patent to ADM—which is kind of ludicrous. How can you have a process without a product, or a product without a process.” Ralston Purina went out to everyone they could find who was extruding a 50% soy protein product (for pet food or human food) and asked them to buy a license on the process; the license fees were quite high, because the life of the patent was half gone, so they decided to charge twice what they would have ordinarily charged. Ralston Purina made a great deal of money from PMS Foods in Hutchinson, Kansas. Swift paid the fees for a while, then stopped making the product. Cargill was a big manufacturer of a TVP-type product; they have a plant in Cedar Rapids, Iowa. Jim does not know anything about the fees they paid. Ralston Purina itself never made much extruded soy using its patented process. Ralston had two extrusion lines in Memphis, Tennessee, for several years, making mostly human foods—but they were never price competitive and the quality was not very good. ADM could have done the same thing, but they didn’t. Jim does not know why ADM didn’t pursue this.

Today ADM is by far the world’s biggest manufacturer of extruded, textured soy flour. “ADM has an extrusion capacity to generate the entire world’s supply of TVP. I know that for a fact because I put those extruders in place myself.” ADM runs on high volume and low margins. They won’t enter a field unless they can generate enough capacity to dominate. They streamline and automate the process until they are the low-cost producer. This has long been the philosophy of Jim Randall, the retired president. He was the engineer for ADM for many, many years. “The commodity mind-set has always been trainloads, truckloads, and shiploads. When I was at ADM we made one type of bacon bit, packed it in 50-pound boxes with ADM’s labels on it, sold it at 20,000 pounds minimum order. That was it.” Jim’s present company works on smaller volumes and higher margins. “We don’t want to compete with the commodity processors. We have a nice little specialty niche that ADM and Cargill can’t mess with. Generic bacon bits are becoming a commodity, but it is private labeling that keeps some of them in the specialty field. The big processors won’t put in a label room for 70 different private labels.”

Jim worked for ADM in R&D for about ten years. He worked very closely with Bill Atkinson, a very bright man and an excellent inventor, but he also came on like a raging bull—a cantankerous man. “But he and I got along great! I never knew for sure why. I used to enjoy listening to him talking about Henry Ford and his years of work there with soy. At one time Ford thought people were being gouged [paying too much] for eye glasses. So he set up a bank of grinding machines, to crank out glasses for a nickel each.” Ford and ADM both liked to operate on the principle of high

volume, low margin. In his Later years, Atkinson began to suffer from Alzheimer's disease. But until just before he retired, his memory was crystal clear, with 100% total recall. In Jan. 1979 he left ADM and went to work for Westward Industries, where for the next 18 years he made bacon bits. Ken Towers was the original owner of Westward Industries; he and his researchers developed a lot of new technology for flavoring systems in-house. When he went to and helped to start Westward Industries, it would take any order from 50 cases on up, and put the but the customer's label on it if so desired. Initially Westward bought its TVP from ADM, then added its own flavoring system. Later, they bought a license to produce the TVP-type base then added their own unique flavors by their own system.

In Jan. 1979 Westward Industries started making standard textured soy protein products in Kansas at 1819 S. Meridian, Wichita. Westward didn't sell any products under its own brand; it was either sold in bulk to foodservice or private labeled for all the glass-packers in the country like John R. Sexton, Durkee Foods, R.T. French, McCormick, Safeway, CFS-Continental, Ponderosa Steak Houses, Pizza Hut—any company that sold bacon-bits in jars. “We were the largest processor of imitation bacon bits in North America, probably for about ten years.” The company still makes and sells these products. At one point, they got rid of the extruders and made rice crispies for 15 years.

In about 1984 or 1985 Westward introduced the Soft and Chewy concept, with many of the old flavors, but a few new ones—such as Bacums. In late 1997 he bought Westward from its founder, Ken Towers, renamed it to Westwind Industries, and started his own production. He did not buy the corporate charter from Ken; rather he filed his own corporate charter, which required a new name. Westward Industries still exists, and Jim's manufacturing plant is at a new location. The company makes two types of textured soy flour (crisp texture, and Soft and Chewy) and a line of nut replacements (Terra Nuts, which are pressure cooked, then dry roasted, and used to replace pecans and walnuts).

Greg Caton is an interesting guy. He's exuberant, energetic, and very innovative. He needs to stop, settle down for about ten minutes, and think things through just a little bit. Jim thinks Greg will take his business worldwide “when he finally gets his focus on what he's doing. This non-GMO is really a big thing in Europe these days; it'll never make a splash here in the States. Greg believes that's where his new-found wealth will be.” Jim believes that GMO foods will not become widely accepted in the USA during our lifetime. “World-wide it's really catching on, and I think later on it may be somewhat important. What's more important now with soy is if you can process it hexane-free. Even though the residual hexane is in the parts per billion, there are enough folks around here that say ‘A little bit's too much.’ I think that'll get more mileage than whether it's Roundup Ready or not. Anyway, those are foreign markets that Greg is

looking at.” Address: Owner, Westwind Industries, Inc., 3930 W. 29th St. South, Suite 55, Wichita, Kansas 67217. Phone: 316-943-3212.

1826. Archer Daniels Midland Co. 1999. ADM to offer premium to grow non-genetic soy (News release). Decatur, Illinois. 1 p. May 5.

• **Summary:** ADM said Wednesday that it will pay farmers an 18-cent per bushel premium price for soybeans grown with a certain non-genetically engineered variety of seed. This seed, named Synchrony Treated Soybeans (STS) is produced by DuPont Co. and bred to resist Synchrony herbicide, also produced by DuPont. STS soybeans are not genetically engineered. The program took effect on 27 April 1999, according to Martin Andreas, senior vice-president of ADM. Designed to benefit farmers, it is also a way to avoid the recent problems related to genetically-modified crops, especially in Europe and Asia. According to Andreas, DuPont expects to offer contracts to plant STS on 9-10 million acres this year. Total U.S. soybean acreage this year is expected to be about 73 million acres. Address: Decatur, Illinois. Phone: 217-454-5200.

1827. Thompson, Wes. 1999. Brief history of W.G. Thompson & Sons' work with soybeans, and current thoughts (Interview). *SoyaScan Notes*. May 11. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Since this year is the Thompson's 75th anniversary, Wes is interested in learning more about the company's history. They have been in the grain business since 1924. They ran an elevator business, and he thinks that, through it, they got involved with soybeans is about the late 1930s or early 1940s. They probably received soybeans from farmers and shipped them to a crusher. The first soybean crusher in Ontario province that he is aware of was Victory Soya Mills [which began operation in late 1944]. In the 1950s Thompson's got into the seed business in a “brown bagger” way. In 1972 they started exporting and selling food type soybeans into Asia. And in 1975 they started a research group to breed soybeans; that was when they really got involved with soybeans in a big way. Over the years, the soybean exports and breeding have both grown nicely.

In the future, the company plans to focus more on food processing than on commodities—where the competition is fierce and the margins are small.

For the last few years, Thompson has supplied the European market with contracted non-GMO soybeans. So Wes is very sensitive to the changes in European attitudes to GMO that have taken place over the last few years. Thompson sells the soybeans as “GMO-free” and they get a premium for that, but they do not guarantee that these soybeans are GMO-free. Rather, they guarantee their “due diligence.” They contract the production, then march the fields and inspect them.

As for the future of GMO: The first traits benefited the farmer rather than the consumer. Consumers will begin to show more interest and be less critical when new traits benefit them. Another problem in Europe was that industry and government did not take the concerns of consumers seriously. Wes is not afraid of labeling GMO products. “Let it happen. Keeping consumers in the dark is just asking for trouble.”

A few days ago ADM came to farmers in the Blenheim area offering an 18 cent per bushel premium to farmers who grow non-genetically-modified soybeans. Their news release on the subject is dated May 5th. That seemed like a very important change of policy for a company as big as ADM. It seems like they believe that this will become a bigger issue before it becomes a smaller issue in North America. They defined what they considered non-GMO to be STS soybeans—which have herbicide resistance but the trait was developed through conventional breeding. Most of the soybeans ADM ships overseas are in the form of meal and other; a relatively small percentage is shipped as whole soybeans.

Wes’ company is “a slave to two masters.” They started out and continue to be focused on what their Canadian farmer customers want—which tends to be genetically modified. But in order to stay in business, over the last few years they have shifted their focus to food uses and consumers—both in Canada and in Asia. Address: President, W.G. Thompson & Sons, Limited, 122 George St., Box 250, Blenheim, ONT Canada N0P 1A0. Phone: 519-676-5411.

1828. Boismenu, Clyde. 1999. Soy protein isolates: ADM has some excellent new products and PTI is concerned (Interview). *SoyaScan Notes*. May 27. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** ADM got into the isolate business by buying two existing product lines. In the mid-1980s they bought the Promine line from Central Soya; these products were made at an aging plant in Chicago, Illinois. ADM replaced the Promine brand with Ardex, and cleaned up the production process and product consistency, but never did much to improve the somewhat beany flavor or to market the product. In the early 1990s ADM purchased the ProFam isolate line from Grain Processing Corp., which was a company that focused on corn processing, and especially on making maltodextrins. ADM shut down both of those early plants and built its own plant in Decatur.

During the 1980s most of the isolates made in the USA were sold to Eastern Europe, where they were added to sausages, but often did not appear on product labels. The second largest use was in infant formulas.

ADM’s new line of isolates, introduced about 1 year ago, is sold under the ProFam brand. ADM has built two big plants in Decatur, Illinois, and a third huge plant in Brussels, Belgium, will come on line later this year. The product

named ProFam 891 is completely new—unlike anything that PTI has. It is made from alcohol-washed concentrates. It has good solubility, great viscosity (very much like casein), almost no beany flavor, but a beige (not pure white) color. Of course, it will not melt like the casein in cheese does. Both ADM and PTI “tweak” their isolates—they set aside isoflavones at one step of the process then add them back later—to raise the isoflavone level. In this way they can say that they are not actually adding isoflavones, so they do not have to list isoflavones as an ingredient on the label. ADM guarantees 2 mg of isoflavones per gram of product, whereas PTI guarantees only 2 mg of isoflavones per gram of protein. Address: Basic Foods Co., P.O. Box 240070, Los Angeles, California 90024. Phone: 310-473-0719.

1829. Boismenu, Clyde. 1999. Food uses of TVP or textured soy flour (Interview). *SoyaScan Notes*. May 27. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Demand for food uses of TVP dropped off years ago. Today the main use is in commercial burritos, in part because the standard of identity of a burrito requires very little meat. High-end or upscale burritos are made with 100% meat—and plenty of it in big chunks. But the less expensive burritos generally contain TVP mixed with ground beef. These products are often sold frozen in supermarkets, or they may go into school lunch programs or other foodservice meals. Address: Basic Foods Co., P.O. Box 240070, Los Angeles, California 90024. Phone: 310-473-0719.

1830. Boismenu, Clyde. 1999. ADM recently purchased Soya Mainz GmbH, which owned at least part of Solbar Hatzor Ltd. (formerly Hayes Ashdod) in Israel (Interview). *SoyaScan Notes*. May 27. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In 1998, ADM purchased Soya Mainz GmbH & Co. Kommanditgesellschaft, which is located in Mainz, Germany (see 1998 ADM Annual Report). Soya Mainz crushes soybeans (processing capacity 2,500 tonnes/day) and makes refined soy oil, edible soy lecithin, and industrial soybean fatty acids. In 1991 Soya Mainz purchased a 25% equity in Solbar Hatzor. Solbar Hatzor Ltd. (formerly Hayes Ashdod) in Ashdod, Israel, is also a soybean crusher with a processing capacity of 700 tonnes/day. Note: Solbar has a capacity to make about 10,000 tonnes/year of soy protein concentrates. They also make textured soy flour and soy fiber. Address: Basic Foods Co., P.O. Box 240070, Los Angeles, California 90024. Phone: 310-473-0719.

1831. Frahm, Gail. 1999. What is the Soy Protein Partners Group? (Interview). *SoyaScan Notes*. June 11. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** This group was formed about 5 years ago to fund 1-800-Talksoy, the toll free number. It consists of about ten of the state soybean boards, members of the Soy Protein

Council (ADM, Cargill, etc.), and the Soyfoods Association of North America.

Note: Soy Protein Partners also paid most of the costs of publishing the Soyfoods Guide in 1999, 2000, and 2001, and in keeping the Soyfoods Directory (at Soyfoods.com on the Web) up to date. 117,000 copies of the Guide were printed in April 2001. The Guide and Directory are both under the direction of Stevens & Associates (Roger & Jane Ade Stevens) in Indianapolis, Indiana. Address: Michigan Soybean Board.

1832. Messina, Mark J. 1999. Soy isoflavones in new commercial products (Interview). *SoyaScan Notes*. June 22. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Indena (pronounced in-DEE-nuh) is now making isoflavones in Italy; Johnson and Johnson is probably using these Italian-made isoflavones in a new supplement product.

Whitehall-Robbins, a division of American Home Products, recently introduced a new isoflavone product as part of their Centrum line of vitamins. It will be calcium plus soy plus vitamin D. Mark visited this company recently and they had collected some 15 products that contained isoflavones and were aimed at women experiencing menopausal symptoms. Whitehall-Robbins buys its isoflavones from ADM.

What is the size of the isoflavone market? Mark believes that the answer depends largely on how the science pans out. If scientific data can show a significant effect of isoflavones on reducing menopausal symptoms or reducing the risk of prostate cancer (where the data look better and better), the potential market is huge. But if it turns out that Lon White is correct, or that isoflavones are shown to cause breast cell proliferation, then the market could be zero. Address: PhD, 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

1833. ADM. 1999. Des Moines, Iowa, USA: i am growing new ways to fight disease (Ad). *Soybean Digest*. June. Back cover.

• **Summary:** The top three-fourths of this full-page color ad shows a farmer, wearing a blue denim coat and a dark blue hat, and holding blue work gloves, with a blue sky and bluish corn plants in the background. The text on the bottom reads: "What the world needs is a growing interest in the health of our growing population. So, after years of working with the American farmer to help feed the world, ADM has developed new ways to make it a more healthy place, too. Like turning soybeans into natural vitamin E and isoflavones. And future plans that include using corn to make natural vitamin C.

"New ideas. New choices. New weapons in the fight against disease. That's what the world needs now. ADM—Supermarket to the world. www.admworld.com."

1834. *ASA Today* (St. Louis, Missouri). 1999. Non-GMO niche markets may offer premium opportunities. 5(8):4. June.

• **Summary:** Since 1997, Brazilian suppliers have received a premium of up to 50% for non-GMO soybeans. Countries importing non-GMO soybeans include Norway, Korea, and Japan. Last year ADM and other processors paid fairly substantial premiums for non-GMO beans. Farmers who want these premiums and plant both GMO and non-GMO beans must clean their combines and bins.

1835. *Bluebook Update* (Bar Harbor, Maine). 1999. ADM announces new president. 6(2):3. April/June.

• **Summary:** He is John D. McNamara, who joined ADM in 1985.

1836. Messina, Virginia; Schumann, Kate. 1999. The convenient vegetarian: quick-and-easy meatless cooking. New York, NY: Macmillan USA. viii + 184 p. Illust. Index. 24 cm.

• **Summary:** This is a vegan cookbook. The index contains 9 entries for tofu, 9 for textured vegetable protein (TVP), 3 for soy food products (soy foods) 3 for soybeans, 2 for tempeh, 1 each for miso, soy cheese, soymilk, soynuts, and soy yogurt. Address: 1. MPH, RD, coauthor of *The Vegetarian Way*.

1837. Kilman, Scott. 1999. ADM ex-officials get 2 years in jail in sign of tougher antitrust penalties. *Wall Street Journal*. July 12. p. A4.

• **Summary:** The two sentenced by a federal jury were Michael D. Andreas, age 50 (and son of ADM CEO Dwayne Andreas), and Terrance S. Wilson, age 62. Both were also fined \$350,000 each. Traditionally only half the people convicted of price fixing in the U.S. are sent to jail, and the average time for this crime in the 1990s was just 10 months. Mark Whitacre, convicted of embezzling millions of dollars from ADM, is now serving time at a federal prison in Edgewater, South Carolina.

Note 1. Michael Andreas' term was later extended by a year after the government appealed. Before his conviction, Andreas was considered the heir apparent to his father, ADM chairman, Dwayne Andreas (*Chicago Tribune*. 2001. Dec. 20. "Andreas released to halfway house").

Note 2. As July 2020 it is not clear how long Michael Andreas was in a federal prison [minimum-security in Duluth, Minnesota] and how long he was confined to a halfway house. On 8 July 2008 a high-level ADM spokesperson said that the company definitely had no plans to rehire "Michael Andreas, who had just been released from federal prison early Wednesday after serving time on price-fixing charges." Address: Staff Reporter.

1838. *ADM Nutrition & Health Update* (Decatur, Illinois). 1999. Soy protein, soybean isoflavones and coronary heart

disease. 1(2):1, 3-4. Winter. [3 ref]

• **Summary:** Soy protein lowers blood cholesterol—a fact now accepted by the scientific community. This effect is unrelated to the low saturated fat content of soyfoods.

1839. **Product Name:** NutriSoy 949, NutriSoy 942 (Soy Protein Isolates). Renamed Pro Fam by April 2000.

**Manufacturer's Name:** ADM Protein Specialties.

**Manufacturer's Address:** Decatur, Illinois. Phone: 217-424-7453.

**Date of Introduction:** 1999 July.

**Ingredients:** Defatted soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** *ADM Nutrition & Health Update* (Decatur, Illinois). 1999. Summer. p. 2. “NutriSoy proteins for the healthy foods market.” These two new soy isolates deliver levels of dispersing and solubility never before seen. NutriSoy 940 has a very bland flavor, unsurpassed dispersibility, and “excellent stability when put into solution. It delivers a minimum of 2 mg/gm of isoflavones. NutriSoy 942 is the calcium-fortified version...”

Talk with Phil Fass, head of NutriSoy branding program and marketing at ADM. 2000. April 28. ADM introduced two soy protein isolates under the NutriSoy name, but then they were withdrawn. They are now under the Pro Fam name.

1840. National Oilseed Processors Association. 1999. Yearbook and trading rules 1999-2000. Washington, DC. ii + 126 + 11 p. 22 cm.

• **Summary:** On the cover (but not the title page) is written: Effective August 1, 1999. Contents: Constitution and by-laws. Officers and directors. Executive office. Members. Standing committees. Trading rules on soybean meal. Appendix to trading rules on soybean meal: Official methods of analysis (moisture, protein, crude fiber, oil {only method numbers listed}), sampling of soybean meal {at origin} (automatic mechanical sampler, pneumatic probe sampler, probe sampler), sampling of soybean meal (at barge loading transfer facilities), official weighmaster application, semi-annual scale report, certification of installation of automatic sampler & mechanical divider (at origin), semi-annual certification of automatic sampler & mechanical divider (at origin), voluntary checklist for semi-annual certification of sampler & divider (at origin), certification of installation of automatic sampler & mechanical divider (at barge loading transfer facility), semi-annual certification of automatic sampler & mechanical divider (at barge loading transfer facility), voluntary checklist for semi-annual certification of sampler & divider (at barge loading transfer facility), official referee laboratories (meal), official NOPA soybean meal sample bag.

Soybean meal export trading rules: Minimum blending procedures for export meal blended at ports, sampling of soybean meal (at vessel loading facilities), weighing of

soybean meal (at vessel loading facilities), certification of installation of automatic sampler & mechanical divider (at vessel loading facility), semi-annual certification of automatic sampler & mechanical divider (at vessel loading facility), voluntary checklist for semi-annual certification of sampler & divider (at vessel loading facility), semi-annual certification of scales at vessel loading facilities. Trading rules on soybean oil. Sales contract. Definitions of grade and quality of export oils. Soybean lecithin specifications. Appendix to trading rules on soybean oil: Inspection, methods of analysis: (AOCS official methods): Soybean oil, crude; soybean oil, refined; soybean oil, refined and bleached; soybean oil for technical uses (iodine value, unsaponifiable, break test), refining byproduct lipid, acidulated refining byproduct lipid and tank bottoms. Official weighmaster application, semi-annual scale and flowmeter report, official referee chemists (oil). Soybean oil export trading rules. Uniform soybean oil export contract. Foreign trade definitions (for information purposes only) Appendix 1.

The section on officers, executive staff, board of directors, and executive office (Washington, DC), (p. 8-9) gives the name, company affiliation, and phone number of each person. Members (p. 10-19) (listed alphabetically by company; within each company, first the name of the official Association representative {who is on the Board and votes}, followed by the other personal members listed alphabetically by surname). Standing committees: For each committee, the function of the committee, the names of all members (with the chairman designated), with the company and company address of each are given. Address: 1255 Twenty-Third St., N.W., Washington, DC 20037. Phone: (202) 452-8040. Fax (202) 835-04000. E-mail nopa@nopa.org. Website: www.nopa.org.

1841. South Dakota Soybean Research & Promotion Council. 1999. Favorites from the heartland. Sioux Falls, South Dakota. 81 p. Illust. Recipe index. 22 cm. [1 ref]

• **Summary:** A full-color, glossy and very original spiral-bound cookbook—loaded with full-page color photos of dishes prepared from recipes. Contents: Why eat soy? Practical ways to incorporate soy into your diet. How to cook soybeans. Breads (incl. prize-winning Carrot tofu muffins, and Tofu herb bread). Soy flour tips. Main dishes. Green soybean (Sweet Bean [green vegetable soybean]) tips. Salads. Desserts (incl. prize-winning Glistening cheesecake, and Pineapple cake). Beverages and snacks (incl. prize-winning Tofu shake). Soy products: Dried soybeans, tofu, soy milk, soy flour, fresh green soybeans, textured vegetable protein (TVP). Soyfoods substitutions (from meat and animal products). For more information: 1-800-talk-soy, or www.soyfoods.com.

Talk with Betty Hansen at South Dakota Soybean Board. 2000. May 15. This cookbook (which is undated) was first published in the summer of 1999. Many of the recipes were

adapted from local favorites, and all these were tested in the office. Some also came from the winners of a recipe contest sponsored by the South Dakota Soybean Board. Address: Sioux Falls, South Dakota. Phone: 605-330-9942.

1842. *Hamburger Abendblatt (Hamburg, Germany)*. 1999. 25 Millionen Mark fuer weiteres Kraftwerk und eine "Bio-Diesel"-Anlage am Standort Neuhof Oelmuehle Hamburg AG investiert [Oelmuehle Hamburg AG has invested 25 million Marks for more power plant and a biodiesel plant in Neuhof]. Sept. 1. 1 p. [Ger]

• **Summary:** The biodiesel will be made mostly from rapeseed oil methyl esters (RME). Dr. Klaus Thiemann is the lead officer at Oelmuehle Hamburg and Hans Thiem is the project director.

1843. *Investor's Business Daily*. 1999. Hard times. 16(65):A1. July 12.

• **Summary:** Photos show Michael Andreas, age 49, son of ADM chairman emeritus Dwayne Andreas, Terrance Wilson, age 60, and Mark Whitacre, age 41—all of ADM. The first two men were sentenced to two years in prison and were fined \$350,000 each for conspiring to fix the price of lysine, an animal feed additive. Biochemist Whitacre was previously sentenced to 2½ years in jail.

1844. ADM. 1999. The next century belongs to soy (Ad). *Soya Bluebook Plus 2000*. Back cover.

• **Summary:** In the center of this imaginative full-page color ad is a huge light yellow soybean against a blue background, with the ad title written across the upper one-third of it. Below it: "The research is in: New studies indicate that 25 grams of soy protein per day may lower cholesterol and help prevent heart disease. Two-thirds of American consumers are aware of soy's health benefits, and are ready to increase their soy intake.

"No wonder the next century belongs to soy.

"ADM has been in the forefront of soy research for decades. We're the only full-lie soy supplier in the industry. And frankly, as the next century unfolds, we can't wait to see where this little bean is going to take us next."

In the lower right corner is ADM's ellipse-shaped logo: "Supermarket to the world." No address or phone number are given, only the website. Address: [www.admworld.com](http://www.admworld.com).

1845. Froding, Joy. 1999. Key ingredient of success: Isoflavones are opening doors in the nutraceutical and food industries. *Bluebook Update (Bar Harbor, Maine)* 6(3):4-5. July/Sept.

• **Summary:** Schouten USA Inc. in Minneapolis, Minnesota, (a division of the Royal Schouten Group in the Netherlands) and ADM are major suppliers of soy isoflavones. Laurent Leduc, International Marketing Manager for Schouten USA, says his company was the first that saw an emerging

market for isoflavones because of their health benefits. In the early 1990s a Schouten researcher perfected a unique method for capturing soy isoflavones to produce a 100% natural concentrate. Introduced in 1995 to the vitamin and supplement industry, SoyLife was the first product of its type. Schouten sells two different soy isoflavone products, each with a different concentration: SoyLife 25 (containing 3% isoflavones) and the more potent SoyLife 150 (containing 15% isoflavones). The latter product is presently used in about 300 supplement applications in Europe, North America, Asia, and Australia.

In Sept. 1998 ADM introduced NovaSoy isoflavone concentrate. It is made by washing soybean flakes with alcohol to give soy molasses and soy protein concentrate. The isoflavones are then extracted from the soy molasses. NovaSoy contains 40% isoflavones with the same proportions of genistein, daidzein, and glycitein as found in soybeans or soyfoods like tofu. A photo shows a bottle of NovaSoy soy isoflavones (30 tablets).

1846. Soyatech, Inc. 1999. Advertiser index. *Soya Bluebook Plus 2000*. p. 431.

• **Summary:** Ag Processing Inc. Allocco S.A. American Health & Nutrition Inc. AMG Inc. Anderson International Corp. ADM Lecithin. Archer Daniels Midland Co. B.N.W. Industries. Baker Process. BAR N.A., Inc. Bean Machines, Inc. Behlen Mfg. Co., Biostar. Borton, Inc. Breitenbach GmbH, Leonhard. Brown Company, Charles. Buhler Inc. Campro International Inc. Cargill, Inc. Center for Crops Utilization Research. Ceval Alimentos S.A. Clarkson Grain Co., Inc. Cleary Products, Inc., W.A. Clofine Dairy & Food Products, Inc. Codema, Incorporated. Core Team, The. Damman-Croes N.V. De Smet SA/NV, Extraction. Divine Engineering, Inc. Edelsoja GmbH. Elementar Americas Inc. Europa Crown Ltd./Crown Iron Works Company. First Line Seeds. Frank, Fa. L.I. French Oil Mill Machinery Company, The. Fundiciones Balaguer, S.A. Genetic ID. Grain Systems. GTS Energy Inc. Guelph Food Technology Centre. H&H Company, Inc. HI Roller Enclosed Belt Conveyors. Identity Seed & Grain Company. Indiana Crop Improvement Association. INHSA. Innomach Inc. Insta-Pro International. International Soybean Program (INTSOY). InterSystems, Inc. Iowa Soy Specialties, LLC. Jeneil Biotech, Inc. Kice Industries, Inc. Klein Commodities. Krupp Extraktionstechnik GmbH. Laidig Industrial Systems. Louisville Drying Machinery. Lucas Meyer GmbH & Co. Mason Manufacturing. Metal Products International, Inc. Midwestern Soybeans International, Inc. Midwestern Soybeans International, Inc. Millbank Technology (N.Z.) Ltd. Miracle Exclusives, Inc. Monsanto Company. Montola Growers Inc. Moore & Associates, Inc., N. Hunt. Natural Products Inc. Norseman Inc. Northland Seed Corp./Northland Organic Foods. Nosawa & Company, Ltd. Oil Mill Gazetteer. Oil-Dri Corporation of America.

Ontario Soybean Growers. Pacific International Distributors (PID). Prater Industries, Inc. ProSoya, Inc. R&D Equipment Sales Company. Riceland Foods, Inc. Riley Equipment, Inc. Roskamp Champion. S. Howes Company, Inc. Sato & Company, Ltd. Schouten USA Inc. Separators, Inc. SK Food International. Soyatech, Inc. Specialty Proteins. Strayer & Associates, Dennis. SunRich Inc. Sweet Manufacturing Company. Tecno Moageira Ltda. Tetra Pak Inc. Texas A&M University. Thompson & Sons Ltd., W.G. Tobe Products. Tradin Organic Agriculture B.V. Tramco Inc. Turner Chilled Rolls Ltd. U.S. Soy. United Soybean Board. VIGAN Engineering S.A. Walzen Irlle GmbH. Westfalia Separator, Inc. Westway Terminal Co., Inc. Woodson-Tenent Laboratories, Inc. Younglove Construction Company. Address: 7 Pleasant St., P.O. Box 84, Bar Harbor, Maine 04609. Web: www.soyatech.com. Phone: 207-288-4969.

1847. Soyatech, Inc. 1999. *Soya & Oilseed Bluebook 2000*: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 432 p. Sept. Comprehensive index. Internet address index. Brand name index. Advertiser index. 28 cm.

• **Summary:** On the cover is a color photo of rare and beautiful soybeans of variegated colors, including various shades of purple, red, blue, etc. The background is solid soybeans made to appear blue. The inside front cover and first page contain full page color ads from Lucas Meyer, "The Lecithin People." On the back cover is color ad from ADM titled "The next century belongs to soy," written over a huge yellow soybean with a prominent hilum.

To celebrate the year 2000, a special supplement has been included near the front of the book, titled "2000 and beyond: The future of soy. Soyatech brings together a panel of key individuals in the soybean industry to talk about the future" (p. 9-16). Its contents: Introduction, by Peter Golbitz. The introduction of biotechnology. The blossoming demand for identity preserved soybeans. Soyfoods and health benefits. Organic farming has become a growing \$4.2 billion dollar industry. Soybean products improve as technology continues to evolve. Alternative technologies for a developing world industry: The world produces 150 million metric tons of soybeans, of which less than 10 percent is used directly for human food. Growth of world markets shaped by American soybean farmers investments (American Soybean Association and United Soybean Board). Soybeans find fertile ground in South America. Soyfoods past, present, and future (incl. Vitasoy and Yvonne Lo). Beyond 2000.

Note that Soyatech has moved to a new address. Address: 7 Pleasant St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

1848. Archer Daniels Midland Co. 1999. Annual report: Globalization for the 21st century. P.O. Box 1470, Decatur,

IL 62525. 42 p. Oct.

• **Summary:** Net sales and other operating income for 1999 (year ended June 30) were \$14,283 million, down 11.4% from 1998. Net earnings for 1999 were \$265.9 million, down 34.2% from 1998, and far below the recent peak of \$796 million in 1995. Shareholders' equity (net worth) is \$6,240 million, down 4.1% from 1998. Net earnings per common share: \$0.43, down 36.9% from 1998. Number of shareholders: 31,764.

On p. 16 are photos and brief discussions of Harvest Burgers (now marketed by Worthington Foods), NutriSoy (a new generation of soy protein), and NovaSoy (isoflavones). Page 17 discusses ADM's partnership with DuPont using the latter's STS soybeans. This year the annual report came in a slip cover with another report titled "Archer Daniels Midland: An overview."

Also accompanying the annual report is a "Notice of Annual Meeting." G. Allen Andreas, age 56, Chairman of the Board and CEO, had a 1999 salary of \$2,437,698, up from \$803,282 in 1997. John D. McNamara, President, had a 1999 salary of \$625,243, up from \$147,672 in 1997. Address: Decatur, Illinois.

1849. Archer Daniels Midland Co. 1999. Archer Daniels Midland: An overview. P.O. Box 1470, Decatur, IL 62525. 20 p. Oct. 28 cm.

• **Summary:** This report came in a slip cover with ADM's disappointing annual report. Contents: The world food economy. The big picture. Oilseed processing. Corn Processing. ADM Milling. Grain Merchandising. BioProducts. Nutraceuticals. Food additives. ADM Cocoa. Other Processing Operations. Transportation. ADM and the Environment. Aquaculture and Hydroponics.

The section on "Aquaculture and Hydroponics" states: "What began as a small research project to see if fish could be raised in ADM's Decatur greenhouse has become one of the Midwest's premier aquaculture facilities. Aquaculture helps reduce the depletion of the fish supply from the world's oceans, and is a highly energy-efficient means of producing food.

"The primary stock for our aquaculture project is tilapia, a fish from the perch family known for its rapid growth and tasty meat. Tilapia reproduce copiously and grow to maturity quickly, which means they have the potential to play a role in alleviating world hunger. ADM lysine and soybean meal comprise the bulk of the tilapia's diet.

"The nutrient-rich waters of ADM's aquaculture facility also serve the hydroponics facility at our Decatur plant. ADM uses this water along with waste heat from our corn processing operation to grow vegetables, herbs, and other produce. This full-production hydrofarm produces 150,000 heads of lettuce and 20,000 cucumbers a month, allowing ADM to provide consumers with fresh, nutritious, attractive products all year round." Address: Decatur, Illinois.



1850. *Ontario Soybean Growers' Marketing Board Newsletter*. 1999. The GMO issue—Tough choices for producers. Oct. p. 5.

• **Summary:** “Last year approximately 5% of the total soybean acreage in Canada were GMO varieties, while this year that number was between 15-20% of total soybean acreage. Next year will be very interesting to see producers' response to the consumer backlash of GMO's.”

“When Archer Daniels Midland (ADM) urged, even warned their U.S. suppliers last month to begin segregating GMO soybeans, corn and other grains from conventional crops, it sent shudders through the U.S. farming community.”

“This is not an issue of right or wrong, it is an issue of consumer demands, and the consumer is demanding non-GMO products.” Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

1851. *Delta Farm Press (Clarksdale, Mississippi)*. 1999. Biotech crop segregation complicates 2000: if other buyers follow Archer Daniels Midland's move, will farmers change use of GMO varieties. Nov. 17.

• **Summary:** On Aug. 31 ADM announced that it plans to require that genetically modified crops, such as Roundup Ready soybeans and Bt corn, be segregated from conventional varieties in trade channels.

1852. *Nutrition Business Journal (San Diego, California)*. 1999. Sales of soy protein isolate set to grow. 4(10/11):21-22. Oct/Nov.

• **Summary:** The market for soy protein isolate is dominated by two manufacturers: Protein Technologies International Inc. (PTI, St. Louis, Missouri, a business of DuPont) and Archer Daniels Midland. PTI claims to have sales of \$500 million in 1999 and to have captured about 75% of the soy protein isolates market. By extrapolation, this implies a U.S. market of \$700 million/year.

About 40% of PTI's isolate sales are to meat and fish processors, 16% to nutritional and sports beverages, 10% to infant formulas, 9% to the paper industry, 5% to young animal feed (milk replacers), and 20% to “developing opportunities.”

Other manufacturers of soy protein isolates are Santista of Brazil, and Fuji Oil of Japan.

A new PTI product is Supro XG, an isolate enriched with genistein. Top customers include Ross Laboratories (Ensure), Nestle, SlimFast, and Weider.

The second half of the article discusses ADM's efforts to educate mainstream consumers—in part is using the umbrella brand, Nutrisoy. This tradename will start appearing on supermarket shelves during the first quarter of 2000. Del Cahill, North American manager for ADM's specialty proteins, sees a new trend. The mainstream food industry, recognizing that the U.S. has an aging population, believes

that the easiest way to prevent long-term chronic disease is through diet. These companies are now trying to develop and market better food choices.

1853. *Nutrition Business Journal (San Diego, California)*. 1999. Central Soya dominates soy concentrates: Lecithin gets new lease on life. 4(10/11):22-23. Oct/Nov.

• **Summary:** Soy protein concentrates wholesale for about \$0.60/lb compared with \$1.00 for soy protein isolates. The leading maker is Central Soya, followed by ADM. Solbar of Israel [owned by Soya Mainz which is now owned by ADM] is another major maker. Industry-wide, the market for concentrates is growing at about 15% a year. Concentrates go into products like veggie burgers. There are more than 40 different types of soy protein concentrates; one of the newest, which retains its natural isoflavone levels, contains more isoflavones than any isolate on the market.

The role of soy protein concentrates has changed over the years. From the 1940s to the 1970s they were an inexpensive substitute for meat. The earliest soyburgers tasted pretty bad. In the 1980s they served as a functional ingredient in foods. In the early 1990s they were an important ingredient in low-fat/no-fat food products and in energy bars. Now they are going mainstream. Earlier this year Central Soya expanded its concentrate manufacturing facility in Remington, Indiana; in large part they were anticipating the FDA health claim.

Central Soya has total annual sales of \$1.5 billion from soy oil, soybean meal, soy concentrates, and lecithin. The company is also a worldwide leader in lecithin. A major competitor is Lucas Meyer (Decatur, Illinois), now owned by SKW Trostberg. The price of nutritional lecithin ranges from \$1-\$1.25 per pound wholesale. Last year the federal government's health and nutrition board (which sets the RDAs) recognized (contained in lecithin) as an essential human nutrient, assigning it daily reference intake status—one step down from RDA. This was a major development, and contributed to a resurgence in sales.

1854. *Soybean Digest*. 1999. Soyfoods are gaining favor. Nov. p. 26.

• **Summary:** The Iowa Soybean Promotion Board sponsored a checkoff-funded survey in 1998 which showed that 67% of consumers believe soyfood products are healthy, up from 59% in 1997.

Another study by HealthFocus, Inc., Des Moines, Iowa, found that 16% of shoppers used soyfoods in 1998, up from 13% in 1996.

Among the factors driving these increases in demand: (1) The number of Asian-Americans has increased dramatically. (2) More young people are vegetarians. (3) Some 97% of colleges and universities now offer meatless [vegetarian] entrees on their menus, according to a survey by Archer Daniels Midland Co.

1855. Stewart, Chuck. 1999. Update on work toward restoration of Henry Ford's chemical plant and soybean laboratory—and new ideas (Interview). *SoyaScan Notes*. Dec. 1. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The Iowa Soybean Association (ISA) is still interested in this renovation project but little progress has been made during the past year. On 21 Jan. 2000 representatives of ISA have an appointment to meet with Steven Hamp, president of the Henry Ford Museum, and their fund-raising department, to talk about the major players and prospective donors. About \$2 million is needed to complete the project as it is now envisioned—concept study titled “Feasibility Study for a Soybean Research Laboratory Experience at Henry Ford Museum (HFM) in Greenfield Village,” by Christian Overland (director of public and school programs, HFM), dated 8 May 1998 (30-40 pages, incl. drawings). The Iowa and Michigan soybean associations put up the funds and HFM provided the staff to develop the feasibility study. It discusses: Objective, market feasibility, structural feasibility, program feasibility, and budget. ISA has committed to some funding, but the amount has not been determined. ADM showed no interest. One question is alternative projects that are less expensive. Chuck thinks some type of project will eventually happen; the questions are when and on what scale.

The Henry Ford people are not very interested in having any food served in the Soybean Lab; it would be more like going into a museum than going into a restaurant. They already have several other restaurants and bookstores in Greenfield Village; they might be willing to add a soyfoods menu to an existing restaurant. Serving food causes a lot of complications and hassle. It's too much trouble. The Henry Ford people, at a minimum, want to do something with the Soybean Lab—at least fix up the building, which is now unused and unattractive. They want to give some recognition that it was a Soybean Lab and that Henry Ford was actively interested in soybeans and soyfoods. If the funding can be found, they might get interested in a fairly large soy project. Address: Chuck Stewart & Associates, 4949 Pleasant St., Suite 204, West Des Moines, Iowa 50266. Phone: 515-226-0358.

1856. *SoyaScan Notes*. 1999. Chronology of soy protein isolates for food use. Dec. 9. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** 1939—The Glidden Company in Chicago, Illinois, becomes the world's first company to manufacture a soy protein isolate for use in food. Named Albusoy and called “soy albumen,” it is an enzyme-modified isolate used as a whipping agent to replace egg whites. 1950—Gunther Products of Galesburg, Illinois, introduces an enzyme-modified soy protein isolate. By 1967 roughly 1 million lb/year of enzyme-modified soy protein isolates were being

made in the USA.

1957—The Glidden Company in Chicago becomes the world's first company to start large-scale production of today's regular (non-enzyme modified) food grade soy protein isolate. Their \$4 million plant at Indianapolis, Indiana, makes Promine brand isolated soy protein.

1957 July—ADM purchases The Drackett Company (Evendale, Ohio), which makes commercial industrial soy protein isolates and is experimenting with edible isolates.

1958—The Glidden isolate plant at Indianapolis is purchased by Central Soya—which now enters the isolate business.

1958-1959—ADM starts to sell small amounts edible isolates to Consolidated Foods in Texas. William Atkinson developed the product, which was quite satisfactory and practical. But the patent was about to expire, so ADM turned its attention elsewhere.

1959 Oct.—Central Soya opens a huge new plant to produce their Promine brand of soy protein isolate. By 1966 Central Soya is making 30 million lb/year of soy protein isolates.

1962 Oct.—Ralston Purina starts making food grade soy protein isolates in Louisville, Kentucky, under the Edi-Pro brand, using technology largely developed by Frank Calvert and Robert Boyer when they worked as researchers for Henry Ford. Anderson Clayton and Carnation started to make soy protein isolates soon thereafter.

1964—The USDA allows the use of soy protein isolates in meat sausages at the 2% level by weight.

1965 Oct. Skippy Peanut Butter with Smoky Crisps introduced. The “Smoky Crisps” are bacon-like bits made by General Mills from spun soy protein fiber.

1965 Dec.—General Mills introduces Bac\*O's, meatless fried bacon bits made from spun soy protein fiber in several test markets.

1966 May—General Mills introduces its Bontrae line of meat analogs based on spun soy protein fibers, including Ground Beef Analog, Diced Ham Analog, and Diced Poultry Analog.

1969 Dec.—Bac\*Os, meatless bacon bits, are now available nationwide.

1970 Dec.—Bontrae spun soy protein fiber starts to be made at General Mills' new plant in Cedar Rapids, Iowa.

1973 March—Hamburger prices reach all-time highs. Hamburger extended with 25% Bontrae (spun soy protein fiber) goes on sales at Red Owl Stores in Minnesota.

1973 summer—Grain Processing Corp. of Muscatine, Iowa, starts making soy protein isolates under the Pro-Fam brand.

1974 Oct.—General Mills introduces meatless Country Cuts, made from spun soy protein fiber, in ham or chicken flavors.

1976—Ralston Purina has become the world's leading manufacturer of edible soy protein isolates. Their flagship

plant is still in Louisville. 1977 May–Dawson Foods buys (for about \$10 million) the Bontrae spinning line, plus exclusive rights to General Mills' soy isolate and patented spinning technology, equipment, and frozen spun products marketed to food processors and institutional customers. Dawson moved the equipment to Minnesota, and broke ground for a new plant in Feb. 1978.

1979 March 31–Dawson Mills' soy protein isolate plant opens 1½ miles east of Dawson, Minnesota, on a 220-acre site.

1980 May–Dawson Mills introduces its Anaprime line of meat analogs based on spun soy protein fibers and technology purchased from General Mills; they are very similar to the Bontrae line.

1980 Aug.–Central Soya sells all of its soy protein isolate operations to Archer Daniels Midland Co. With this purchase, ADM enters the edible isolate business, and Central Soya gets out. ADM names its first four edible isolates Ardex D, Ardex DHV, Ardex F, and Ardex SP-6—simply replacing Central Soya's brand "Promine" by the brand "Ardex."

1982–ADM demonstrated Ardex isolated soy protein sweetened with CornSweet 42 high-fructose corn syrup, at a major Food Expo.

1985–ADM moves its soy isolate plant from Chicago to Decatur, Illinois.

1986–ADM doubles the size of its soy isolate plant in Decatur.

1987-1988–ADM builds a second isolate plant in Decatur.

1988 June 23–ADM buys from Grain Processing Corp. (GPC) their soy protein isolate technology, brand names (Pro-Fam), and customers—but not their equipment. ADM soon begins to produce the Pro-Fam line of isolates in Decatur, Illinois.

1988–The price of imported casein rises above the price of soy isolates—and stays there due to loss of subsidies by foreign governments.

1988–ADM starts to make industrial soy protein isolates in Decatur.

1995–ADM builds a third edible isolate plant in Decatur, adjacent to its other two plants.

1997–ADM sells its industrial isolate business in Decatur to PTI (Protein Technologies International).

1997 June–ADM starts producing soy protein isolates at its plant in Europoort, Netherlands.

1857. Newshour with Jim Lehrer. 1999. The soybean and ADM—Feeding the world. Television broadcast. PBS. Dec. 14.

• **Summary:** The following new ADM ad began to be aired on the Newshour on 14 Dec. 1999: "The soybean—rich in proteins. With it we can feed more people with the same amount of land. Who is committed to this nutritional source

that is helping to feed the world? ADM."

1858. Sanitarium Health Food Company. 1999. Sanitarium (Portfolio). Berkeley Vale, NSW, Australia. 27 inserts. 30 cm.

• **Summary:** This is simply a collection of colorful documents (each in full color) without a portfolio cover, sent with a cover letter by Melissa Harris, Nutritionist. The documents include: (1) Eight nutrition fact sheets. Subjects include wholegrains, fibre, heart health, etc. (2) Seven product sell-sheets, incl. SoyHealthy, So Good Now, Soyaccino, etc. (3) Three small recipe booklets. (4) 10 tips for healthy eating for the family. (5) Now there's an easy way to lower your cholesterol. (6) Six food cards with recipes. (7) Two booklets in "A taste for health" series. (8) List of available publications and videos.

(9) Sanitarium product range—Australia: Cereals (19 products, incl. Soy Tasty, Weet-Bix Hi Bran Soy & Linseed, Up & Go). Beverages (6 products, all based on So Good, incl. yoghurts and ice cream). Meals (19 products, incl. 5 types of Soy Healthy Frozen, 9 types of Soy Healthy Chilled, Soya Beans in Tomato Sauce, Sanitarium Soya Mince/TVP, BBQ Soya Sausages). Spreads (4 products incl. Marmite and many types of peanut butter). Specialty Foods (incl. many nuts & seeds, dried fruits, legumes, pulses & seeds, fruit snacks, and juices). (10) Leaflet (1999; color, front and back) titled "Soya beans, good health & you." Contents: Introduction. What are phytoestrogens. Protecting hearts. Combating cancer. Managing menopause. Promoting healthy bones. Soy foods for children. Putting the good news into practice. Address: 1 Sanitarium Drive, Berkeley Vale, NSW 2261, Australia. Phone: (02) 4348 7777.

1859. *SoyaScan Notes*. 1999. Major soy-related company acquisitions and mergers worldwide 1990-1999 (Overview). Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** 1990 Jan.—Worthington Foods acquires La Loma Foods of Riverside, California (formerly Loma Linda Foods, owned by the Seventh-day Adventist Church).

1990 (early)—Daniel Gevaert purchases the Lima Andiran site at Andiran (near Mezin) in southern France from Lima Foods—but not the Lima trademark. In June 1990 Daniel and his wife, Valerie, established Danival.

1990 Aug. 3—Hong Kong Soya Bean Products Co. Ltd. (makers of Vitasoy soymilk) acquires Nasoya Foods of Leominster, Massachusetts.

1990 Dec. 21—The Haldane Foods Group (a subsidiary of British Arkady Ltd., which is in turn owned by ADM) acquires Unisoymilk 'n' By-Products Ltd. of Cheshire, England.

1991 Jan. 1—The Haldane Foods Group acquires Granose Foods Ltd. of Watford, Hertfordshire, England (formerly owned by the Seventh-day Adventist Church).

1991 Jan. 28—Tetra Pak International acquires Alfa-

Laval AB.

1991 April–Huegli Naehrmittel A.G. acquires Soyastern Naturkost GmbH / Dorstener Tofu Produktions GmbH.

1991 Dec.–Specialty Food Ingredients (SFI) Europe BV acquires Solnuts BV (Netherlands) and Solnuts Inc. (Hudson, Iowa).

1992 Oct.–Central Soya Co. acquires the Protein Division of Aarhus Oliefabrik in Denmark.

1993 June–Vitasoy purchases Azumaya Inc. (America's largest tofu manufacturer, and the low-price leader) in California, for an estimated \$4-\$5 million. Vitasoy is now in the tofu business.

1993 June–21st Century Foods acquires Farm Foods from Barricini Foods.

1993–House Foods of Japan purchases the remaining 50% of House Foods & Yamauchi, Inc. from Mr. Shoan Yamauchi. The new company is named House Foods American Corporation.

1993 July–Nutrition et Santé (part of the Sandoz Group) acquires Société Soy of Saint-Chamond, France. The latter company was renamed Nutrition et Soja, and on 15 Oct. 1994 it moved into a new factory at Revel (near Toulouse), France.

1993 (mid)–B & K Holdings of Switzerland acquires Sojinal of Issenheim, France.

1993?–Kineret (pronounced kuh-NAIR-et) Acquisition Group acquires Farm Foods from 21st Century Foods, then in Nov. 1993 the Hain Food Group acquires Kineret plus some assets of Barricini Foods Inc.

1996 April 22–Alpro (Belgium) purchases Sojinal (France).

1995 April 21–Irene and Len Stuttman buy back control of their company, INARI Ltd. (dba. Sycamore Creek) from J. Charles Follett (former CEO) and Peter L. Pairitz (accountant).

1995 April–Quest International, a unit of Unilever, acquires A.E. Staley's Gunther Products Division.

1997 Feb. 3–Monsanto purchases Asgrow Seed Co. from Seminis Inc., a subsidiary of Empresas La Moderna, S.A. (ELM).

1997 Aug. 24–DuPont signs a letter of intent to acquire Protein Technologies International, a wholly-owned subsidiary of Ralston Purina Co.

1997 Oct. 14–The Hain Food Group acquires Westbrae Natural, Inc., makers of soymilk. Westbrae's new name becomes Hain Food Group–Westbrae. 1997 Dec. 3–DuPont finalizes its purchase of Protein Technologies International (PTI–the world's leading manufacturer of soy protein isolates).

1998 Oct. 16–Worthington Foods purchases the Harvest Burger product line from ADM; by agreement, ADM will continue to make the Harvest Burgers at its Illinois plant.

1998 Dec. 31–DE-VAU-GE acquires Bruno Fischer GmbH, which sells bottled soymilk; both companies are

located in Germany.

1999 Jan. 4–W.G. Thompson & Sons Ltd. of Blenheim, Ontario, Canada, purchases Sycamore Creek Co., a maker of soynuts and soynut butter (located in Mason, Michigan).

1999 Oct. 4–The Kellogg Co. (famous maker of breakfast cereals, Battle Creek, Michigan) buys Worthington Foods Inc., America's leading maker of meat alternatives.

1860. *SoyaScan Notes*. 1999. Hot soy-related topics in 1999 (Overview). Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** 1. Genetic engineering of soybeans. This is now a major issue in Europe, and starting to become one in the USA. Will “non-GMO soybeans” ever become as important to some consumers as “Organically grown soybeans”?

2. What will be the effect of the FDA announcement concerning health claims for soyfoods on small producers of traditional soyfoods? Will they benefit from the claim without changing their formulations? Should they mention “With natural isoflavones” on their labels? Should they state how many grams of isoflavones per serving. 3. Beware the dangers of the media hype of the health benefits of soyfoods. Don't overdo your own advertising claims. The media may later start to debunk all the hype. 4. Beware the potential dangers to the soyfoods industry of concentrated isoflavones, such as the pills made by ADM. These could be marketed (over the Internet, for example) as pills to give small girls big breasts.

5. Take advantage of the publicity that will be created by big dairy companies getting into the soymilk market.

6. Lon White's cardiac research in Hawaii which indicate that tofu consumption is correlated with cognitive disorders.

1861. Wendel, Armin. 1999. 150 Jahre Lecithin [150 years of lecithin]. Cologne, Germany. 9 p. Unpublished typescript. Jan. 16. 28 cm. [5 ref. Ger]

• **Summary:** An excellent history of lecithin in German. This unpublished draft was written several months before his first two articles in *INFORM* magazine about the first 150 years of lecithin history, and about 7 months before his article in *Inform* about lecithin in chocolate.

Armin writes (July 2015): My idea was to bring more attention to phospholipids using the discovery of Lecithin by Goble in 1850 (2000 = 150 years).

All materials were used for the publication “Lecithin the first 150 years,” in *Inform* August 2000.

The corrections in 2001 were made for a presentation in May 2001 at an AOCS meeting (Award lecture).

“I also collected material for reviews: Staley, Central Soya, ADM, Lucas Meyer, American Lecithin, Eichberg, Nattermann, Riceland, Unilever, Stern-Wywiol etc.

“It planned to publish a book but I never had the time– and will not have the time.”

Foreword: The attempt to outline the history of lecithin that is being made here is not to be a synopsis of scientific know-how. There are more than enough scientific explanations. I would like to make the attempt to trace the industrial development.

Lecithin does not represent a product with sales in the billions each year, such as the automobile, the television, the telephone, or beer. For that reason, it is not so easy to obtain the corresponding information. But as is the case with all discoveries and inventions, there are individual people who take the idea and create a product out of it which is then used or consumed by many people.

Let us briefly go into the origins of lecithin. Maurice Gobley, who coined the term “lecithin” in 1850 from the Greek word *lekithos* for egg yolk, only set one milestone. The components of lecithin had of course long been known. According to Gobley, lecithin is a lipid that contains phospholipids (lipids consisting of a glycerol backbone with fatty acids, a phosphoric acid group, and a base) which, in addition to other phospholipids, is a membrane component of the cells of all living things, be they plants, animals, or people. Many researchers both before and after Gobley had already occupied themselves with this group of substances. Hensing discovered phosphorus in the brain for the first time in 1719. Vauquelin confirmed that in 1811. The research on brain matter had been accelerated in a macabre sort of way by the French Revolution, as the following quotation shows: (1)

An unusual period with unusual methods. The countless political victims offered the anatomists welcome material for studies, as long as they themselves still remained alive. What was swept away were scruples and prejudices which had stood in the way of the natural sciences for so long. Lavoisier’s contemporary, the famous physician Thouret, went to the cemeteries. With exhumations at the Holy Innocents’ Cemetery, there were surprising finds. Some skulls demonstrated well-preserved brain matter. Thouret studied them in detail, in search of the phosphorus in the brain that had already been discovered by Hensing, a German doctoral candidate, in 1719. The French doctor analyzed a fat-like substance. Somewhat later, in 1811, he received the confirmation from his colleague Vauquelin, who established organically bound phosphorus in the fatty material of the brain.

That was the beginning of the search for lipids containing phosphorus in the brain and other organs. Researchers such as Vauquelin, Fourcroy, Couërbe, Fémy, Valencienne, Töpler, Strecker, Diakonow, Liebreich and Thudichum, who coined the terms cephalin and phosphatide, dealt intensely with this material. Gobley did not study any human or animal organs; he found this substance in the egg. In so doing, that blazed the trail to isolate that substance or the substance from the egg and to provide a therapeutic application.

With the onset of industrialization and the beginning of the pharmaceutical industry came the technical isolation of egg yolk lecithin (lecithin ex ovo). Not only did companies such as Riedel, Promonta, and Merck-Darmstadt manufacture this lecithin, they also began to produce pharmaceutical compounds. As early as the first years of the twentieth century, many products of this sort were already on the market. But they were expensive and in short supply, since the necessary egg yolk was primarily imported from China.

But then the value of the soybean for food was discovered in Europe. In China and other Asian countries, the soybean had already been an important provider of nutrients for millennia. But the entire harvest was also consumed in those countries. One incentive for the increase in production resulted at the end of the 19th century from the Russo-Japanese War. Soy was suddenly a canned food for the military and was consumed in large quantities. A turning point occurred in 1908 when, as a result of cotton crop failures, the Japanese firm Mitsui & Co. brought a lot of soybeans to the European market for the first time for the purpose of oil extraction. The results of the oil extraction and the use of the oil for food and industry as well as the use of the pressing residues in agriculture were so outstanding that right away, a demand occurred that rose constantly.

Thus in the port cities of Europe, soybeans were soon processed as a source of protein and oil. This occurred in particular in Hamburg and Stettin (today’s Szczecin, Poland), Aarhus in Denmark, Hull in England, and Marseilles in France.

But a technical push was still required. That was provided by Hermann Bollmann. He developed a process for the solvent extraction of the soybean. This process went down in the annals of history as the “Bollmann process”. With this process, though, lecithin accumulated as a by-product. Bollmann hired Bruno Rewald, who then occupied himself with the possibilities for applications for soy lecithin. This lecithin was a mixture of various phospholipids with triglycerides, sugar, and sterols. The amount of phosphatidylcholine was between 12 and 18%. The term “lecithin” for this product that was obtained from soybean extraction—for producing soybean oil—caught on.

Along with Bollmann and the Hansamühle (Hanseatic Mill Works) that was founded by Bollmann, Rewald laid the cornerstone for the general application of lecithin. Bollmann and, in particular, Rewald, as well, were the ones who supplied the lecithin to H.C. Buer, from which Buer developed the product which is still known today as “buerlecithin”. An extensive advertising campaign made buerlecithin well known. Buerlecithin, which was introduced in the 1930s, was nearly synonymous with lecithin for the application of the improvement of performance and memory. Its fame continued into literature and the cinema. For example, in his book *Die Verteidigung der Kindheit* [The

Defense of Childhood] (2), Martin Walser wrote, “What he experienced in West Berlin was not to be avoided by shaving and taking lecithin” and “Just don’t always throw in the towel right away, man! Take lecithin!”

Or Edgar Noske who, in his detective novel *Nacht über Nippes* [Night over Knickknacks] (3) wrote, “A big Hanomag truck with a Buerlecithin inscription blocked the right lane.” In the 1977 American film *The Goodbye Girl*, Elliot (Richard Dreyfuss) constantly needs his lecithin.

Prof. Kaufmann of the University of Münster, on the other hand, used the extraction of lecithin at the *Hansmühle* in his lectures as an example of industrial application. His students also included Hermann Pardun and Hans Eikermann, who later went on to further develop lecithin in different ways: Pardun at Unilever for the food industry and Eikermann at Nattermann for the pharmaceutical industry.

Rewald ran into Joseph Eichberg in the USA. Together, they attempted to convince the nascent soy industry in the USA of the Bollmann process and the application of lecithin. This led to the founding of the American Lecithin Company which, for Percy L. Julian at the Glidden company, became the point of germination for lecithin in the USA.

The actual initiators, Bollmann and Rewald, did not enjoy the privilege of reaping the fruits of their labors. Bollmann was, as one would put it today, an entrepreneur. But was he also a good businessman? The First World War and the accompanying inflation pushed him out of his own company. He did not make any further connections and died in 1935 as he was applying for a patent for his last invention, a seaplane. In his diary, Bollmann wrote in March 1934:

“It is not the big corporations, those mammoth constructions of industry, but rather quiet brain work through which all more or less revolutionary innovations or inventions will create patents. These productively creating spirits are to be divided into two groups: (1) Those that are in the service of corporations; (2) Those in independent professions who get far too little attention, those actual creators of progress. The best inventions go to the service of the big corporations which, on the basis of the patents that have been acquired for little money, demand high prices and ensure for themselves enormous profits, while the creator himself for the most part received meager wages and often has a bleak old age.” Continued. Address: Managing Director, Nattermann Phospholipid GmbH, Cologne, Germany.

1862. Wendel, Armin. 1999. *Die Sojabohne: von der Sojabohne zum Sojalecithin* [The soybean: from the soybean to soy lecithin (Continued–Document part II)]. Hamburg, Germany. 15 p. Unpublished typescript. [28 ref. Ger]

• **Summary:** (Continued): The American Lecithin Company was founded in 1929 in the USA for the marketing of the “Bollmann Process”. It held the patents and granted licenses. ADM (Archer Daniels Midland) and the Glidden Company

were the first companies to build plants on the basis of the Bollmann process.

[Note: ADM and Glidden each sent a team of top-level engineers to Europe to decide what type of continuous solvent plant to buy. They both decided to buy Hildebrandt extractors]. ADM started up its first continuous plant in Chicago, Illinois in 1934 with a capacity of 150 metric tons per day. In 1935, Glidden built an identical plant, and in 1937, Central Soya built an even bigger one in Decatur, Indiana (275 metric tons per day). With the introduction of the soybean trade (the soybean futures market as a new commodity) at the Chicago exchange (the Chicago Board of Trade), the soybean was finally established in the USA (24), (25), (26). The development was more or less complete. The process for extraction from soybeans was established, and soy lecithin became a standard product (27). Today, the soybean is the most inexpensive and productive source of protein in the world. Cultivation takes place primarily in the USA, Brazil, Argentina, and China (those countries represent 91% of the world market) (28), (29). In 1999, 159 million metric tons of soybeans were produced worldwide, of which approximately 50% were in the USA, and approximately 190,000 metric tons of soy lecithin were produced.

Footnotes: (1) Freitag 1947. Hymowitz 1970, 1981, 1983, 1986, 1988, 1990. Ho, P.T. 1965. Piper & Morse 1923. Caldwell 1973. Wilcox 1987. Wolf 1997.

(2) *Glycine max* Merrill (the soybean): The average composition on a dry matter basis is 38% protein, 26% carbohydrates and sugar, 17% triglycerides, 12% moisture [sic], 17% minerals, and 2% phosphatides.

(3) A brief biography of Engelbert Kaempfer. *History of Japan and Siam*. 2 vols. 1728. New edition 1906. Am Hofe des persischen Grosskönigs, 1684-1685, by Engelbert Kaempfer. New edition edited by Walther Hinz, 1940, 1977. Meier, K. 1937. Engelbert Kaempfer, Lemgo. Kapitza, Peter. 2001. Engelbert Kaempfer und die europäische Aufklärung. LudicumVerlag. Munich. (4) A brief biography of Carl von Linné

(5) Hymowitz, T. and J.R. Harlan. 1983. “Introduction of soybean to North America by Samuel Bowen in 1765.” *Economic Botany* 37:371-379.

(6) Bowen, Samuel. 1767. “New invented method of preparing and making sago, vermicelli and soy from plants growing in America, to be equal in goodness to those made in the East Indies.” British Patent 878. June 6.

(7) Brief biography of Matthew Calbraith Perry. Perry, M.C. 1856. “Narrative of the expedition of an American squadron to the Chine seas and Japan.” Vol. 3. F.L. Hawks, ed. House of Representatives Document 97, 3, 2 Session. Washington, DC.

(8) Graph of Development of soybean production in Manchuria (1906-1928). Production increased from 60,000 tonnes (metric tons) in 1906 to 6,000,000 tonnes in 1926. See: Schneider, Adolf. 1929. *Die Sojabohne*

und ihr wirtschaftlicher Wert in Asien und Europa. In: Hansa-Muehle. 1929. Soja: Ein Beitrag zur Kenntnis des Wertes der Sojabohne und ihrer Produkte fuer die deutsche Volkswirtschaft. Hamburg, Germany: Hansa-Muehle G.m.b.H. p. 39-56.

(9) (9) The use of steam power and the introduction of the hydraulic press around the middle of the nineteenth century brought an end to the age of the miller for hire (*Lohnmüller*). At the same time, they opened up the path toward a large-scale commercial mill industry. These processed the raw materials that accumulated in the immediate vicinity. Local agriculture could no longer satisfy the demand for fat in Germany, which had grown since 1850. For that reason, oil seeds had to be imported. A port was necessary, and for that reason, oil mills settled around the mouths of rivers. Harburg in Hamburg was the most important port in Germany. The first oil mill in Harburg was built by Jürgen Uthorst in 1686. In 1833, Sixtus Heins built the first commercial mill that was operated with water power, and starting from 1838, it was run with steam and a hydraulic press. In 1843, C. Polmann built an oil mill in Harburg with three hydraulic presses that were driven by a 14 horsepower steam engine. From 1845 to 1849, the Harburg Port was expanded. In 1847, the first locomotive ran from Hanover to Harburg. While in 1847, there were still just approximately 63 ships berthed in Harburg, by 1853 that figure was already 1,197. The population was 5,326. At that time, Harburg already had three oil mills. In 1860, Gottlieb Leonhard Gaiser was the first to import transoceanic seeds (palm kernels). By 1868, the oil industry in Harburg already employed 110 workers, 27 hydraulic presses with 88 horsepower, it produced 45,000 metric hundredweight (*Zehntner* = 100 kg) of oil and already processed 129,435 metric hundredweight of imported seeds. Next to Marseilles, Hull, and Aarhus, Harburg became one of the most important production sites [for oil] in Europe. The Association of German Oil Mills (*Verband der deutschen Ölmühlen*) was founded in 1900 (on April 17, 1900), and starting from 1902, foreign oil seeds were free of duty. Up to the First World War, the processing of foreign oil seeds increased continuously.

(10) Westphall, Paul: *Aktieselkabet Det Ostasiatiske Kompagni*. The East Asiatic Company, Ltd., Copenhagen: 1972. pp. 206-207. "Hamburg Oil Mill Inc. (*Oelmühle Hamburg AG*), Hamburg. The company originated in 1910. At the time, the Stettin Oilworks Inc. (*Stettiner Oelwerke AG*), Stettin, later the Stettin Oilworks in Hamburg Inc. (*Stettiner Oelwerke in Hamburg AG*) was founded. The O.K. participated in the founding. Envisioned as the purpose of this company was the processing of soybeans, which at that time came exclusively from Northern China and which were imported primarily by the O.K. In 1965, the majority of the shares were acquired in the Hanseatic Mill Inc. (*Hansa Mühle AG*) which was also located in Hamburg, and the

production of both companies was concentrated there. After that, the company was given the name Hamburg Oil Mill Inc. (*Oelmühle Hamburg AG*). Along with a pharmaceutical factory (Nattermann), the Hamburg Oil Mill Inc. founded Phospholipid Ltd. (*Phospholipid GmbH*) which dealt with the further processing of soy lecithin."

(11) On March 27, 1896, the Brinkmann & Co. Harburg Linseed Oil and Varnish Factory Ltd. (*Harburger Leinöl- und Firnisfabrik Brinkmann & Co. GmbH*) was founded by Max Brinkmann (1846-1927) and Arnold Mergell (1855-1929) along with Carl Klaue, who left a few years later. After the death of Carl Klaue, the company was renamed the Brinkmann & Mergell Harburg Linseed Oil and Varnish Factory Ltd. (*Harburger Leinöl- und Firnisfabrik Brinkmann & Mergell GmbH*) in 1903. In 1905, the company was dissolved and refounded as the Brinkmann & Mergell Harburg Oil Works (*Harburger Oelwerke Brinkmann & Mergell*) (*HOBUM*). Starting from 1906, this company also processed cottonseed. And as of 1910, the processing of soybeans was included. See: Harburger Oelwerke Brinkmann & Mergell, Volume 15 of the *Veröffentlichungen der wirtschaftsgeschichtlichen Forschungsgesellschaft e.V.* [Publications of the Company History Research Society Reg. Assn.], Hamburg: 1956.

(12) Noblée & Thörl was founded on November 28, 1855 as H. Noblée & Co. by Henri Louis Joseph Noblée for the obtaining of mineral oil from coal. In 1841, he made a request with the city of Hamburg to introduce a sort of street lighting with hydrocarbon (*Hydrocarbür*), which was rejected. In 1849, he once again made a request with the city of Hamburg which was accepted (the H. Noblée & Co. Hydrocarbon Factory and Gas Works in Harburg {*H. Noblée & Co. Hydrocarbür-Fabrique und Gasanstalt in Harburg*}). The decrease in the demand for German lamp oil—a consequence of the greater and greater spread of gas lighting and the discovery of sources of petroleum in the USA—made the obtaining of lamp oil and mineral oil from coal unprofitable. Noblée took the logical step from this, and in 1865 he built a palm kernel oil factory (Noblée & Co.'s Palm Kernel Oil Factory (*Noblée & Co.'s Palmkernölfabrik*)). In 1876, Henri Noblée retired. His son Henri Charles Noblée (1829-1899) took over the company. Consul Max Emil Johann Thörl, the older brother of Friedrich Thörl, joined the company in 1876, and the name was changed to Noblée & Thörl's Palm Kernel Oil Factory (*Noblée & Thörl's Palmkernölfabrik*). In 1899, they changed the name of the company to Noblée & Thörl General Partnership (*Noblée & Thörl OHG*) and later to Noblée & Thörl Successor Co. Ltd. (*Noblée & Thörl Nachf. GmbH*). In 1912, Noblée & Thörl started soybean processing. By 1929, 200,000 metric tons of soybeans had already been processed. See: Noblée, 28. November 1855–28. November 1955. *Festschrift der Noblée & Thörl GmbH* [Commemorative Publication of Noblée & Thörl Ltd.], Nov. 1955.

(13) The Harburg Oil Factory Friedrich Thörl (*Harburger Ölfabrik Friedrich Thörl*) was registered on November 2, 1882. Friedrich Thörl, the younger brother of Max Thörl, who was the co-owner of Noblée & Thörl, studied at Noblée & Thörl as a chemist and technical consultant. In 1906, all of Friedrich Thörl's plants were transferred to F. Thörl's United Harburg Oil Factories Inc. (*F. Thörl's Vereinigte Harburger Oelfabriken AG*). In 1913, they included the processing of soybeans. In 1922, F. Thörl retired from the active management of the company. The van den Bergh group took over the majority of the shares. See: *75 Jahre Thörl*. [75 Years of Thörl] Festschrift [commemorative publication] published November 1958. See also: Philipps, O. 1939. *Friedrich Thörl und die deutsche Ölmüllerei*. [Friedrich Thörl and the German Mill Industry]. Verlag Gerhard Stalling A.G., Oldenburg. (Continued). Address: Managing Director, Nattermann Phospholipid GmbH, Cologne, Germany.

1863. Golbitz, Peter. 2000. Health claim to boost soy sales. *Bluebook Update (Bar Harbor, Maine)* 7(1):1-2. Jan/March. • **Summary:** "The soyfoods market in the United States is expected to receive a boost from Uncle Sam this year as the new Food and Drug Administration approved health claim for soy protein products begins to make its appearance on food labels.

"In October, FDA gave final approval to a rule which allows food products containing 6.25 grams of soy protein per serving to carry a claim promoting the food as being heart healthy. It is felt by many in the food industry that this government approved health claim is a tacit 'stamp of approval' by the largest food regulatory agency in the world and will have a wide spread impact on the marketability of soy protein containing foods not only in the U.S., but elsewhere around the world as well.

"The market for soyfoods in the U.S. has already been experiencing dramatic growth during the past few years due to the increased popularity of such products as soy-based meat alternatives, soymilk drinks and tofu products. According to a joint Soyatech-SJH & Co. study, overall soyfoods sales in the U.S. have been growing at an annual rate of over 20% for the past 3 years, with some categories such as meat replacements and dairy alternatives growing at over 40% per year. Will the health claim help to boost sales in these categories even further?

"I haven't seen a spike in sales yet to indicate that people are grabbing the products off of the shelves any faster,' says Rick McKelvey of Lightlife Foods, one of the nation's leading soy-based meat alternative processors. But, says the Vice President of Sales of the Greenfield, Massachusetts company, 'We are not using the claim yet, that's still about three weeks away.'

"With sales already increasing 33% for Lightlife this year, the driver for any additional growth may be heard to

measure. 'It wasn't brand new news for present consumers,' says Mr. McKelvey of the healthy heart benefits of soy products. 'My hope is that it will help to build a long term impact on demand.'

"At Nasoya Foods in Ayer, Massachusetts, one of the country's leading tofu companies, the plan is to take the new health claim to heart by making an image of the human circulatory pump a central focus of a new logo for all of their products.

"It will become an important element on all of our packaging,' says Amy Towle, Director of Marketing for Nasoya, one of the brands of Vitasoy USA in San Francisco [California], which also produces soymilk and other soyfood products. The health claim itself should appear on 'most, if not all of our tofu,' says Ms. Towle, 'but we expect it will take a few more months before the new label is out.'

"But again, it might be difficult to measure the impact of the new label itself on product demand. According to the company, sales for the month of November were already up more than 50% over the same month last year, without the health claim on the package.

"In the United Kingdom, where soyfoods companies have just weathered a major crisis due to the GMO issue in Europe, the U.S. health claim is seen as a wind of change blowing across the Atlantic.

"It's probably the best thing to happen to soy for 30 years,' says Peter Fitch, Managing Director of the Haldane Foods Group in Buckinghamshire, England. 'Properly handled in the U.K. the beneficiary publicity can help restore soya's tarnished reputation and get it back on the menu. Food manufacturers who took soy out their formulations should be motivated to put in back in again quickly.'

"For its own part, Haldane is considering labeling the soy protein content of their soyfood product line within the constraints of the E.U. regulations.

"Growth in the category of vegetarian foods doesn't surprise soy protein ingredient suppliers like the Central Soya Company, part of Eridania Beghin-Say America. 'Vegetarian foods are going to appeal to regular shoppers looking for intelligent choices to make subtle changes in their diets,' says Charlie Worrall, Manager of the Health and Nutrition Group at EBS America. 'When you get to be 40 or 50 years old, it's very likely that you know someone who has been diagnosed with a heart disease and you begin to make your food choices differently.'

"It's too early to tell what effect the claim will have, but we have seen a large increase in interest,' says Phil Fass, Marketing Manager for the Protein Group at Archer Daniels Midland. 'Companies that had a negative image of soy before now see this as a positive.'

"The food industry is looking for new applications for soy proteins,' reports Mr. Worrall. But food formulators developing new products have their work cut out for them. 'Consumers are not willing to give up taste for nutrition.'"

A photo shows the label of Yves Veggie Ground Round in the middle of which is a heart and the statement: "Made with Heart Healthy Soy Protein... May reduce the risk of heart disease." The caption: "Yves Veggie Cuisine of Canada is using the new FDA health claim on products it sells in the U.S. market."

1864. ADM Protein Specialties. 2000. All your soy protein needs under one roof (Brochure). Decatur, Illinois. 4 p. 28 cm.

• **Summary:** Gives detailed information about: Pro Fam isolated soy proteins (19 types). Ardex isolated soy proteins (3 types). Arcon soy protein concentrates (7 types). Arcon textured soy protein concentrates (2 types). Maicon textured soy protein concentrates (1 type, for vegetarian foods). TVC textured vegetable protein chunks and crumbles (1 type). TVP textured vegetable protein (3 types). Nutrisoy flour/grits (5 types). Soylec and Nutrisoy (lecithinated and refatted soy flours) (3 types). Address: Box 1470, Decatur, Illinois 62525. Phone: 1-800-637-5850.

1865. Messina, Mark. eds. 2000. Third International Symposium on the Role of Soy in Preventing and Treating Chronic Disease [Proceedings of a symposium held in Washington, DC, on Oct. 31 to Nov. 3, 1999]. *J. of Nutrition* 130(3S):653S-711S. March. Supplement.

• **Summary:** These proceedings are divided into three parts: Introduction and six papers. Oral presentation abstracts. Poster presentation abstracts.

Nearly 600 delegates attended this symposium—more than twice as many people as attended the first symposium in 1994.

The symposium was sponsored by Archer Daniels Midland Co., Cargill Inc.-Protein Products, Central Soya, Co., Dr. Chung's Food Company, Monsanto, Personal Care Products Company, Protein Technologies International, SoGood Int., Solbar Plant Extracts, SoyLife/Schouten, Whitehall-Robins Healthcare, the United Soybean Board and the following State Soybean Associations: Illinois Soybean Board, Indiana Soybean Board, Kentucky Soybean Promotion Board, Michigan Soybean Promotion Committee, Minnesota Soybean Research and Promotion Council, Nebraska Soybean Board, Ohio Soybean Council, South Dakota Soybean Research and Promotion Council. Publication of symposium proceedings was supported by educational grants from the United Soybean Board and the Soyfoods Association of North America. Address: 1543 Lincoln St., Port Townsend, Washington 98368.

1866. *ADM Nutrition & Health Update (Decatur, Illinois)*. 2000. Soyfoods for reducing prostate cancer risk. 2(1):1, 3-4. Winter. [14 ref]

• **Summary:** Introduction. Prostate cancer rates. The Asian-soy-cancer connection. Soy and prostate cancer risk—The

evidence: In vitro studies, animal studies, human studies. Conclusions.

Introduction Research on the health effects of soyfoods and soybean constituents has increased exponentially over the past several years (see *In the News*), and the areas under investigation have expanded greatly. Despite the plethora of research, arguably, three of the most important and exciting studies (1-3) have been published within just the past 18 months, and all involve prostate cancer.

"Prostate Cancer Rates: Every 15 minutes a man dies of prostate cancer in the United States, which makes the prostate gland second only to the lungs as the organ most likely to cause a fatal malignancy in men. For 1999, estimates are that about 179,000 American men will be diagnosed with prostate cancer, and about 37,000 will die of this disease (4). A male baby, born today, has a 13% chance of developing prostate cancer, and a 3% chance of dying from it.

"There are striking differences in prostate mortality rates throughout the world—with the highest rates in Western countries. Migration data suggest that these differences are environmentally, not genetically, determined (5). Men who move from low-risk to high-risk countries early in life can acquire the same cancer risk as in their adopted homeland, even within the same generation.

"The Asian-Soy-Cancer Connection: The National Cancer Institute first began seriously investigating the anticancer potential of soy in 1990, but at that time, most of the focus was on breast cancer. In part, this was because of the low Asian breast cancer mortality rate. Japanese rates are about three times lower than US rates, for example (4). But often overlooked, is that US prostate cancer mortality rates are also much higher than Japanese rates, about four times higher (4). Added to this, is the intriguing observation first made two decades ago, that upon autopsy, a surprisingly large number of Japanese men are found to have small prostate tumors (6). This is also the case in other low-risk countries. Thus, the onset of prostate cancer appears to occur later in life and/or prostate tumors grow more slowly in these countries. As a result, men die with their cancer rather than of their cancer.

"Delaying the clinical appearance of prostate tumors by even a few years would have a significant public health impact in Western countries since prostate cancer is a disease of older men. Less than one quarter of the new diagnoses of prostate cancer each year are in men under 65 (4) whereas about half of the new diagnoses of breast cancer occur in women under 65 (7)."

"Conclusions: Evidence that soyfoods reduce prostate cancer risk is quite impressive, although still very speculative. The epidemiologic studies cited above suggest that as little as one serving per day of a soyfood may be enough to reduce risk. Despite the lack of definitive data, prudence would dictate that men concerned about prostate

cancer should consume soyfoods. In addition, other research suggests that a prostate-healthy diet should include ample amounts of selenium (12), and vitamin E (13), and lots of cooked tomato products (14).”

1867. *ADM Nutrition & Health Update (Decatur, Illinois)*. 2000. NutriSoy Branding Program: ADM update. 2(1):1-2. Winter.

• **Summary:** “A nationwide media program has been launched to announce and support the NutriSoy Branding Program. The program was developed in response to growing consumer demand for healthy, good tasting soyfoods.

“Use of the NutriSoy logo will allow consumers to easily identify food products that contain a significant amount of soy protein. It will also provide food companies with an effective means to communicate to their consumers that the food products they are marketing contain a significant amount of soy protein, which is an important part of a healthy diet.”

“Nationwide media support: The Archer Daniels Midland Company has made a long term commitment to support the NutriSoy Branding Program with television, radio, print, and public relations.”

A bar chart at the end of this article, titled “Consumers who have tried soy products,” shows that 20% had tried them in 1996, 32% in 1997, and 67% in 1998. The source of these statistics is not given in the article but Phil Fass of ADM says the statistics come from the latest United Soybean Board annual report on consumer attitudes about nutrition.

Talk with Phil Fass, head of NutriSoy branding program and marketing at ADM. 2000. April 28. To participate in this program a company’s product(s) must contain a significant level of at least one ADM soy protein products, such as Arcon [soy protein concentrate], Pro Fam, or Nutrisoy soy flour. So far, three companies have signed up for the program. Other successful branding programs include the “Intel inside” program initiated by the computer microchip maker, and the NutraSweet program run by the sweetener maker. There is no cost for a company to participate in the program. ADM has an advertising budget of about \$3 million this year, projected to be \$8 million next year.

1868. *ADM Nutrition & Health Update (Decatur, Illinois)*. 2000. Successful soy conference. 2(1):4. Winter.

• **Summary:** “Evidence of the interest in the health benefits of soyfoods and soybean isoflavones was clearly apparent from the number of delegates attending the Third International Symposium on the Role of Soy in Preventing and Treating Chronic Disease, which was held October 31–November 3, 1999, in Washington, DC. During the four days of the conference nearly 600 researchers and health professionals heard presentations that focused on a range of topics. That attendance figure represents a twofold increase

over the first symposium held in 1994. In addition to 48 oral presentations, there were over 100 poster presentations, which is three times more than were presented at the first meeting. Furthermore, in addition to cholesterol reduction, cancer, and osteoporosis, topics covered at the previous symposia, research at this third symposium addressed areas such as hot flashes, hypertension, and cognitive function.

“The number of exhibits was also impressive and clearly illustrated that soy products have become mainstream. During the Tuesday luncheon, six pioneers of the field were recognized for their contributions: Herman Adlercreutz, University of Helsinki (Finland); Chai-Won Chung, Dr. Chung’s Food Company (Korea); Cesare Sirtori, University of Milan (Italy); David Kritchevsky, Wistar Institute (Philadelphia, Pennsylvania); Kenneth D.R. Setchell, Children’s Hospital (Cincinnati, Ohio); and Doyle Waggle, Protein Technologies International (St. Louis, Missouri). The session on coronary heart disease was held in honor of the late Kenneth K. Carroll, for his work on the cholesterol-lowering effects of soy protein.

“As is always the case with scientific meetings, the research presented probably raised more questions than it answered but there is no doubt that those who attended left with greater enthusiasm for their field. The abstracts from the conference are expected to be published in the *Journal of Nutrition* sometime next year.”

1869. *Nutrition Business Journal (San Diego, California)*. 2000. Corporations proceed cautiously with soy. 5(5):16. May.

• **Summary:** The supermarket chain Kroger promoted soyfoods at all of its 2,000 stores as part of Soyfoods Month in April. Nature’s Path has launched Soy Plus Organic Granola, with a claim about reduction of menopausal symptoms. Natural Vitality has introduced Menopausitive, a drink fortified with 110 mg of isoflavones.

In the 17 Sept. 1999 issue of the prestigious scientific journal *Science*, Steven H. Zeisel, chair of the Department of Nutrition at the University of North Carolina (Chapel Hill) wrote a Policy Forum article advocating safety studies for substances like soy isoflavones, which are administered in large doses to obtain medicine-like effects, before they are put on the market. This would apply to products [such as ADM’s Novasoy], for example, were one dose is five times the average human consumption. Central Soya has a new product, Prevastein Soy Isoflavone Concentrate.

1870. *Soy & Health 2000: Clinical evidence, dietetic applications—Second announcement (Brochure)*. 2000. Kortrijk, Belgium. 8 panels. 21 x 10 cm each. [Eng]

• **Summary:** This symposium will be held on 13-14 Oct. 2000 at Palais de Congrès, Brussels, Belgium. Contents: Introduction. Program—Friday: Soy protein and heart disease, new products and technology, soy and cancer. Saturday:

Obesity, hypertension, health implications of soy lecithin, oil, phytosterols, hormonal effects, from science to market. Website: [www.soyconference.com](http://www.soyconference.com). Registration form. Conference format. Call for posters. Symposium venue. Exhibits. International advisory board. Gold sponsors: Protein Technologies International (a DuPont business). American Soybean Association. United Soybean Board. Eridania Béghin-Say: Health & Nutrition Group. Marks & Spencer. Silver sponsors: ADM, Sojasun. Address: Kortrijk, Belgium.

1871. Wolf, Walter. 2000. Soy-related documents–Business records (Archival collection). Peoria, Illinois.

• **Summary:** In July 2000 Dr. Walter Wolf, as he was preparing to retire from the Northern Center for Agricultural Utilization Research in Peoria, Illinois, sent to Soyfoods Center many file folders of soy-related documents that he had collected between about 1968 and the present. Most are in the field of soy protein, and none are confidential / proprietary. Each one is neatly dated, and the documents are in reverse chronological order in each manila file folder.

Dr. Wolf earned his PhD degree at the University of Minnesota, where he studied soy proteins. He began work at NCAUR in 1956; at that time it was named the Northern Regional Research Center. He worked as a chemist in the Meal Products Research Group. He did mostly pure research, rather than applied. At the time there was little interest in food uses of soy protein. One of his main contributions was collecting and publishing statistics on the annual production and price of soy flour, soy protein isolates, soy protein concentrates, and textured soy protein products.

The following files (listed alphabetically) were received by Soyfoods Center. Unless otherwise stated, only one file on each company or subject was received. A thin file contains less than about 20 sheets of paper; a thick one contains more than 20 sheets: ADM (Archer Daniels Midland Co.; 2 thick files 1970-2000). Anderson Clayton (thin, 1971-81). Cargill (thin, 1970-2000). Central Soya (4 thick files, 1959-1999). Dawson Mills (thick, 1974-1983). Edible Soy Products, Inc. (Hudson, Iowa; Maker of Pronuts; thin, 1971-78). EMI Corp. (Des Plaines, Illinois, thin, 1971-74). Erie Casein Co. (thin, 1966-73). Fuji Oil Co. Ltd. and Fuji Purina Protein Ltd. (of Japan, thick, 1972-1993). Farmland Industries and Far-Mar-Co (thin, 1970-1993). Food Ingredients–Dale Johnson (thick, 1964-1998). Garrison Products (extrusion, thin, 1977-78). General Foods (thin, 1974-1981). General Mills (thick, 1965-1976). Gerber Products (thin, 1969). Grain Processing Corp. (1968-1976). Griffith Laboratories (thick, 1968-1986). Gunther Products (purchased by A.E. Staley, thick, 1963-1975). Honeymead Products (Mankato, Minnesota, thin, 1978-1986). Industrial Grain Products (Montreal, Canada, thin, 1973-1975). Kikkoman (thick, 1972-1997). Kraft, Inc. (1965-1984). Lauhoff Grain (1 thin, 1973-86). Loma Linda Foods (thin, 1969-1986). Miles Laboratories (thick, 1970-

83). Nabisco (1974-81). Meals for Millions Foundation (1 thin file, 1976). Protein Advisory Group of the United Nations, PAG Guidelines (thin, 1969-1978). Quaker Oats (thin, 1970-97). Joe Rakosky, consultant (1979-83). Ralston Purina Co. (4 files, very thick, 1962-1999). Soy protein products (2 files, thick, 1970-1986). Soy protein production statistics and estimates (two thick files, 1970-1996). Staley (A.E., 1 thick, 1969-1986). Swift & Co. (thin, 1961-1971). Takeda Chemical Industries (thin, 1970-1984). Textured soy proteins (1 thin, 1969-71). Tofu equipment (thin, 1970s). Tokuji Watanabe tofu studies at Peoria, Illinois (thick, 1960-61). United Nations Industrial Development Organization (UNIDO, thick, proceedings of Nov. 1969 meeting at Peoria, Illinois), Unilever (thin, 1974-79). Wenger Manufacturing Co. (thin, 1975-76). Worthington Foods (thick, 1965-1998). Address: NCAUR, Peoria, Illinois.

1872. Cooper, Kim. 2000. Soyfoods Canada, the new Canadian soyfoods association (Interview). *SoyaScan Notes*. Aug. 21. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Current members of the new organization are the Canadian Ministry of Agriculture, Ontario Soybean Growers, Natures Milling (Ontario), St. Clair Agri Services Ltd. (a soybean exporter in Ontario), University of Guelph, SoyaWorld Inc. (Vancouver, BC), ADM (Maureen Callahan, from USA), and Galaxy Foods (Ontario).

The group is presently headquartered at the Ontario Soybean Growers' offices in Chatham. Janet Nauta (in charge of communications at OSG), who is serving as executive director, is working on different brochures and cookbooks. The main goal is to raise awareness of soyfoods in Canada. The ultimate question people ask is "What do I do with this stuff?"

The group has already had three meetings with a fourth scheduled for October 25th in Toronto, Ontario.

Note: Because of Canada's archaic food laws, Galaxy Foods can't sell its cheese alternatives in Ontario. The government is considering rescinding this law. One of the focuses is on government relations, and standardizing laws that relate to soyfoods within the various provinces. Address: Marketing Specialist, OSGMB, Chatham, Ontario, Canada N7M 5L8. Phone: (519) 352-7730.

1873. Wendel, Armin. 2000. Lecithin: the first 150 years. I. From discovery to early commercialization. *INFORM (AOCS)* 11(8):885-90, 892. Aug. [34 ref]

• **Summary:** Contents: Introduction and early history. From research to practical application. The soybean (*Glycine max* (L.) Merrill). The commercial breakthrough: The industrial manufacture of lecithin (Developments in Europe, developments in the United States).

Photos show: (1) Armin Wendel. (2) Theodore Nicolas Goble (1811-1874). (3) Phospholipid structures. (4)

Hermann Bollmann. (5) Bruno Rewald. (6) Hansa Mill's (Hansa Mühle's) first factory. (7) Joseph Eichberg.

Tables show: (1) Lecithin compounds on the market prior to 1910: Lactalbin, Lecitovin, Lecitogen, Lecithol-Riedel, Lecithmedullin, Lecithinum Jodatum, Lecithin chocolate tablets, Lecithin-Perdynamine, Lecithin wine tonic, Lecithin cod-liver oil, Liquid lecithin, Lecithin-egg yolk oil, Lecithinbromin, Lecithcerebrin, and Lecipon. A brief description of each is given (Source: *Präparative Pharmazie*. 1967. 14:212). (2) U.S. Patents issued to Rewald and Bollmann of Hansa-Mühle (17 patents from 1,464,557 to 2,039,739).

Chronology: 1910–Various pharmaceutical preparations based on the expensive lecithin from egg yolks (ovo-lecithin) were commercialized by German companies such as J.D. Riedel AG, Berlin, the Dr. Heinrich Buer company in Cologne, and Actien-Gesellschaft fuer Anilin-Fabrikation (AGFA) in Berlin. The industry began to search for a less expensive source of lecithin. They found the soybean.

A brief biography of Hermann Bollmann follows.

1910 ca.–Hermann Bollmann returned to Hamburg (from China) and made his first attempt to extract oil from soybeans imported from Manchuria.

1911–He established his first company, *Die Hansa Mühle* (The Hansa Mill; Fig. 4) on Wendenstrasse in Hamburg. Bruno Rewald and, from time to time Adolph Schneider (who was also Bollmann's assistant and secretary) were employed in the laboratory.

1916–Hansa-Mühle GmbH, Hamburg, was established [shortly after World War II] for the purpose of processing soybeans based on the Bollmann patents.

1924–1926–According to Hansa-Mühle's report to shareholders, the company's main plant processed 2,277 metric tons (mt) of soybeans in 1924, 14,548 mt in 1925 and 17,385 mt in 1926. Each metric ton of soybeans processed yielded about 8 kg of lecithin. This lecithin was used mainly by the margarine industry.

1927–Hansa Mühle, to keep pace with the growing demand and the competition, planned to construct a new factory “at Köhlbrand and the Neuhof maritime shipping canal in Neuhof” with a capacity of 300 tons of soybeans a day. Other European lecithin manufacturers were the Aarhus Oliefabrik (*Yollkin* [spelled *Yelkin* in the USA] brand) and the Dansk Soyakage-Fabrik [Dansk Sojakagefabrik] (*Chococit* brand), both in Denmark. The three manufacturers formed a cartel.

1929–1930–The worldwide financial crisis was very hard on Hansa Mühle, and ultimately the company had to file for bankruptcy. A new company was established, but Bollmann was demoted. He finally left Hansa Mühle on June 30. It was a huge blow to him, from which he never recovered. He died in Feb. 1934 at age 54.

1965–Hansa Mühle AG merged with Stettiner Ölwerke to form Ölmühle Hamburg AG.

Developments in the United States: Solvent extraction of soybeans was very slow to catch on in the USA—unlike Europe.

1927–Joseph Eichberg, who had heard about developments with lecithin in Europe as early as 1923, first visited Hansa Muehle in Hamburg and proposed that he become the company's representative in the United States.

1930–The American Lecithin Co. (ALC) was established with Hansa Muehle owning a relatively small portion of the shares. Soon ALC was not only distributing lecithin supplied by Hansa Muehle but was also doing research on new applications for lecithin in the USA, such as in chocolate.

1931–By this date Aarhus Oliefabriken was selling its lecithin in the USA through Ross & Rowe (New York City).

1934–Archer Daniels Midland Co. (ADM) was the first company in the United States to make lecithin; that is because they were the first to start large-scale solvent extraction using equipment from Germany. Shortly afterwards, The Glidden Co. did the same.

1935–In the USA, the complicated patent situation “prompted companies to join a patent pool.” ALC was reorganized in Ohio as the new patent holding and licensing company. Address: Managing Director, Nattermann Phospholipid GmbH, Cologne, Germany; and Chairman of the Board, American Lecithin Company (Oxford, Connecticut, USA).

1874. Archer Daniels Midland Co. 2000. ADM this quarter: Fourth quarter report to shareholders. Decatur, Illinois: ADM. 1 p. Front and back. Glossy, color. 28 cm.

• **Summary:** See next page. “ADM directors vote cash and stock dividend: The ADM board of directors has declared a dividend of five cents a share on the Company's stock, payable September 4, 2000 to shareholders of record August 11, 2000.

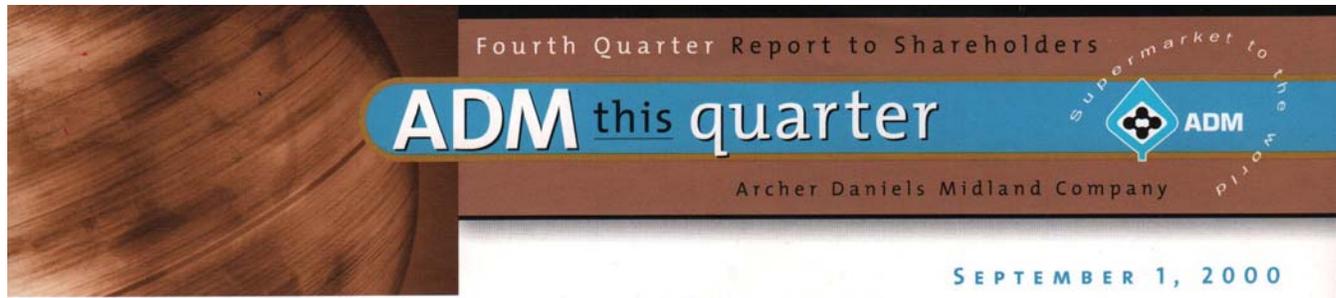
“This is ADM's 295th cash dividend and 275th consecutive quarterly payment, a record of 67 years of uninterrupted dividends. As of June 30, 2000, there were 602,575,493 shares of ADM stock outstanding.

“The directors also declared a five percent stock dividend payable September 25, 2000 to shareholders of record August 28, 2000.”

ADM earned \$0.50 per share for the past fiscal year. Address: Decatur, Illinois.

1875. Soyatech, Inc. 2000. *Soya & Oilseed Bluebook 2001*: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 424 p. Sept. Comprehensive index. Internet address index. Brand name index. Advertiser index. 28 cm.

• **Summary:** On the cover is a color photo of a group of soybean leaves superimposed on a purple and blue integrated circuit. Across the bottom: “The ultimate industry resource:



In print and online. [www.soyatech.com](http://www.soyatech.com).” On the inside front cover is a color ad from Tetra Pak, showing soy milk, its processing and packaging. On the first page is a full page color ad from Northland Organic, “Leading the way naturally.” On the back cover is a color ad from ADM titled “When it comes to soy protein, we bring more to the table.” A large color photo shows many of ADM’s soy protein products made into edible foods, each labeled. Also displays the logo for “NutriSoy: Natural soy protein. The heart of a healthy diet.”

The Foreword states that Soyatech has a newly designed website ([soyatech.com](http://soyatech.com)) which “includes the entire *Soya & Oilseed Bluebook* as part of its many new features.” To gain access, paid subscribers must first register. Address: 7 Pleasant St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

1876. Hutton, Kyle J.; Guymon, John S. Assignors to Archer-Daniels-Midland Company (Decatur, Illinois). 2000. Process for producing deoiled phosphatides. *U.S. Patent* 6,140,519. Oct. 31. 6 p. Application filed 7 Dec. 1998. [26 ref]

• **Summary:** The abbreviation “AI” refers to “acetone insoluble.” In general the phosphatide fraction of commercial lecithin is insoluble in acetone.

Background: “1. Field of the Invention: The invention relates to deoiled phosphatides; food grade or pharmaceutical grade lecithin; and methods for producing same.”

“Summary of the invention: The invention concerns the separation and refining of phosphatides, in particular soybean phosphatides to an oil free state without the use of acetone as an extracting agent. It has been found that the claimed invention results in a higher quality lecithin that is made by a process that can be easily applied to commercial preparations.

“The invention is first directed to a method for producing deoiled phosphatides, wherein the method does not use acetone and the retentate is decolorized following physical separation.” Address: 1. Latham; 2. Forsyth. Both of Illinois.

1877. AGP–Ag Processing Inc a cooperative. 2000. Annual report: Partners in food production. 12700 West Dodge Road, P.O. Box 2047, Omaha, Nebraska 68103-2047. 56 p. 28 cm.

• **Summary:** Net sales for 2000 (year ended Aug. 31) were

\$1,961.736 million, down 6.4% from \$2,094.504 million in 1999. Earnings before income taxes: \$20.908 million, up 15.1% from the \$18.167 million in 1999.

AGP has earned a profit for 17 consecutive years—“every year since its formation. This was no small task as depressed margins—plagued the soybean processing and refining business due to excess industry capacity.” “AGP’s innovative Oil Premium Program rewards member-suppliers of soybeans that are of more value in the marketplace by paying a premium for higher oil content soybeans.”

A full page (p. 30) is devoted to “AGP Chief Executive Officer Jim Lindsay retires.” He retired effective 1 Nov. 2000. “Jim’s career began in 1958 at Spencer Kellogg and progressed with a move to ADM in 1961. There he held various positions, including vice president of soy processing, vice president of corn sweeteners, and president of Brazilian operations.” Jim has served on the boards of directors of various professional associations, including the National Oilseed Processing Association (chairman, 1986-1990), U.S. Bank, Associated Benefits Corporation, United Way, the Elkhorn, Nebraska School Foundation, and various other community agencies. “Married with four children, Jim is taking this opportunity to help his wife raise their 12 year old daughter.” Photos show: (1) Jim Lindsay. (2) The James W. Lindsay Child Care Center, which “was dedicated on the AGP Campus in fiscal 2000 in lasting recognition of Jim’s commitment to the welfare of AGP employees and their children.”

The next page, “Leadership,” shows that Martin P. Reagan was appointed CEO and General Manager on 1 Nov. 2000. The names of all group vice presidents, senior vice presidents, and vice presidents are given. Color photos of the management staff are shown on the next 4 pages.

A full page (p. 35), titled “Reagan succeeds Lindsay as CEO,” gives a good bio. He was born in Austin, Minnesota, graduated in 1973 with a bachelor of science degree in agricultural economics from the University of Minnesota, then joined International Multifoods grain division. In 1989 he became president of trading and grain merchandising. In 1991 the operations were sold to AGP—where he continued in grain merchandising.

Also contains color photos of (1) Leitig and Lindsay. (2) Huge soybean processing plants and refineries. (4) The board of directors. (5) Management staff. Address: Omaha,

Nebraska. Phone: (402) 496-7809.

1878. Archer Daniels Midland Co. 2000. Annual report: Vision... and value. P.O. Box 1470, Decatur, IL 62525. 44 p. Oct.

• **Summary:** Net sales and other operating income for 2000 (year ended June 30) were \$12,877 million, down (for the second year in a row) 9.9% from 1999 and down 20.1% from 1998. Net earnings for 2000 were \$300.9 million, up 13.1% from 1999, but far below the recent peak of \$796 million in 1995. Shareholders' equity (net worth) is \$6,110 million, down 2.1% from 1999. Net earnings per common share: \$0.47, up 14.6% from 1999. A pie chart (inside front cover) shows that 53% of ADM's 2000 revenues (income) comes from food ingredients, 32% from feed ingredients, 8% from industrial uses, and 7% from services.

Also accompanying the annual report is a "Notice of Annual Meeting." G. Allen Andreas, age 57, Chairman of the Board and CEO, had a 2000 salary of \$2,373,972. Address: Decatur, Illinois.

1879. Dogon, Sally Sinaiko; Sinaiko, Wally. 2000. Genealogy and memories of Joe Sinaiko, soybean pioneer in Cedar Rapids, Iowa. Part II (Interview). *SoyaScan Notes*. Nov. 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: One of Joe's close friends was Dwayne Andreas—although Dwayne [born on 4 March 1918] was 27 years younger than Joe. The two friends were both born on March 4. Note: In 1936 Dwayne had moved the family business from Lisbon, Iowa, to Cedar Rapids and renamed it Honeymead Products. In Andreas' 1991 biography, *Supermarketer to the World*, E.J. Kahn, Jr., writes (p. 71) that in Cedar Rapids "Dwayne came under the tutelary spell of one of his Jewish mentors, Joseph Sinaiko, a leading soybean processor. 'A very classy guy,' Andreas would say years afterwards, 'and the best soybean processor of that era.'"

Dwayne Andreas was a frequent visitor at the Sinaiko's home. Sally recalls that he was a charmer, an extrovert, and a wonderful person—with great charisma. He was always very kind and nice to Sally when she was a child. She remembers that Dwayne once told Joe that most of what he knew about soybeans he learned from Joe. During those years, Joe and Dwayne usually did business by word of mouth, rather than written agreements. Each man could always be trusted at his word. Dwayne and Joe remained lifelong friends, and—as with all his friends—Dwayne was very generous and kind to Joe.

Note: *Soybean Digest* reports that in 1943 Joe sold the Iowa Milling Co. in Cedar Rapids to Cargill, Inc.—and considered retirement at age 50. By Sept. 1943, when the American Soybean Association held its annual convention in Cedar Rapids, Cargill already owned the plant. But by Nov.

1943 Joe was active once again with soybeans on two fronts. He had just purchased the Mid-Continent Vegetable Oil Co. in Galesburg, Missouri, and he was [perhaps] installing equipment for a soybean processing plant at Fairfield, Iowa.

On 11 Oct. 1944 the plant in Cedar Rapids burned in a huge and spectacular fire, with an estimated loss of \$200,000. Sally, then age 12, remembers going to see the fire with Joe. In Oct. 1946 Cargill sold the Cedar Rapids expeller plant back to Joe Sinaiko.

Joe was a quiet and simple man. He was not at all impressed by important people, fancy restaurants, or the like. He loved to eat at home, but took the family out to eat once a year. The kids birthdays were not celebrated; Sally never received a present in her life—but she was free to buy anything she wanted—using family funds. He was not a social climber. He liked people who were industrious or conscientious. He had no class discrimination. He rarely wore a necktie and did not require neckties of office workers in his company. In 1938 or 1939 Joe and his family moved into a large, beautiful Tudor house at 2232 Linden in Cedar Rapids. From that time the family had nice cars. In about 1946 Joe and Freda were divorced; she continued to live in the big house in Cedar Rapids. Joe lived on a farm he bought near Marion, Iowa.

Alex Sinaiko, Joe's father, died on 10 Sept. 1944 in Madison, Wisconsin. Rachel, his mother, died on 7 Oct. 1950, in Madison.

In 1958 Joe remarried to Janet Epstein. Shortly thereafter, he had a very nice house built at 3322 Terry Drive, SE, in Cedar Rapids; he and Janet lived there for the rest of their lives. She died in 1985.

When Joe was in his late '70s, after he had "retired," he decided to start a corn processing company. It was named either Corn Sweeteners or Iowa Corn Sweeteners and was located in Cedar Rapids. Les Liabo [pronounced LAI-bo], from the University of Iowa helped Joe run the company; he started as a bookkeeper and worked his way to the top. He also started a small sign business named Hawkeye Sign Co. In Florida he either started or bought a car wash. Always a businessman, these kept him active during his retirement years.

Freda, Joe's first wife, died on 2 Nov. 1964 in Cedar Rapids, and was buried there. Joe died on 3 Oct. 1988 in Cedar Rapids, Iowa. He was buried in Madison, Wisconsin. After Joe died, his eldest son, Bill Sinaiko, told Joe's life story to the *Cedar Rapids Gazette* (see issue of 16 Oct. 1988). Address: 1. 75 Maugus Ave., Wellesley Hills (near Boston), Massachusetts 02481-7614; 2. 2216 Glasgow Rd., Alexandria, Virginia 22307. Phone: 781-237-9709.

1880. Ray, Daryll E. 2000. Are multinationals now the stealth of Brazil's agricultural expansion? (Web article). *APAC Weekly Articles*. Nov. 23.

• **Summary:** "Another thing that the last few years has shown

is that increased globalization and freer trade make it easier for multinational agribusiness firms to expand their presence in both exporting and importing countries. We have dubbed this agribusiness impact as the stealth effect of freer trade, since it did not appear on the computer screens of those doing free trade analyses.”

In Brazil: “Multinational presence has increased substantially in the area of soybean processing. In 1995, for example, the top ten soybean processing firms were, in order, Ceval, Sadia, Sanbra (which in 1997 changed its name to Santista Alimentos SA.), Cargill, Incobrasa, Unilever, Bianchini, Olvepar, Coimbra, and Coamo.

“At that time, Dutch based Bunge owned Santista Alimentos S.A. In 1997 they purchased number five Incobrasa, followed by number one Ceval leaving Bunge solidly in the number one position. Bunge then consolidated the Santista Alimentos’ processing operations under the Ceval name and the retail operations of both companies under Santista Alimentos.

“In that same period, ADM entered the Brazilian market with the purchase of Sadia [No. 2], making Bunge, ADM, and Cargill the top three processors in Brazil.

“Also, ADM purchased Glencore Grain Holding with facilities in Paraguay and Brazil.” Address: Director, Agricultural Policy Analysis Center, Univ. of Tennessee, Knoxville, TN 37996.

1881. Rosen, Norman. 2000. History of Quincy Soybean Products Co. and Joe Sinaiko (Interview). *SoyaScan Notes*. Dec. 10. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Joe Sinaiko’s sister, Marcella Sinaiko, married Irving J. Rosen, Norman’s father. The Sinaiko family came from a little village or town in Russia named Mel’niki (pronounced mel-nuh-KEE), located between Minsk and Pinsk, about two-thirds of the way to Pinsk. Alex, who was in the logging business, had 12 children but only 8 survived and immigrated to the USA.

In early 1939 (in the middle of winter) Irving and his family, including his wife, Norman (age 12) and three other children packed up their old Dodge car and drove in the hail and snow from Madison, Wisconsin, to Quincy, Illinois. They purchased an old 3-story building refurbished it, and installed 3-4 expellers for soybean processing. This building was located in Quincy, next to the bridge that crossed the Mississippi River into Missouri, on the western border of central Illinois.

In either late 1939 or early 1940 Quincy Soybean Products Co. began operation at 111 S. Front St. in Quincy, Illinois. Irving was the plant manager. The Great Depression still gripped America, and especially small rural Midwestern towns like Quincy—population 18-20,000. When Irving put an ad in the local paper saying he needed factory workers, they formed a line that went around the block.

In 1939, not many soybeans were grown in Missouri. Irving Rosen was a pioneer in encouraging Missouri farmers to plant soybeans; in the early days, he traveled throughout eastern Missouri talking directly to farmers. He was very good with people, and a super salesman. The company also built its own elevators in small rural communities in Missouri; that made it easy for Missouri farmers to sell their soybeans to the company—and at a lower price. They bought soybeans mostly by truck and railroad cars. When Norman graduated from college in 1948, he went to work for his father’s company.

The other members of the Sinaiko family—such as Joe and Ike—played a major role in helping Irving’s company to get started and to survive.

Norman (age 73), Irving’s eldest son, worked in Irving’s business. After college and a stint in the navy, in the early 1950s he helped to build Quincy Soybean’s hexane solvent extraction plant at another location in Quincy. When the solvent plant was up and running, they tore down the original plant but left the storage elevators standing. When Norman left the company in 1961 they were crushing more than 100,000 bushels/day. His brother-in-law, Hal Jackson, a chemical engineer from Eastman Kodak, continued to work at the company.

Of the five Sinaiko-family soybean processing companies, Quincy Soybean was the biggest. In Sept. 1961 the Rosen family sold Quincy Soybean to Moorman Manufacturing Company, a feed manufacturer in Quincy. In 1998 ADM bought the entire Moorman company.

The A.E. Staley Manufacturing Co. in Decatur, Illinois, was one of the first soybean crushers in the Midwest. Note: In about Oct. 1922 they started crushing soybeans. Joe learned a lot about soybean processing in the very early days by going to Decatur and spending a lot of time “in the late hours of the evening hanging around the Staley soybean plant.” Joe was a smart man, and an excellent engineer. He took all the things he learned at the Staley plant and used that information to start his own soybean crushing plant in Cedar Rapids, Iowa. Max Albert was a chemical man, who came from somewhere out East. He married Anna Sinaiko.

During the late 1920s or early 1930s (hard years of the early Depression) Joe Sinaiko made a bar soap from soybean oil. Norman remembers this clearly. It had a strange yellow color and also a strange smell. It didn’t sell very well because of the unpleasant smell. Norman doubts that Joe’s children ever sold that soap.

Ike Sinaiko moved to Southern California because of his allergies and asthma. In Norwalk, he purchased an oilseed crushing plant from a Mr. Holden, the father of the actor, William Holden. Holden had crushed some soybeans in his plant before he sold it.

Norman has many articles, photos, and other information about Quincy Soybean, but he just moved into a new house and they are all in boxes waiting to be unpacked.

Address: 3007 Setting Sun Dr., Corona Del Mar, California 92965.

1882. Barboza, David. 2000. New sprouts, old doubts for A.D.M. *New York Times*. Dec. 24. p. BU1.

• **Summary:** The company's top executives say a new ADM is emerging, one "that offers not just bulk grain but also a growing array of health and nutritional products like veggie burgers, soy milk, natural vitamin E and isoflavones, a soy extract that may reduce the risk of osteoporosis." In short, ADM is looking for alternatives to commodities, and working hard to grow its nutraceutical division.

It has been two years since the "retirement of Dwayne O. Andreas, the legendary chairman who built A.D.M. into one of the world's most powerful corporations." In 1997 the board chose G. Allen Andreas, Dwayne's nephew, to replace him as CEO; in 1999 Allen moved up to chairman of the board as well. Yet today, the leadership and future direction of the company are unclear. The big question concerns Michael D. Andreas, Dwayne's son and once the heir apparent. After his three-year prison term (for illegally conspiring worldwide to fix the price of lysine) ends in 2002, will he return to ADM. And if so, what office or offices will he hold?

In 1996 ADM paid a \$100 million fine to settle the government's charges in the lysine price fixing case. It was one of the largest price-fixing settlements in U.S. history, although ADM never admitted wrongdoing, the company has been unable to rebound. Although the world is awash in vegetable oil, the European demand for soybean meal is rising due to the ban on bone meal in animal feeds. Graphs show that ADM's net income and stock price have fallen significantly since 1996.

1883. Holtzman, Rachel. 2000. Trader Joe's soy foods: Answers to commonly asked questions. Nutrition information (Leaflet). Needham Heights, Massachusetts: Trader Joe's. 3 panels each side. Each panel: 21.5 x 9 cm.

• **Summary:** Question and answer format: Contents: What is soy anyway? Why should I include soy in my diet? Does soy have fat? Some soy products say soy wards off heart disease. What does this mean? Ans: The FDA "recently approved a new health claim linking soy protein to a reduced risk of coronary heart disease. Studies show that foods with soy may help stave off heart attacks and other complications of heart disease by lowering cholesterol. The FDA says it takes 25 grams of soy protein a day to have this desired effect (as long as you also follow a diet that's low in saturated fat and cholesterol.) The product needs to meet the strict criteria to bear the new claim, but it will soon be appearing on more labels."

What are isoflavones and where can I find them? Ans: "Soybeans contain a unique compound called isoflavones, which are phyto (plant-based) estrogens. There are three

isoflavones: genistein, daidzein and glycitein. Some research suggests that isoflavones are responsible for soy's health properties. One half cup of tofu has an average of 40 milligrams (mg) of isoflavones; one cup of regular soy milk has about 20 mg; one serving of Trader Joe's Soy Protein Powder has 43 mg. Lower fat products have fewer isoflavones. Soy protein concentrates lose isoflavones during processing. Isolated soy protein (ISP) and textured soy protein (TVP) are good sources of isoflavones. Heat treatment does not appear to significantly affect isoflavone content." What is the difference between isoflavones and soy protein? How can I include soyfoods in my diet?

Ans: Trader Joe's carries soymilk, tofu, tempeh, soy nuts, edamame (soybeans), soy protein powder, meat substitutes, soybean butter. What is tofu and how can I use it? How much soy should I eat? Ans: About 25-50 grams per day. Address: R.D., Trader Joe's Nutritionist, Needham Heights, Massachusetts.

1884. ADM Protein Specialties Division. 2001. Soy: Put it on your menu. Soy7 Soy Enriched Pasta—Martha Gooch. NutriSoy (Leaflet). Front and back. Four panels each side. 28 cm.

• **Summary:** "Just how popular has soy protein become?"

"Soy is tremendously popular right now. Recently, soy protein and its health benefits were featured in *Time Magazine*, *The Wall Street Journal*, and on *Good Morning America*. *Shape Magazine* called soyfoods one of the "Big 6" food trends, and *Foodservice Director* named soyfoods a 'Hot' food menu item.

"The soy health claim: Make it apply to your menu. The Food and Drug Administration (FDA) approved the use of a health claim on the labels of products that contain 6.25 grams of soy protein per serving (and meet the low fat and no cholesterol guidelines).

"Heart disease is the number one killer of Americans. Your customers will look for meals that contain soy.

"Consumers want to eat healthy, but they don't want to noticeably change their diet. The answer? Martha Gooch Soy7 Soy Enriched Pasta."

Note: Since the soy protein health claim was introduced in October 1999, soy protein has increased in popularity.

1885. Berry, Crystal; Traber, Maret G. 2001. What is vitamin E and what does it do? *ADM Nutrition & Health Update (Decatur, Illinois)* 2(3):1-2. Jan. [35 ref]

• **Summary:** "Vitamin E is a fat-soluble antioxidant whose primary function is to protect the lipids and other vulnerable components of the cells and their membranes from oxidation. Because vitamin E can be oxidized, it is able to serve as the body's primary defender against oxidation. Although vitamin E is an essential nutrient, it has no specific metabolic function like vitamins A and K, which influence vision and blood clotting respectively, and the B vitamins, which



influence bone formation.

“Vitamin E is the collective name for molecules that exhibit the antioxidant activity of alpha-tocopherol. Eight different forms of vitamin E have been identified (four tocotrienols and four tocopherols) and are designated by Greek letters: alpha, beta, gamma, and delta. The tocotrienols and tocopherols have similar complex ring structures, but the side chains of tocotrienols are unsaturated while those of tocopherols are saturated phytol chains. Of the eight forms, alpha-tocopherol is the only form that meets the human vitamin E requirement. When alpha-tocopherol is synthesized, a mixture is formed that contains eight stereoisomers. These stereoisomers have similar antioxidant activities but vary in their physical orientations...”

Synthetic vitamin E is only half as active as natural alpha-tocopherol.

Note: ADM makes only natural alpha-tocopherol, which it extracts from soybeans—actually from soybean oil. Address: 1. Millsaps College, Jackson, Mississippi; 2. Linus Pauling Inst., Oregon State Univ., Corvallis, OR.

1886. Chajuss, Daniel. 2001. Soy protein concentrate: Processing, properties, and prospective. Paper presented at the 92nd Annual Meeting of the American Oil Chemists’ Society. 13 p. Held 13-16 March 2001 in Minneapolis, Minnesota.

• **Summary:** This paper consists of 13 PowerPoint presentation graphics / frames photocopied on 13 pages. 1. Title page. 2. Main presently available industrial soy protein ingredients for the food industry (4 types of soy flours, enzymatic treated soy products, soy protein isolates, soy protein concentrates {SPC}). 3. Soy protein concentrates (three processes: Aqueous alcohol washed “traditional” {Hayes System} concentrates—about 450,000 tonnes {metric tons} per year. Acid washed concentrate—about 20,000 tonnes per year. Hot water washed concentrate—none currently produced). 4. Aqueous alcohol washed soy protein concentrates are usefully applied in (minced meat products, minced and canned fish products, meat analogs and alternatives, bakery products, dietetic foods, infants’ formulas, calves milk replacers, fish and piglets feeds and pet foods, other food products). 5. Nutritive advantages of aqueous alcohol washed soy protein concentrate (6

advantages). 6. Technological advantages of aqueous alcohol washed soy protein concentrate (5 advantages). 7. Alcohol washed soy protein concentrate typical material flow. 8. Functional soy protein concentrates (3 types). 9. Typical gross analysis of traditional aqueous alcohol washed (“Hayes System”) soy protein concentrate (Moisture 6.0–10.0%. Protein {N x 6.25} dry basis 68.0–72%). 10. Major world processors of soy protein concentrates (table). 11. Cost and margins—Soy protein concentrates by aqueous alcohol wash. 12. Prospective—Soy protein concentrate (Steadily growing market, about 15% per year. “Functional” concentrates with tailor made properties are expected to see rapid future growth). 13. Hayes General Technology Company Ltd.

The table of major world processors of soy protein concentrates shows: ADM (Netherlands) AAW (aqueous alcohol washed). Solae LLC—Central Soya Aarhus (Denmark)\* AAW. Solae LLC—Central Soya Sogip (France)\* AAW. Solbar Hatzor (Israel) AAW. Shemen / Soyprotec Industries (Israel) AAW. ADM (USA) AAW. ADM (USA) Acid washed. Solae LLC—Central Soya (USA)\* AAW. Solae LLC—Ceval Alimentos / Bunge (Brazil)\* Acid washed. ADM China AAW.

Note: Letter (e-mail) from Daniel Chajuss. 2006. July 8. Asterisks mean that these plants that had once belonged to several firms now (2006) all belong to Solae. The main reason for the two plants using the acid wash process is that these manufacturers had soy isolate plants before they got soy concentrate plants, and this already had the equipment needed (such as a spray drier, decanter, centrifuges, etc.) to produce acid wash soy protein concentrate. The acid washing system is much less widely used today; it was a prior technology.

There is now concern among infant nutrition experts about the high levels of phytoestrogens, and their estrogenic activity, in infant formulas and foods fed to young growing people. “Thus an advantage of the aqueous alcohol wash SPC process, for certain and very special foods, is that it retains *less and not more* of the soy phytoestrogens in the final concentrate.”

Nutritional advantages of aqueous alcohol washed SPC: (1) Devoid of antigenic protein components (2S, 7S, 11S proteins, glycinin and beta conglycinin). (2) Devoid of soy “antinutrients” (hemagglutinins, phytates, non-digestible

sugars, saponins, etc). (3) Low in antiproteolytic enzyme activity (trypsin and chymotrypsin activity—Kunitz and Bowman Birk trypsin inhibitors). (4) Low estrogenic activity (low in isoflavones / phytoestrogens). (5) Balanced amino acid ratio. (6) Help to reduce the risk of coronary heart disease (CHD). All these make traditional SPC better suited for making calf milk replacers, piglets starters and fish feeds, and a more nutritive product than other industrial soy protein products, especially for the above noted purposes as well as for young human infants.

It is true today that essentially all soy-based infant formulas are made from soy protein isolates. However, in the past, they have also been made from traditional SPC. So why don't isolate makers use the aqueous alcohol wash process to make isolates (with low estrogenic activity) specifically for use in infant formulas and feeding? Because it is technically difficult and costly—although it would be an ideal product for infant feeding. “Personally I believe that ‘refolded-functional’ soluble alcohol washed SPC would be better nutritionally, safer, and a more economical product for infants.”

SPC producers do not compete (and never have competed) on the high levels of isoflavones / phytoestrogens in their concentrates, as all alcohol washed SPC has low levels of these substances. Address: Managing Director, Hayes General Technology Company Ltd., Misgav Dov 19, Mobile Post Emek Sorek, 76867 Israel. Phone: (972) 8 592925.

1887. *Soyfoods Canada Newsletter*. 2001. Founding members of Soyfoods Canada. March. p. 1.

• **Summary:** Soyfoods Canada was started just 4 months ago. The eighteen founding member companies are: ADM Protein Specialties, C&M Seeds, Galaxy Foods, Momo's Kitchen, Nutri-Passion Foods Inc., Ontario Soybean Growers, SoyaWorld Inc., Sunrise Soya Foods, Tofutti-Cholac Foods, Art Allen Consulting, Flamaglo Food Consultants Ltd., Meatless Gourmet, Moulin Aux Abenakis Inc., OntarBio, Snobelen Farms Ltd., St. Clair Agri Services Ltd., Superior Tofu Ltd., W.G. Thompson & Sons Ltd.

Note: Membership costs \$500 per year. Address: Soyfoods Canada, Box 1927, Blenheim, Ontario N0P 1A0, Canada.

1888. Stephens, Roger; Stephens, Jane Ade. ed. and comp. 2001. *Soyfoods guide 2001: Helpful tips and information for using soyfoods*. Indianapolis, Indiana: Stevens & Associates, Inc. Distributed by the Soy Protein Partners. 24 p. Illust. No index. 28 cm. [23 ref]

• **Summary:** Subtitle: “Soy to the world: Information on the health benefits of soyfoods, and our favorite recipes.”

This guide is available only on a limited basis to dietitians and health professionals.

Contents: Foreword. Keep your heart healthy: Super

soy protein smoothie. Beans, beans, good for the heart: The more you eat, the better your chances of lowering your blood cholesterol levels. Cholesterol: What's in a claim. Sample soy meal planner (4 meals a day for 5 days, to get 25+ grams/day of soy protein).

Dietary guidelines for Americans. Composition of soyfoods (table). The healthy bean: Isoflavones, heart disease, menopause and osteoporosis, allergies, diabetes and kidney disease, fat. Isoflavone content of soyfoods (table). The state of soy research. Protein content of soyfoods (table).

Soy resources: Web sites, books. Soyfood substitution chart. Descriptions of soyfoods: Traditional soyfoods, soy-based products, soy ingredients.

Recipes: Meat alternatives. Textured soy protein. Soy flour. Whole soybeans. Soymilk. Tofu. Soy snacks and smoothies. Soy—Good for your heart.

The Foreword (p. 2) states: “Welcome to the 2001 edition of the *Soyfoods Guide*. More new soyfoods than ever are hitting the mainstream market and, to help consumers appreciate the versatility and health benefits of soyfoods, we've updated the guide with new information.

“In 1999, soyfood sales reached just over \$2 billion, with soymilk sales showing a 60 percent increase. That's a dramatic change from just 20 years ago when we had a total of only \$2 million in soyfood sales.

“The surging popularity of soyfoods can be traced in part to the U.S. Food & Drug Administration's approval for a health claim on soy protein's role in reducing cardiovascular disease. For details on the health claim see page 3.

“Soy's role in chronic disease prevention continues to be a top priority for scientists around the world. Soy research continues to look promising in cancer prevention, osteoporosis and heart research.

“Additional soyfoods information can also be found at the Internet site at [www.soybean.org](http://www.soybean.org).

“The *2001 Soyfoods Guide* is distributed by the Soy Protein Partners. Partners include state soybean boards from: Alabama, Arkansas, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, North Carolina, South Dakota, Tennessee, Texas, Virginia, and Wisconsin. Industry partners include: American Soybean Association, Archer Daniels Midland Company, Central Soya Co., Minnesota Soyfoods Association, Protein Technologies International, Soy Protein Council, Soyfoods Association of North America, Soyfoods Council and the United Soybean Board.” Address: 4816 North Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 317-926-6272.

1889. Griffith, Aaron P.; Collison, M.W. 2001. Improved methods for the extraction and analysis of isoflavones from soy-containing foods and nutritional supplements by reversed-phase high-performance liquid chromatography and liquid chromatography-mass spectrometry. *J. of*

*Chromatography*, A 913(1-2):397-413. April. [22 ref]

• **Summary:** “Abstract: An improved method for extraction and analysis of isoflavones from soy protein, soy foods and nutritional supplements is presented. The method uses acetonitrile extraction without acidification, with apigenin as internal standard. Samples extracted in acetonitrile-water are diluted to 50% acetonitrile and directly injected for gradient HPLC separation on a C<sub>18</sub> reversed-phase column. This method saves significant time during sample preparation and improves accuracy and precision.” Address: Archer Daniels Midland Company, Decatur, Illinois 62521.

1890. **Product Name:** Royal Kaviar (Vegetarian–Made from Soy Protein) [Beluga, or Osetra]. Spelled Royal Caviar by March 2001.

**Manufacturer’s Name:** Royal Caviar, Inc.

**Manufacturer’s Address:** 4551 San Fernando Rd., Glendale, CA 91204. Phone: 818-546-5858.

**Date of Introduction:** 2001 April.

**Ingredients:** Purified water, organic soy protein, organic soy oil, natural gums, sea salt, natural color, natural flavor.

**Wt/Vol., Packaging, Price:** 4 oz (110 gm) glass jar.

**How Stored:** Refrigerate after opening.

**New Product–Documentation:** Two leaflets sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2001. March 8-11. One is 8½ by 11 inches, color. On the front is a large color photo of five shallow jars of the product, with all the label text legible. On the back is information about the product and company. Website: [www.royalcaviar.com](http://www.royalcaviar.com). This is an alternative to typical caviar which are the eggs/roe of the sturgeon fish. The second, titled “It’s finally here: Caviar for everyone!” states that Royal Caviar is the “long awaited dream of all gourmet and fancy food lovers.” Label with magnetic backing (refrigerator magnet for “Beluga”). The colors of this label and the ingredients are different from the label shown in the leaflet. At the center of all labels are the words “Malosol ‘Beluga.” In English, “Beluga” can refer to a large white sturgeon or the caviar processed from its roe.

Talk with Ara Agadjanian, sales manager at Royal Caviar. 2001. April 23. This product was first sold commercially in early April, and is now widely available in local Armenian stores. The company was started by Armenians and they developed the product—which is patented and has a 1-year shelf life refrigerated. The president is Dr. Armen Kazanchian. They have recently had to change the name from Black Gold Royal Caviar to Royal Kaviar since Caviar can only refer to fish eggs. It retails for about one twentieth the price of real caviar. The problem is that the sturgeon is now on the endangered species list (in the “Red Book”) in Russia, so Russian caviar production has dropped to one-tenth of what it was last year. Then, Beluga caviar (the most expensive) sold for \$1,800/lb, but the price is expected to rise 5-10 fold. To obtain real caviar,



the sturgeon fish is always killed and the belly cut open to remove the eggs. To serve Kaviar, remove from the fridge and allow contents to rise to room temperature. Lightly butter a small cracker, then top with 1 teaspoon of caviar. Enjoy.

Products with new labels sent by Ara. 2001. May 2. The words “Black Gold” have been replaced by a UPC indicia. Soyfoods Center taste test. A very creative product, consisting of hundreds of tiny black “eggs” per teaspoon. It is important to serve Kaviar as described above; when eaten straight (alone), it is too salty. An accompanying sheet shows that the soy protein in the product is ProFam 648, purchased from ADM under their documented IP [Identity Preserved] program.

1891. Stevens, Jane Ade. 2001. What is WISHH–The World Initiative for Soy in Human Health? (Interview). *SoyaScan Notes*. May 3. Conducted by William Shurtleff of Soyfoods

Center.

• **Summary:** WISHH started was started by the Illinois state soybean board. The initial real goal was to dispose of surplus soy protein in a responsible way. The program is now funded by various state soybean boards. The contractor is the American Soybean Association and the person in charge is Jim Hershey at ASA. The main soy protein products used are isolates, concentrates, and TVP. These are provided to PVOs (Private Voluntary Organizations) already working with food aid. The first meeting with PVOs was in Oct. 2000. One upcoming use is for AIDS patients in Africa—using funds left from the Clinton Administration’s Africa AIDS program. Address: Stevens & Associates, Indianapolis, Indiana. Phone: 1-800-TALK-SOY.

1892. **Product Name:** Martha Gooch Soy7 Soy Enriched Pasta [Spaghetti, Rotini, Angel Hair, Penne Rigate, Lasagna, Elbow Macaroni, Fettucine].

**Manufacturer’s Name:** Gooch Foods.

**Manufacturer’s Address:** P.O. Box 80808, Lincoln, NE 68501. Phone: 217-451-8119.

**Date of Introduction:** 2001 May.

**Ingredients:** Spaghetti; Semolina, soy protein (isolated), niacin, iron (ferrous sulfate), thiamine mononitrate, folic acid.

**Wt/Vol., Packaging, Price:** 16 oz paperboard box with see-thru window.

**How Stored:** Shelf stable.

**New Product–Documentation:** ADM Nutrition & Health Update (Decatur, Illinois). 2001. June. p. 5. “Soy7 soy-enriched pastas to take a place on supermarket shelves.” “Since the soy protein health claim was introduced in October 1999, soy protein has increased in popularity. Now consumers look for great tasting foods that help meet the FDA health claim, ‘25 grams of soy protein a day, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease.’”

ADM and Martha Gooch have teamed up to create this product. The first six varieties are sold retail and fettucine is also available to the food service industry. For more information contact Teresa Winchester at Protein Specialties. Phone: 217-451-8119. Talk with Teresa. 2001. June 13. These products were first introduced in May 2001 in Denver, Colorado. Six products with Labels and portfolio sent by ADM (Decatur, Illinois). 2001. June. Each box is a different shape and has a color photo of the prepared dish on the front panel. Green, blue, and gold on white. American Heart Association logo. FDA heart health claim. “Contains NutriSoy” logo, since each is “Fortified with soy protein.” Package design is excellent. Soyfoods Center product evaluation (by Olga Kochan). 2001. June 29. Flavor: Good. More filling than typical pasta. Evaluation by Akiko Aoyagi: She disliked both the flavor and the texture. The product contains too much soy protein. It may be good for you but it

doesn’t taste like pasta.

1893. Mohammed, Ali. 2001. The industrial utilization of soybean: Overview and potential for Egypt. In: Robert B. Dadson and Nemat A. Noureldin, eds. 2001. Soybeans in Egypt: Research, Production, Economics, Nutrition, and Health. Proceedings of The International Conference on Soybean Production under Newly Reclaimed Lands in Egypt. Bethesda, Maryland: University Press of Maryland. xvi + 201 p. See p. 189-200. Chap. 13. Held 28-29 Nov. 1998 in Egypt. [3 ref]

• **Summary:** Contents: Abstract. Introduction. Why are we looking for industrial uses for soybean? What is the goal? What are the strategies for achieving this goal? Why private / public partnerships to find new industrial market for U.S. farmers? What the government / academic side of the partnership can provide. Potential protein uses: Products for rumen foods, protein meals for aquaculture and other animals, protein meals in animal feeds, human food and ingredients, use of soy flour in breads and bread-like, dough-based products. Non-food uses of soybean.

Tables show: (1) Functional requirements of proteins added to foods. (2) Non-edible uses of soy oils, by product class. Soap, paint or varnish, feed, resins and plastics, lubricants and similar oils, fatty acids, other inedible uses. (3) Commercial applications for defatted soy flour. (4) Commercial applications for industrial isolated soy.

An “Archer Daniels Midland (ADM) processing chart” (or diagram) shows all the different products made from the soybean by ADM. Source: ADM products catalog.

A figure shows: Different types of soy flours and other soyfood products produced from soyprotein [soy protein].

On page 201 is a “Summary of the panel discussion on future soybean research in Egypt,” led by Dr. Jagmohan Joshi (Dep. of Agriculture, University of Maryland Eastern Shore) and Dr. Nemat A. Noureldin (Dep. of Agronomy, Ain Shams Univ., Cairo). Address: Virginia State Univ. Petersburg, VA, 23806, USA.

1894. Wendel, Armin. 2001. Lecithin Geschichte [History of lecithin (PowerPoint presentation)]. Hamburg, Germany. 17 p. May. [Ger; Eng]

• **Summary:** This is an award-winning presentation to the American Oil Chemists’ Society (AOCS). The original was in German; the presentation was in English.

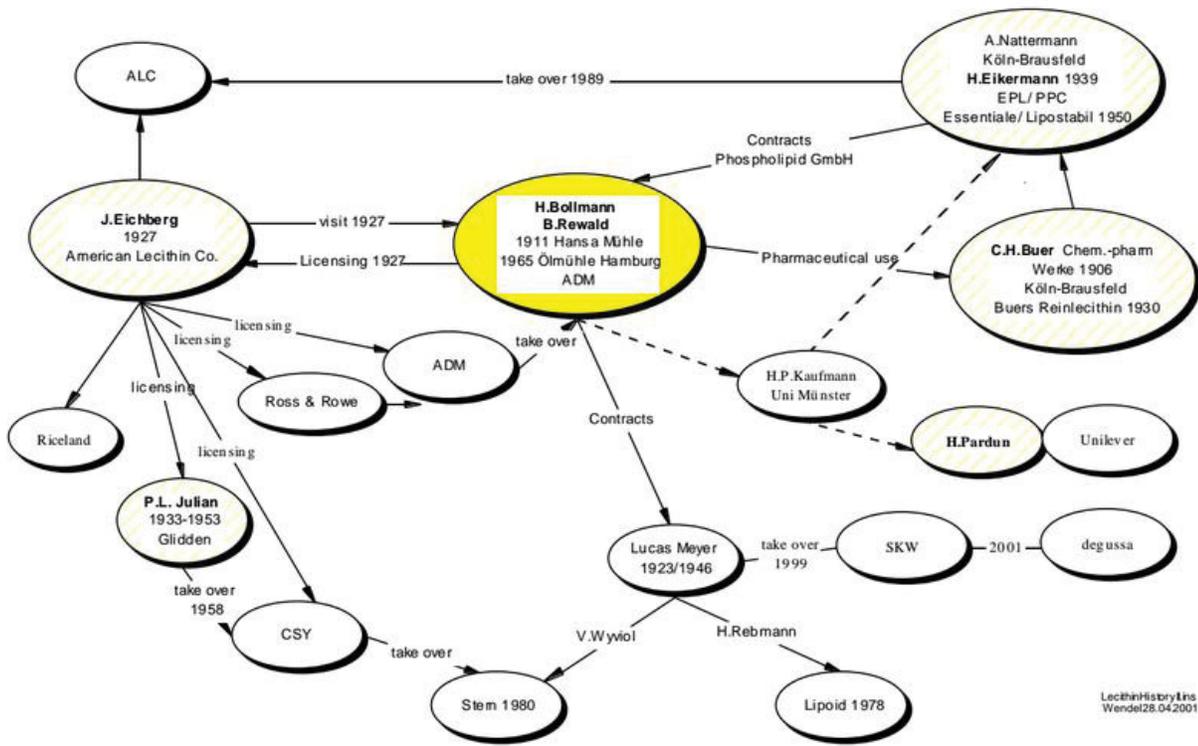
Pages 2-3: 1719–J.T. Hensing (1683-1726) isolated phosphorus compounds from the brain.

1812–L.N. Vaquelin (1755-1809) isolated phosphorus- and fat-containing compounds from the brain.

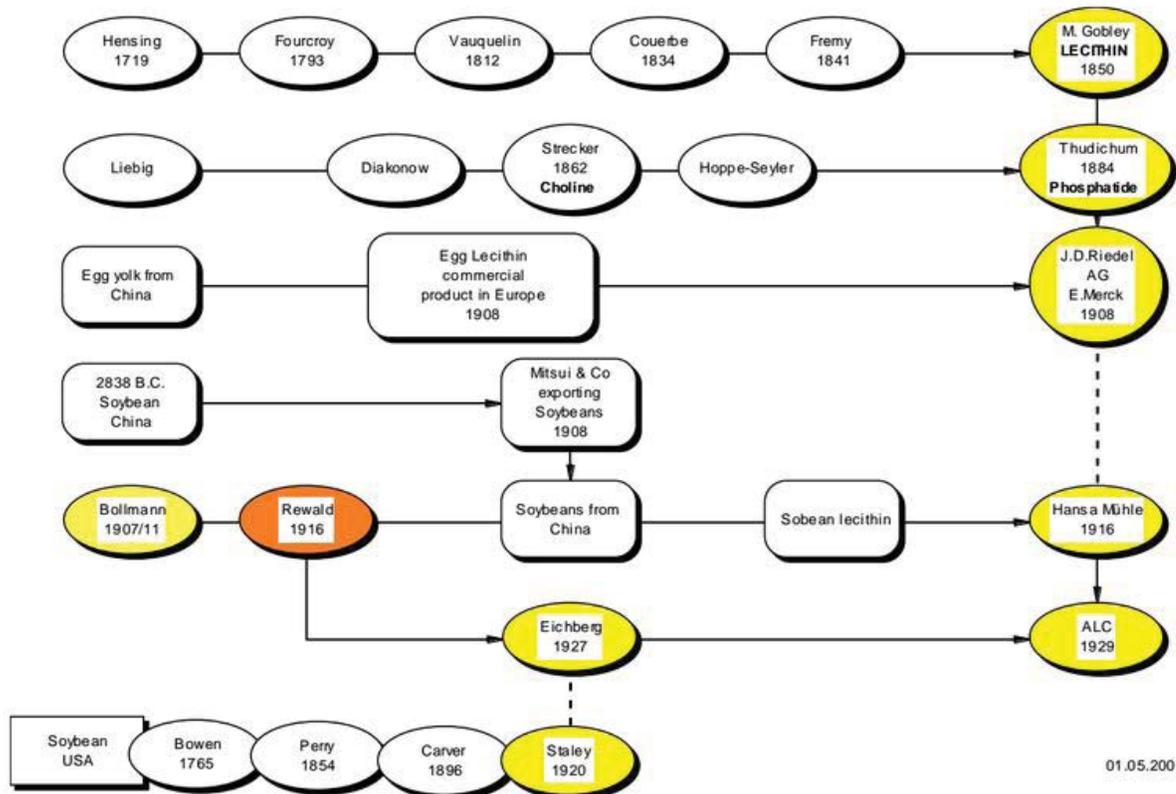
1850–Maurice Goble (1811-1876) isolated phosphorus- and fat-containing compounds from hen’s eggs; he named them lecithin.

1862–Adolph Strecker (1822-1871) obtained nitrogen-containing compounds from the bile; he named them choline.

**LECITHIN - HISTORY**



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1884–Johann L.W. Thudichum (1818-1901), who was intensively involved with phosphorus-containing lipids, shapes the concepts cephalin (cephalin) and phosphatide.

1908–Egg lecithin is a commercial product in Europe. More than 100 pharmaceuticals containing egg lecithin are on the market. The main manufacturer and distributor is J.D. Riedel AG, Berlin. His brand is Lecithol®.

Page 4: The soybean: its history in China and Europe. In 1913 in Europe about 126,000 metric tons of soybeans were processed.

Pages 5-6: The soybean: its history in the United States.

Page 7: Soybean production in metric tons at selected intervals from 1906 to 1999 in China / Manchuria and in the USA. In 1933 in Germany 1.2 million metric tons of soybeans imported from Manchuria were processed.

Page 7: Soybean production in metric tons at selected intervals from 1906 to 1999 in China/Manchuria and in the USA. In 1933 in Germany 1.2 million metric tons of soybeans imported from Manchuria were processed.

Pages 8-9: History of soybean lecithin in Europe.

1924–Hansa Muehle produced 50 metric tons of soybean lecithin.

1929–Hansa Muehle produced 800 metric tons of soybean lecithin.

By 1929 Hermann Bollmann and Bruno Rewald have published over 200 patents and scientific articles on obtaining and utilizing lecithin.

Page 10: Soybean lecithin history in the USA.

1929–Bruno Rewald first visits the USA and meets Joseph Eichberg. Together they visit U.S. oil mills to introduce and try to license the “Bollmann Process.”

1929–The American Lecithin Company (ALC) is founded by Joseph Eichberg and Hansa Muehle. They later license ADM, Glidden, and Central Soya to use the “Bollmann Process.”

Page 11: Soybean lecithin. Key patents issued to Bollmann and Rewald, 1916-1930.

Page 12: Soybean lecithin “refining” (deoilng).

Page 13: Soybean lecithin “refining” (fractionating).

1939–H. Eikermann at Nattermann makes a fraction that is 75% pure phosphatidylcholine.

1939–Percy Julian at Glidden makes “RAS” Lecithin, an alcohol soluble fraction, and “RAI” lecithin, an alcohol-insoluble fraction.

1964–H. Pardun at Unilever makes a fraction that is 30% phosphatidylcholine, brand-named Bolec. For use as a margarine emulsifier.

Page 14: From the physical to the biological function of lecithin.

Phospholipids are the main component of the membranes of plants and animals (including humans).

It is not possible to live without phospholipids.

Genes rely on phospholipids.

Page 15: From lecithin to phosphatidylcholine.

Page 16 of this presentation uses a bubble diagram to show how central Hermann Bollmann and Bruno Rewald (of Hansa Muehle and Oelmuehle Hamburg) are to the history of soy lecithin. For example:

In 1927 Joe Eichberg of American Lecithin Co. (ALC) visited Bollmann and received a license to sell Bollmann’s lecithin in North America.

In 1989 A. Nattermann (of Köln-Braunsfeld) acquired ALC.

Page 17 shows many major players in lecithin history. Address: Managing Director, Nattermann Phospholipid GmbH, Cologne, Germany.

1895. Cooper, Kim. 2001. Major soybean crushers operating in Canada today (Interview). *SoyaScan Notes*. June 11. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** There are only two major soybean crushers currently operating in Canada: ADM Agri-Industries Ltd. in Windsor, Ontario, and CanAmera Foods, Ltd. in Hamilton, Ontario. The ADM plant is owned by ADM of Decatur, Illinois. CanAmera is owned by Ferruzzi-Montedison (of Italy), which also owns Central Soya Co. (USA). So neither of the two companies are Canadian owned.

In Ontario province there are also 5-6 smaller companies that use extruders to process soybeans into oil and meal. Address: Marketing Specialist, OSG, Chatham, Ontario, Canada N7M 5L8. Phone: (519) 352-7730.

1896. *ADM Nutrition & Health Update (Decatur, Illinois)*. 2001. Health effects of phytosterols. 3(1):1-4, 6. June. [35 ref]

• **Summary:** Plant sterols or phytosterols are to plants what cholesterol is to animals; they are both key components of plant cell membranes. More than 40 different phytosterols are known to science, but relatively few are found in significant amounts in foods (incl. sitosterol, campesterol, stigmaterol) and all have a chemical structure similar to that of the cholesterol. This structural similarity is probably the reason that plant sterols lower serum cholesterol in humans, with the added advantage of “demedicalizing” the reduction.

Phytosterols are found mainly in oilseeds, nuts, and vegetable oils. Soybeans and whole soyfoods are good sources of phytosterols; 1 cup of tofu has about 40 mg of phytosterols. Yet only a small percentage of that ingested is absorbed. Whereas 40-60% of dietary cholesterol is absorbed, less than 5% of dietary phytosterols is absorbed by most individuals.

1897. *ADM Nutrition & Health Update (Decatur, Illinois)*. 2001. ADM launches new corporate logo. 3(1):4. June.

• **Summary:** The new logo features a blue and green leaf to symbolize the natural origin of all the Company’s products. It is set against a solid blue background in the shape of the previous logo. The new tagline below the logo reads: “The

nature of what's to come." According to ADM Chairman G. Allen Andreas, the new logo and tagline reflect the Company's belief that "nature holds the answer for many of the pressing problem of today's world... and reflect our corporate mission, "To unlock the potential of nature to improve the quality of life."

Note: ADM last changed its logo in 1962.

1898. Tepper, Robert. 2001. Starting Sunrise Brand Marketing Specialists in Jan. 2000. Roger Kilburn sold Harvest Direct to Dixie Diner in June 2001 (Interview). *SoyaScan Notes*. Sept. 27. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Robert started business at Sunrise Brand Marketing Specialists on 1 Jan. 2000. He started the company while still holding a job at Annie's Naturals. Technically the company was incorporated in Dec. 1999. His company started with three clients, including Harvest Direct and Good Health Natural Foods. Robert managed the sales and marketing for Harvest Direct for a little less than 18 months. He worked closely with Monty and Mary Ellen Kilburn as well as Roger; they are all great folks. Between Feb. 2000 and April 2001 Robert tripled the sales of Harvest Direct. He repackaged the products and got them into supermarket chains such as Vaughn's, Ralph's, Wegman's etc. with 6-10 SKUs (out of 17 sold by the company) in a typical chain. All the products were dry mixes. Harvest Direct's lead items into supers were soy-based pudding mixes. Roger also bought several products, including the Seitan Mix from Arrowhead Mills and the Solait brand in cans he bought from Devansoy (both very good sellers). The Taco, Bar-B-Q, and TVP Chicken Strips (the latter made in Israel; Robert's favorite product).

His 90-day contract was broken on 1 April 2001. No-one from Dixie Diner has ever called him or returned his calls. On 12 June 2001 Roger Kilburn announced the sale of his company (effective June 18) to Dixie Diner, who proceeded to manage it very poorly. Some of his brokers have dropped the line and a number of distributors have discontinued it. Harvest Direct is still alive but declining. Address: Founder, Sunrise Brand Marketing Specialists, L.L.C., 22 Wenonah Ave., Rockaway, New Jersey 07866. Phone: 973-983-7452.

1899. Archer Daniels Midland Co. 2001. Commercial products (Ad). *Soya & Oilseed Bluebook* 2002. p. 114-30.  
• **Summary:** In this multi-page black-and-white ad, addresses are also given for ADM offices in England, Australia, and Japan. Products are described in tabular form under the following categories. For each product is given: Name, grade, assay, granulation or concentration, and applications. Categories: Citric products. Polyol products. Lactic products. Other products: Glucono delta-lactone, xanthan gum. Complexed lecithins. Purified lecithin. Standard lecithins. Modified lecithins. Ultra filtered deoiled lecithins. Capsule

grade lecithins. Distilled monoglycerides. Distilled propylene glycol monoester. Natural-source vitamin E. Novasoy isoflavone concentrate. Phytosterols—all vegetable. Canola sterol esters. Isolated soy proteins (Pro-Fam {20 types} and Ardex {3 types}). Soy protein concentrates (Arcon {9 types}, Arcon T {textured soy protein concentrates, 2 types}, Maicon T {for vegetarian foods}). TVC (Textured vegetable protein chunks and crumbles, 60% protein, for vegetarian foods and meat applications). TVP (3 types). Nutrisoy (defatted soy flours, flakes, or grits, 5 types). Soylec and Nutrisoy (3 types, premix product of lecithin and Nutrisoy). Isoflavones (Novasoy 400, 40% isoflavones). Refined vegetable oils. Address: P.O. Box 1470, Decatur, Illinois 62525. Phone: 1-800-553-3941.

1900. Archer Daniels Midland Co. 2001. ADM this quarter: Fourth quarter report to shareholders. Decatur, Illinois: ADM. 1 p. Front and back. Glossy, color. 28 cm.

• **Summary:** ADM earned \$0.09 per share in the first quarter. Net earnings for the 12 months ended June 30, 2001 were \$383 million compared with \$301 million in last year's 12-month period. Address: Decatur, Illinois.

1901. Soyatech, Inc. 2001. *Soya & Oilseed Bluebook* 2002: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 444 p. Sept. Comprehensive index. Brand name index. Advertiser index. 28 cm.

• **Summary:** On the cover is a rectangular color photo of a soybean in a micrometer, next to a pair of silver calipers, edamame, and exotically colored soybeans—surrounded by a wide, colorful border on a blue background. Across the bottom: "The ultimate industry resource: In print and online. [www.soyatech.com](http://www.soyatech.com).

On the inside front cover is a color ad from Tetra Pak, showing soymilk, its processing and packaging. On the first page is a full page color ad from Vigan Engineering s.a. of Belgium. "Ports and silos equipment—Ships and barges, loading / unloading." On the back cover is color ad from ADM titled "The nature of what's to come." The imaginative collage features edamame in a Chinese paper takeout box with chopsticks on one side, all inside a wok.

The Foreword states: "Our mission is to create an information platform that supports the expansion and development of the soybean and oilseed industry for all people, in all countries." Soyatech's eNews service brings industry-wide news stories to thousands of individuals and companies. "Exciting new multi-client and research studies are slated for production throughout the year." Soyatech will also "be more involved with the creation of symposiums and other opportunities to allow the exchange of ideas, technology, and innovation between industry members." Address: 7 Pleasant St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

1902. *The Non-GMO Source (Fairfield, Iowa)*. 2001. ADM looking for non-GMO soybeans. 1(7):9. Sept.

• **Summary:** “A representative from ADM recently said that the company is in the market for non-GMO soybeans. While Roundup Ready soybeans are approved in Europe, many of ADM’s customers say they need non-GMO beans. Speaking at a meeting sponsored by the Grain and Feed Association of Illinois, the representative said ADM has a greater demand for non-GMO soybeans than they can fill from available supplies. ADM/GROWMARK is paying a premium of 20 cents per bushel to producers and five cents to elevators.

“(Source: *Grain journal*).”

1903. Funk, Linda. 2001. The Soyfoods Council (Interview). *SoyaScan Notes*. Oct. 9. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The Soyfoods Council was created by the Iowa Soybean Association. Linda began work on 24 Sept. 2000 and she is managing the “edible budget” of the Iowa Soybean Promotion Board (the one with checkoff funds). The “edible budget” comes under the Marketing Committee. She reported to them every time they meet.

Her first soy event was when the Wisconsin Soybean Association asked her to do a foodservice training event, in June or July of this year. She had Toni Sakaguchi come out from Culinary Institute of America (CIA) in St. Helena, California; they have refined the presentation since then. People absolutely love Toni; she is warm, she knows the products and the principles of cooking, and she is a real professional. She is credible and chefs really like learning from her. She had some wonderful beef dishes and fish dishes. She can answer all their questions. “She’s been fabulous.”

Linda has finished her mission statement, objectives, etc. and is about ready to send out membership letters. When she has members, mostly soy processors and soyfoods manufacturers, then she will figure out how to structure the new organization.

She gets some funding from the Iowa Board and some from the Iowa Economic Development Group—which is interested in adding value to Iowa commodities. Linda has worked with Midwest Harvest (Tom Lacina and the Soy Sisters). One of her missions is to find ways to introduce soyfoods to mainstream America. She hopes to use specific, fun ways, that don’t make the foods weird or strange or scary. “Plunking a pound of tofu in front of a soybean farmer won’t get you anywhere. We have to find ways to introduce soyfoods by combing them with foods that people know and love. It doesn’t have to be vegetarian. It can be a ‘combo,’ such as tofu and cream cheese; it doesn’t have to be ‘all or nothing.’ For the farmers who are the Iowa Board, I’ve started making desserts. They have to be believers before they will approve and fund new projects. We’ve done some very interesting, fun stuff and people are starting to go ‘Wow.

This can taste good.” But a few farmers on the board have told her that what she’s doing is all fine and cute, but “Don’t you dare take the meat off the center of the plate!”

Linda plans to do a seminar at the CIA in St. Helena on December 3-5. Thirty hand-picked chefs from across the USA will attend, and the Soyfoods Institute will pay all their expenses. United Soybean Board will fund that program. Linda has to raise the funds for each event; she had never been a fund-raiser before she accepted this job.

Linda has a two-pronged approach: (1) Mainstream consumers—Figuring out how to help them start introducing soy into their diets. (2) The foodservice channel—including restaurants, onsite (such as corporate dining rooms). She will start by working with the “fine dining chefs,” the ones that people look up to for trends and ideas. Then have it be a trickle-down effect. She believes that getting the foodservice industry involved with help in introducing soyfoods to mainstream Americans.

The most recent seminar was at Kendall College in Evanston, Illinois, near Chicago. Toni Sakaguchi of the CIA did a great job. She demonstrated fun ways to start adding soy flour to recipes chefs were already using—to batters and breads, for example. Toni also used tofu in various recipes. The CIA has developed what they call their “flavor principle package” which enables you to apply flavor principles to whatever recipes you are developing.

Linda is well aware of edamamé; she talked about it this morning on a radio show. She believes in serving edamamé in the Midwest mixed with familiar foods. She served edamamé in the pods to a farmer’s group and “they were fascinated by it and thought it was quite delicious.” But they are not going to use it as a new type of snack.

Linda grew up on a farm in Wisconsin. Her dad is a farmer. She understands the mentality of farmers. She worked on Wisconsin Cheese for many years. She started with the Wisconsin Milk Marketing Board in 1988 and headed up the foodservice area. One of her main projects was to get American chefs and mainstream Americans to believe that Wisconsin cheese-makers could make specialty cheese that were as good as their imported counterparts.

One discussion with chefs is “Do you scream it on your menu or do you soft-sell it?” Linda strongly favors the soft-sell approach—until people are really comfortable with it. Many people she talks to, from consumers to food professionals, still turn up their nose at soy. If you start probing as to why they think this way, many of them go back to soy in a school lunch program or with hippies.

Linda has been writing a column for the *Iowa Soybean Review*, a publication of the Iowa Soybean Association. She includes recipes, and advises cooks not to tell their family what they are doing until they say “Wow, was this good!” Then you can tell them.

Linda eats Harmony cereal each morning, and finds that many others also like it. Her favorite recipes: (1) Molasses

glazed pork tenderloin, with edamame. (2) A combo tofu cheesecake or dessert, with about half cream cheese; it is lower in calories, saturated fat, and cholesterol plus other soy health benefits. (3) Pizza with edamame in the topping; she is working with a commercial frozen pizza company on this. (4) A seven-layer bar with TVP layered and baked (like a granola bar, developed by the Soy Sisters).

Linda has to dispel those preconceptions. Anderson-Erickson in Des Moines came out with the first dairy yogurt that contains soy protein; it's wonderful! The woman who is president of this family-owned business, Merriam Erickson-Brown, is very forward thinking. Linda has done a lot of press on her. The product has been very successful. *Cooking Light* magazine (Birmingham, Alabama) has published many excellent articles and recipes on soy—especially tofu. Jill Melton, their senior food editor, is Linda's friend, and they talk a lot about introducing people to soy. They had a chocolate mousse on the cover of a recent issue. One issue is taking soy out of the "Asian only" category and introducing it into French or Mexican recipes—without making it appear weird or contrived.

A year ago Linda never ate soy; she came from the dairy industry and it was the arch-enemy. She now tells the dairy industry that these two industries can and should work together.

Marv Wilson, who is a fine actor, does an impersonation of Henry Ford, focusing on Ford's work with soybeans. He does this for soybeans farmers, and anyone who asks him. "It's fascinating." Address: Des Moines, Iowa.

1904. *SoyaScan Notes*. 2001. Historical perspective on ADM and soy protein isolates (Overview). Oct. 26. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** The following information is from one or more long-time and very well informed insiders in the soy protein isolate industry; they have asked to remain anonymous. ADM started making edible soy protein isolates at a very late date. ADM is a very technologically oriented company. They never put much effort into selling their isolates, even though that little Protein Products Division has always been the pet of Dwayne Andreas. ADM got into edible isolates after Central Soya shut down their isolate plant in Chicago because it was causing too much pollution. The plant had formerly been an old Al Capone brewery, within walking distance of Lake Michigan. ADM actually bought the plant from a junk dealer. ADM has a small but full-time staff that monitors used equipment nationwide, so that when they want to start a new plant they can buy the equipment inexpensively.

When ADM bought the plant, they hired most of the same people who had worked there previously. Within about 2 months they were back up to speed producing edible isolates. They used their technical expertise to get the production line operating at ADM's high standards,

so the product quality was stabilized at higher levels and effluents were decreased. ADM renamed Promine to Ardex and continued the same line of four isolate products. Thus Promine D (Central Soya's flagship isolate) became Ardex D, etc. ADM improved the quality of the products somewhat, but they did not introduce any new products, so they fell further and further behind Ralston Purina and Grain Processing Corp. (GPC, whose main problem was that their volume was too low).

ADM tried to compete by being a very, very efficient manufacturer. Ralston at that time, for example, had a problem with the inconsistency of their bulk density—which was a problem for the "muscle powder market." ADM quickly got uniform bulk density, consistent flavor, no dark particles, and good bacteriological quality. They priced their products a little below the going market price because they were a new entrant, but not much—because the profit margins were already slim due to excess capacity in the industry.

In June 1988 ADM bought GPC's edible isolate business and shut down the plant—in part to get rid of this excess industry capacity and in part because ADM considered GPC's diverse line of Pro-Fam isolates to be of superior quality. ADM's isolate line now consisted of many Pro-Fam products and a few of the old Ardex products. Soon ADM built a new isolate plant in Decatur and shut down the Chicago plant. ADM was now becoming a serious competitor to Ralston's new PTI division.

A large quantity of these isolates went into baby foods, soy-based infant formulas, diet foods, and muscle powders. The industry always had high hopes for isolates in meat applications, but the USDA was very suspicious of them because, as purified proteins, they were hard to detect in meats and they could bind a lot of water. Consequently USDA required a titanium dioxide tracer and spoke of potential "adulteration with water."

Moreover, a huge market was developed in Eastern Europe, where Communist administrators mandated its use in all processed meats. The key to capturing this market was having the lowest price product; there was little motivation to improve quality.

About 5-6 years ago ADM started putting a lot of effort into their soy isolate lines. They developed a line of new products that were functionally superior—including the Pro-Fam 890 series and 825 series (to add to fruit juices). ADM and PTI make many different isolate products in terms of functionality, solubility, etc. But over the past 20 years PTI has made great progress in every aspect of isolate quality (viscosity, bulk density, dispersibility, flavor, color, etc.), new product development, manufacturing, and marketing, so that they have come "to absolutely dominate the market" with approximately 90% market share. In part, this was because PTI could focus all of its attention on isolates—since that was their only product line. ADM, by contrast, has hundreds of other products.

One of our sources is one of the oldest operating distributors of ADM protein products. He is a recognized expert in applications of soy proteins. He has heard (industry scuttlebutt) that Cargill might come into the isolate field, and that they might buy PTI. DuPont paid much too much for PTI (something like 5 times annual sales), so they have been cutting costs furiously and ruthlessly. They have dismissed their entire R&D staff and cut back even on their sales staff. "Anyone would be insane to get into this market with a brand new plant."

The world market for soy isolates is growing nicely. When ADM built its two new isolate plants in Decatur, the production capacity was sold out before either one was finished. They also have a plant in Europe. He does not think that the FDA heart health claim has much of an effect on the market for isolates. "People used to say that soy was really good for you, but..." Now things have changed, and they buy soy. For example, USDA is now actively encouraging the use of soy in the school lunch program (especially textured concentrates since kids won't eat things unless they taste good) and as an extender in meats. Some new isolate plants in China have started production and disrupted the international market—even though the isolate quality is poor.

"TVP—which we all thought would revolutionize the world's diet—has been a bust. Just a bust!" There were 11-13 manufacturers of textured soy flour 20 years ago. Now there are only a few, a majority of it goes into pet foods (the TVP chunks look like chunks of meat), plus commercial burritos, pizza toppings, meat alternatives, etc. but the profit margins are low.

The following are ADM prices F.O.B. plant, per truckload (based on records from files): Recent ADM prices: Soy protein concentrate: 1989–54 cents/lb. 1993–60 cents/lb. 1996–69 cents/lb. 2001–73 cents/lb. Soy protein isolate: 1989–121 cents/lb. 1993–121 cents/lb. 1996–140 cents/lb. 2001–151 to 159 cents/lb. PTI prices would typically be 2-3 cents/lb higher.

1905. AGP—Ag Processing Inc a cooperative. 2001. Annual report. 12700 West Dodge Road, P.O. Box 2047, Omaha, Nebraska 68103-2047. 28 + 20 p. 28 cm.

• **Summary:** Net sales for 2001 (year ended Aug. 31) were \$1,788.716 million, up 9.0% from \$1,640,838 million (revised downward from \$1,961,736 million) in 2000. Earnings from continuing operations (before income taxes): \$46.038 million, up 2.70 fold from the \$17.069 million (revised downward from \$20.908 million) in 2000.

This year AGP has a new CEO, Martin P. Reagan. "In fiscal 2001, AGP began to divest its U.S. and Caribbean feed operations, its swine business, and its Sherman, Texas, refinery, ending its relationship with Archer Daniels Midland (ADM) in these businesses." "Through a transaction with ADM in fiscal 2001, AGP divested itself of Consolidated Nutrition which was jointly (50-50) owned by the two

companies. In a related transaction, AGP acquired ADM's share of Masterfeeds, the Canadian feed operation that had been equally owned by the two companies." Also an "expansion of the Soybean Component Premium Program [to include protein], and an increase in bio-fuel visibility and growth." AminoPlus is "AGP's high performance dairy supplement" [bypass soy protein].

Contains color photos of (1) Leiting and Lindsay. (4) The board of directors. (5) Management staff. Contains many color photos. AGP now has a website listed on the back cover: [www.agp.com](http://www.agp.com). Address: Omaha, Nebraska. Phone: (402) 496-7809.

1906. Archer Daniels Midland Co. 2001. Annual report: Unlocking the potential of nature—Maximizing value. P.O. Box 1470, Decatur, IL 62525. 44 p. Oct. 28 cm.

• **Summary:** Net sales and other operating income for 2001 (year ended June 30) were \$20,051 million, up 7.7% from 2000. Net earnings for 2001 were \$383.3 million, up 27.3% from 2000, but far below the recent peak of \$796 million in 1995. Shareholders' equity (net worth) is \$6,332 million, up 3.6% from 2000. Net earnings per common share: \$0.58, up 28.8% from 2000.

ADM has a new mission statement: "To unlock the potential of nature to improve the quality of life." This is leading the company to "create added value in our core businesses..."

The section on "Oilseeds" (p. 6-7) states: "Currently more than 40 products are co-branded with ADM's NovaSoy isoflavone logo highlighted on the package. Soy meal can also yield soy isolates and concentrates, the basis for ADM's NutriSoy brand of soy protein. Presently more than 17 co-branded products highlight their NutriSoy content, including ADM's Soy 7<sup>TM</sup> pasta, a protein enriched product that qualifies for the FDA approved health claim.

"Soy oil is an excellent natural source of Vitamin E, which is twice as potent as the commonly used synthetic Vitamin E. ADM's d-Alpha logo for natural-source Vitamin E supplements received a favorable initial response by retailers in fiscal 2001..." Phytosterols and biodiesel are growing markets. "Interestingly, the original diesel engine developed by Rudolf Diesel in the 1890s used an unusual fuel: peanut oil."

Also accompanying the annual report is a "Notice of Annual Meeting." G. Allen Andreas, age 57, Chairman of the Board and CEO, had a 2000 salary of \$2,398,480.

Note: According to a multi-page ADM ad in the *Soya & Oilseed Bluebook 2002* (published Oct. 2001), the company makes 16 isolated soy proteins under the Pro-Fam brand, 2 isolated soy proteins under the Ardex brand, 7 soy protein concentrates under the Arcon brand, 2 textured soy protein concentrates under the Arcon T brand, and TVC (textured vegetable protein chunks and crumbles); TVP is not mentioned. Address: Decatur, Illinois.

1907. Business Trend Analysts, Inc. 2001. The market for fats and oils: Past performance, current trends, and strategies for growth. 2171 Jericho Turnpike, Commack, NY 11725. 549 p. Price: \$1,495. \*

• **Summary:** Contents: 1. The overall report. 2. The market for vegetable oil: The overall market, the market for soybean oil, for corn oil, cottonseed oil, sunflowerseed oil, peanut oil, canola oil, olive oil, other vegetable oils (incl. linseed oil, coconut oil, palm oil and palm kernel oil, tall oil, tung oil, castor oil, sesame oil, cuphea, hemp oil, argan oil). 3. The market for animal fats and oils. 4. Edible end-use markets for fats and oils. 5. Inedible end-use markets for fats and oils. 6. The impact of fat substitutes. 7. Industry structure and economics. 8. Competitor profiles: Archer Daniels Midland, Cargill, Cenex Harvest States Cooperatives, ConAgra Foods, Philip Morris Companies, Procter & Gamble, Unilever.

In Chapter 2, “The market for vegetable oil,” is a long section titled “The market for soybean oil.” Contents: Market overview (1990-2000, 2001E, 2002E, 2010P). Sales and consumption. Production trends. Foreign trade activity. Polymer coatings for seeds. Statistical tables: (1) U.S. manufacturers’ sales of soybean oil. (2) Total U.S. consumption of soybean oil. (3) Consumption of soybean oil: Edible vs. inedible end-uses. (4) Consumption of soybean oil in selected edible products: Salad and cooking oils, baking and frying oils, margarine, other edible products. (5) Consumption of soybean oil in selected inedible products: Resins and plastics, paint and varnish, other inedible products. Soybean oil production, prices, and supply. Soybeans: Supply, crushings, production, prices, and acreage planted and harvested. Worldwide production of soybean oil. Exports, imports, and U.S. apparent consumption. Exports as a percentage of U.S. manufacturers’ sales. U.S. exports and imports by country. Average dollar prices for exports and imports. Address: Commack, New York.

1908. *Nutrition Business Journal (San Diego, California)*. 2001. Functional Foods V. 6(10):1, 3-8. Oct.

• **Summary:** The U.S. retail food market in the year 2000, worth \$495 billion dollars, is divided into the following eight categories, listed in descending order of size: Meat, fish and poultry \$108.7 billion. Beverages \$88.9 (not incl. milk or liquor). Fruit and vegetables \$84.9. Bread and grains \$59.7. Dairy \$53.4. Packaged/prepared foods \$51.7. Snack foods \$30.0. Condiments (incl. oils, dressings, spreads, sauces, spices, sweeteners) \$17.6.

The top five U.S. functional food companies in terms of U.S. functional food sales (\$ million) are Pepsico U.S. \$3,530, General Mills \$1,400, Kellogg \$1,370, Kraft \$780, and Coca-Cola \$650. Smaller top companies include: Clif Bar \$130, Stonyfield Farms \$100, Imagine Foods \$90, and White Wave \$90. 90% of Imagine Foods’ total sales come from functional foods, compared with 100% for White Wave.

Imagine Foods launched a big campaign in 2001 to market Organic Power Dream Soy Energy drinks to athletes and fitness enthusiasts.

“Soy is the functional food star of the last two years with an estimated 300 soy products introduced in 2000 alone.” Ingredient suppliers in the field of soy are now bearing heavy responsibility for functional food research. ADM, Cargill, Central Soya, and Protein Technologies International (PTI, owned by DuPont) are all investing in research, education, and consumer outreach—plus innovation in processing and new ingredients. One of the largest uses of soy protein is SlimFast, but the health benefits of soy are not the shopper’s first consideration.

1909. *Nutrition Business Journal (San Diego, California)*.

2001. Suppliers refine next generation of soy ingredients: Suppliers market to consumers and improve taste, texture, and functionality of soy ingredients. 6(10):18-20. Oct.

• **Summary:** Cargill, with sales of \$49 billion/year, has long been a supplier of soy flour and textured soy flour. But it is a relative newcomer to higher-end soy ingredients. Last year Cargill announced that it is expanding into soy protein isolate, according to Ted Ziemann, president of Cargill Nutraceuticals. According to Kevin Marcus, director of marketing for Cargill Soy Protein Products, Cargill now has an operational pilot plant and is working with about 20 food, sports nutrition, and weight loss companies on full-scale production—which is slated for 2003.

In the summer of 2001 Cargill Nutraceuticals officially launched AdvantaSoy isoflavones, which is available in regular and non-GMO versions, is not produced using solvent extraction, and keeps the isoflavones in their natural state. Meanwhile the Soy Protein Products group is developing six isolates and six process patent applications.

Today, about 150-200 million pounds of soy protein isolate are used in the USA—according to Marcus. At \$1.65 to \$2.10 per pound, this would be worth an estimated \$280 to \$375 million.

ADM, the world’s largest supplier and processor of soybeans, has been selling Novasoy, which contains 40% soy isoflavones. Increasingly ADM is turning its attention to consumer marketing, by branding its products—according to Tony DeLio, president of ADM’s Natural Health and Nutrition, whose focus is to identify, create, and develop nutraceuticals and functional food ingredients, backed by solid science. ADM has developed the NutriSoy consumer trademark. Today Novasoy has about 50 branding partners in the USA. DeLio estimates worldwide soy isoflavone sales at wholesale to be \$30-40 million worldwide. ADM is also making water dispersible phyosterols and sterols under the CardioAid trade name.

A sidebar titled “Large corporations dominate soy proteins market” contains estimated worldwide manufacturers’ sales and market shares compiled by ADM:

Soy flour, comprising about 25% of the value of the market for soy protein products, has annual sales of about \$388 million. Cargill and ADM each have about one-third of the market.

Soy protein concentrates: \$487 million. ADM is the leader with about 48% of the market, followed by Central Soya, then Ceval Alimentos of Brazil. The largest end uses for concentrates are meat extensions and alternatives (49%), animal feed/pet food (30%), functional foods (5%), and dairy replacement/infant foods (5%).

Isolated soy proteins: \$651 million. Protein Technologies International (PTI) is the leader with about 67% of the market, followed by ADM (19%) and Ceval Alimentos (8.8%). The largest end uses for isolates are infant foods and dairy replacements (40%), meat extensions and meat alternatives (20%), and use in other functional foods (10%).

ADM believes that soy concentrate's share of the market may slowly decrease due to strong demand for isolates and improvements in isolate quality. Strong demand for isolates in the USA and abroad lead to projections that this product will grow from 43% of the soy protein market in 1998 to 45% by 2002.

Note: This is the earliest document seen (July 2020) that mentions "Cargill Nutraceuticals."

1910. Endres, Joseph G. ed. 2001. Soy protein products: Characteristics, nutritional aspects, and utilization. Revised and expanded ed. Champaign, Illinois: AOCS Press. ix + 53 p. Index. 23 cm. [106 ref]

• **Summary:** Contents: 1. Historical aspects. 2. Definitions and methods of preparation. 3. Protein quality and human nutrition. 4. Health and soy protein. 5. Functionality of soy proteins. 6. Uses in food systems. 7. Regulations regarding usage. 8. Future considerations.

Soy Protein Council member companies: ADM, Central Soya Co., Cargill. Note that Protein Technologies International is not a member. The Introduction (p. 1) states that more than 1 billion pounds of soy protein products are produced for human consumption each year in the USA—about 4 pounds per person.

Note: This is an updated and expanded edition of: Soy Protein Council. 1987. "Soy protein products: Characteristics, nutritional aspects and utilization." 43 p. Address: PhD, The Endres Group, Inc., Fort Wayne, Indiana. Phone: 219-625-3616.

1911. *ADM Health & Nutrition Update (Decatur, Illinois)*. 2001. Continued interest in soy products, according to a recent survey. 3(3):5. Dec. [1 ref]

• **Summary:** The following are results from a survey conducted for the United Soybean Board, based upon a nationwide telephone of 800 adults 18 years and older.

Consumers who believe soy oil is healthy 88%.

Consumers who are aware of tofu 82%.

Consumers who are aware of soymilk 78%.

Consumers who use soy products at least once a week 27%.

Consumers who believe soy products are healthy 69%.

Consumers who are aware of specific health benefits of soy 39%.

1912. Archer Daniels Midland Co. 2001. ADM this quarter: First quarter report to shareholders. Decatur, Illinois: ADM. 6 p. Glossy, color. 28 cm.

• **Summary:** ADM earned \$0.20 per share in the first quarter. Net earnings for the 3 months ended Sept. 30 were \$131.6 million in 2001 vs. \$109.4 million in 2000. This issue contains a 1 page (front and back) insert titled "Dwayne O. Andreas retires from board of directors." It contains 6 color photos plus a black-and white photo of Dwayne Andreas talking with President Ronald Reagan. The text begins:

"For the first time in 35 years of ADM's history, the slate of directors does not include Dwayne Andreas. Under his leadership ADM launched its drive into agribusiness across the globe. He forged a key position for ADM as the single most important catalyst for the shift to a global food system. The opportunities that Mr. Andreas seized across the globe brought new partners and customers from Europe, Russia, China, and throughout Latin America. Mr. Andreas set the stage and was the principal architect of the global matrix of businesses that ADM enjoys today. As an advisor with the unique confidence of scores of world leaders and as a friend of the farmer, he built bridges across continents and became a benefactor to all the world's citizens. Mr. Andreas' relentless fight to end hunger and malnutrition brought new prospects for peace and democracy in every corner of the world. The board of directors is honored to have Mr. Andreas serve as chairman emeritus this coming year and looks forward to sharing the wisdom of his counsel as we enter a new chapter in ADM's history." Address: Decatur, Illinois.

1913. Lyons District [Cameron], Calhoun County, South Carolina. 2001. Commercial-industrial appraisal card: Tax map 150-11-03-01. Calhoun County, South Carolina. 1 p. 28 cm.

• **Summary:** Note 1. We know from other documents that: (1) In March 1963 Southern Soya Corp. of Cameron was running a soybean processing plant (making soybean oil and meal) at Cameron, South Carolina (*Soybean Blue Book*. 1963. p. 81). They acquired a portion of this land for \$21,000 from David K. Summers, Jr. and Jacob William Summers, who inherited it from their mother, Olivia B. Summers (deed 1951 dated 6 May 1970, and deed 1954 dated 31 March 1971).

In about Aug. 1972 there had been an explosion and fire at that plant. Southern Soya Corporation of Cameron rebuilt the plant, and got it up and running again.

1973 July 26—Allied Mills purchased this piece of land, 15.02 acres, from Southern Soya Corporation of Cameron for \$406,000 (deed 4143). This deed states that Southern Soya Corporation of Cameron was previously named Central Grain Company, Inc.

1974 Jan. 4—Allied Mills was paid \$10.00 by Calhoun County, apparently for a name change. Note 2. From other documents we know that in 1974 Allied Mills became a wholly owned subsidiary of Continental Grain Co. Thus, Allied Mills may have changed its name to Continental Grain Co.

1987 Nov. 23—Calhoun County sold this land (now 14.97 acres) to Continental Grain for \$1.00 and bonds (deed 12291). Note 3. This a financial instrument that enables companies to borrow money through “bonded indebtedness.” A governmental bond, which is an economic development incentive, is issued. The company then deeds the property to the county. When the company had paid off the debt to a bank, the county is obligated by contract to deed the property back to the company for \$1.00. The affidavit with this deed states that the County issued its First Mortgage Industrial Revenue Bonds on 1 Oct. 1973; these were used to finance the construction of a soybean processing facility, which was leased to the company.

1987 Nov. 20—Continental Grain Co. sold this land to Central Soya Co., Inc. for \$5.5 million a few weeks after they had bought it from Calhoun County (deed 12293).

1987 Nov. 24—Central Soya Co. sold the land to Archer Daniels Midland Co. [ADM] for \$6.0 million (deed 12306). Thus Central Soya made \$500,000 in 4 days just by owning this land.

2001 Jan. 31—Archer Daniels Midland Co. sold the land to Golden Kernel Pecan Co. for \$80,000 (deed book 160, p. 57). In the meantime, ADM had shut down the soybean processing plant and cleaned up the property.

2001 Dec. 31—The name on the deed was changed from Golden Kernel Pecan Co., Inc. to David K. Summers, Jr. and J. William Summers (the owners of the pecan co.) for \$5.00 and valuable consideration (“V.C.”).

1914. Breier, Davida Gypsy; Mangels, Reed. comps. 2001. *Vegetarian & vegan FAQ: Answers to your frequently asked questions*. Baltimore, Maryland: The Vegetarian Resource Group. 272 p. Illust. Index. 23 cm. [69 ref]

• **Summary:** Contents: 1. Most frequently asked questions (incl. How many people are vegetarian? Detailed results of polls conducted in 1994, 1997, 2000). 2. Vegetarianism in daily life (incl. How do you pronounce “vegan?” Ans: VEE-gun. Who are some famous vegetarians? What is the history of vegetarianism?). 3. Nutrition (incl. I need impartial, major scientific studies that show a correlation between a vegetarian diet and disease prevention? Gas caused by eating soy). 4. Food ingredients (incl. Soy cheeses, soy lecithin). 5. Recipes (incl. many recipes for tofu, tempeh, soy whipped

cream, chocolate pudding with soymilk, soy yogurt, wheat gluten / seitan, TVP). 6. Vegetarian products (incl. What is seitan? Where can I buy seitan? What is tempeh? What is TVP? Where can I buy TVP? What is tofu? What do I do with it? Alternatives to dairy products. Vegan eggnog. Soy candles). 7. Cooking and baking (Tofu, draining tofu, tofu cream cheese, Tofutti). 8. Travel and restaurants. 9. Veggie kids (Soy-based infant formula. Phytoestrogens in and safety of soy infant formula). 10. Soy (p. 168-76; contains good, balanced responses to the anti-soy articles by Fallon and Enig, p. 173-76). 11. Vegan concerns. 12. Unique questions. 13. Questions about VRG. 14. Appendix: Quick guide to fast food. Quick guide to helpful websites. Protein content of selected vegan foods. Calcium content of selected vegan foods. Iron content of selected vegan foods. Daily values. A senior’s guide to good nutrition. Eat better, perform better, sports nutrition guidelines for the vegetarian. Why is wine so fined? Handy guide to food ingredients. List of suggested reading: Vegetarian cookbooks, vegetarian families, vegetarian travel. School foods information. Feeding plans for infants and toddlers. VRG publications, resources, and tabling materials.

Soy-related questions and answers outside of Chapter 10: Gas and bloating after eating soy (p. 64). Casein found in many soy cheeses (p. 80). Soy lecithin (p. 85). Recipes: Tofu dill dip (p. 88). Spinach pie (with tofu, p. 93). Tempeh stuffed potatoes (p. 94-95). Spicy sautéed tofu with peas (p. 98). Quick sloppy joes (with tempeh, p. 98). Sweet potato slaw (with tofu). Tofu balls (p. 100). Pad Thai (p. 102-03). Davida’s spicy garlic noodles and tofu (p. 105). Soy whipped cream (with soymilk, p. 106-07). Chocolate pudding (with soymilk, p. 107). Heavenly chocolate cupcakes (with soymilk, p. 109). Tofu cheesecake (p. 112). Homemade soymilk, rice milk, almond milk (p. 115). Homemade tofu (p. 115). Tofu recipes on the Web (p. 116). Homemade soy yogurt (p. 116). Homemade wheat gluten & seitan (p. 116). What is tempeh? What is TVP (p. 119). Vegetarian mince or meatless ground beef (p. 120-21). vegetarian and soy cheeses (p. 121). Tofurky (meatless turkey, p. 122-23). Tofutti (non-dairy soy ice cream) and vegan eggnog (p. 125). Soy-based vegan candles (p. 126). Using tofu (p. 129-31). Tofu cream cheese (p. 131). Soymilk and soy creamer (p. 132). Soy buttermilk and soy mayonnaise (p. 133). Feeding an infant with soy formula (p. 154). Are the phytoestrogens in soy formula safe? (p. 155). Helping kinds to switch to soymilk from cow’s milk (p. 156). Address: 1. Baltimore, Maryland; 2. R.D.

1915. Sabaté, Joan; Ratzin-Turner, Rosemary. ed. 2001. *Vegetarian nutrition*. Boca Raton, Florida: CRC Press. [xxiv] + 551 p. Index. 24 cm. CRC Series in Modern Nutrition. [1732 ref]

• **Summary:** The best scholarly book seen to date on this subject. Consists of a Prologue (by Mervyn Hardinge) plus

21 chapters, in five sections, by various authors.

This book contains extensive information on soyfoods as follows: Vitamin B-12, homocysteine, meat analogues and soya milks (p. 47). Summary of epidemiologic studies of soy / tofu intake and breast cancer risk (p. 80-81). Vegetarian diets and soy in the prevention of osteoporosis, diabetes, and neurological disorders (p. 120-21, 125). Iron and soy (p. 202-03). Guidelines to achieve an optimal ratio of essential fatty acids in the diet (p. 203; soy is rich in  $\alpha$ -linolenic acid). Zinc, calcium and soy (p. 206). Women's reproductive function, menopausal symptoms, phytoestrogens and soy (p. 232-34, 244). Health advantages of a vegetarian diet for the elderly—and soy (p. 254-55). Vegan children, protein and soy (p. 302). Iron and soy (p. 304; "While the percentage of iron absorbed from soy may be low, the total amount of iron absorbed is adequate, because soy beans naturally contain relatively large amounts of iron" (p. 304-05)). Phytoestrogens and soy (p. 312-13). Macrobiotic diets (p. 313-15). Calcium and soy (p. 316). Vitamin B-12, miso and tempeh (p. 319-22). Iodine and soy (p. 323). Health-promoting phytochemicals beyond the traditional nutrients—soyfoods and isoflavones (p. 342-45; One table shows the isoflavone content (genistein, daidzein, and glycitein) of soybeans, roasted soyflour, roasted soynuts, TVP, tofu, tempeh, miso, and soy milk). Another shows the isoflavone content of commercial soy products by the weight of a typical serving, in descending order of isoflavone content (cooked soybeans, dry TVP, dry roasted soy nuts, tofu, soy flour, soy protein isolate, soymilk, SoyBoy Breakfast Links, soybean chips, tempeh, miso, soy cheese, Ice Bean [soy ice cream], Green Giant Harvest Burger, soy noodles, Tofutti [soy ice cream], soy sauce, soy oil). Protection against cancer and soy (p. 346-47). Help for menopause and bone loss (p. 347-48). Protective substances and soy foods (p. 397-98). Calcium fortified products such as soy (p. 421). Consuming a wide range of vegetable oils from intact plants—soy (p. 421). Developing a vegetarian food guide—Legumes, lentils and peas (p. 428-29; "Among legumes, the soybean possesses unique nutrient characteristics." Many food guides place soy beverages in the milk-dairy category). Table: Comparison criteria for evaluating soy and grain-based beverages (p. 430). The water efficiency of food production—and soy (p. 449; "The water intensity of animal production is much larger than the water intensity of crops. For instance, per gram dry weight, soybeans require about 0.75 liters of water" compared with about 20 liters for cattle). Note: Joan Sabaté is a man. The series editor is Ira Wolinsky, PhD, Univ. of Houston, Texas. Address: 1. Prof. of Chair, Dep. of Nutrition, and Prof. of Epidemiology, Loma Linda Univ., Loma Linda, California.

1916. Willcox, Bradley J.; Willcox, D. Craig; Suzuki, Makoto. 2001. *The Okinawa Program: How the world's longest-lived people achieve everlasting health—and how you*

can too. New York, NY: Clarkson Potter. x + 484 p. Index. 24 cm. Foreword by Andrew Weil, M.D. [41 + 474 endnotes]

• **Summary:** A remarkable book! Written by a team of internationally renowned experts, it is based on the landmark, scientifically documented 25-year Okinawa Centenarian Study. Okinawans have the world's longest disability-free life expectancy. Their occurrence of heart disease is only one fifth that of Americans. Their rate of breast, ovarian, and prostate cancer is less than one quarter of American levels. And the number of centenarians per 100,000 is six times that of the USA. This is a book with plenty of solid, practical scientific advice.

If you have ever questioned the healthfulness of traditional soyfoods, read Chapter 4, "Eating the Okinawa way" (p. 114-45). A table (p. 116) lists "The top fifteen Okinawan healing foods." No. 1 is "Okinawan tofu." Its main active components are saponins and flavonoids (mostly isoflavones). No. 2 is Miso, which has the same active ingredients.

Step 3 in eating the Okinawan way is to "Eat three calcium foods daily." Calcium-fortified tofu is given as the single best source (p. 122)—containing 46% more usable calcium than the same volume of calcium-fortified orange juice! Calcium fortified soy milk is the 3rd best source. "Dairy products are also excellent sources of calcium, but they are best consumed in moderation—there is little support from interventional studies that they actually help reduce risk for osteoporosis [8]. In fact, osteoporosis rates are lower in societies where people eat few, if any, dairy products. This may be because they are high-protein foods, and *too much protein tends to leach calcium out of bones*. For every gram of protein that you eat, you lose 1 to 2 mg of calcium in your urine [9]. For postmenopausal women your protein to calcium ratio (how much protein you eat versus how much calcium) is actually a stronger predictor of your risk for bone fracture than your calcium intake alone [10]. If you maintain a high-protein diet for an extended period with marginal calcium intake, you could be increasing your risk for osteoporotic fracture.

"The type of saturated fat in dairy products is also the worst offender for making cholesterol in the body."

Step 4 in eating the Okinawan way is to "Eat three flavonoid foods daily. Flavonoids—ubiquitous plant compounds found in large quantities in soy products and some other legumes (beans), and to a lesser extent in tea, onions, and apples—are powerful antioxidants. They provide a weak form of estrogen where the body needs it and block the body's own estrogen in locations where estrogen may induce cancer... two plants—soybeans and flaxseed—have pharmacological levels of these compounds, levels that exceed those in other plants by as much as 1,000 times [14]." "Soy has just been allowed the unprecedented honor of an official U.S. Food and Drug Administration (FDA) health claim [20]... Our prediction is that as the evidence mounts

for soy consumption reducing the risks for breast cancer, prostate cancer, and possibly other cancers such as colon cancer, other USDA-approved health claims will follow.”

“Tips for increasing your flavonoid intake: Learn about soy products.” On pages 126-28 are substantial, accurate descriptions of the following soy products: Tofu, silken tofu, tempeh, miso, soy milk, soy flour, textured soy protein (TSP) or texturized vegetable protein (TVP), edamame, soy nuts.

The praise for soyfoods continues in the next chapter, “Okinawa’s healing herbs and foods.” There are two pages about Okinawa firm tofu (p. 158-59). Address: 1. M.D., Div. of Aging, Harvard Medical School; 2. PhD, medical anthropologist and gerontologist, Asst. Prof., Okinawa Prefectural Univ.–College of Nursing; 3. M.D., PhD, cardiologist and geriatrician, Prof. Emeritus of Community Medicine, Univ. of the Ryukyus, and Prof. and Chair, Dep. of Gerontology, Okinawa International Univ.

1917. Archer Daniels Midland Company. 2002. The nature of what’s to come: a century of innovation–1902-2002. Decatur, Illinois: ADM. [x] + 93 p. Illust. Portraits. Index. 23 x 29 cm. \*

Address: Decatur, Illinois.

1918. Richards, Michael. 2002. Candleworks Inc. and the development of candles made from soy wax (Interview). *SoyaScan Notes*. Jan. 10. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** “I started, self funded, in a building without any electricity or water, and I didn’t have a university or a corporation behind me, so I stayed under the radar for quite a while. We had these candles out in commercial distribution in the Sept. of 1995—that very definitely was the earliest 100% vegetable wax candle on the market; 33% of the content was soy oil. The actual candle was named Marinis Travel Candle. The candle came in three scents: Reviving, Relaxing, and Marinis. The form was a 1½ oz. covered travel tin. They were meant to pack in a purse or suitcase. The back label reads: “Created with beeswax and plant-derived waxes. Renewable, non-petrochemical resources.” One candle cost \$3.95 retail. The high cost was what drove me to soybean oil. But we were creating something that had never existed before, so we had to overcome many technical hurdles.

It’s an interesting paradox. When you’re an innovator, you’re kind of ahead of the wave. I’ve literally created a new market. Now I’m doing my best to maintain a position in the market after creating this whole new wave.

Michael was making the candles in Iowa City, Iowa. At that time soy oil was part of the content, but by Sept. 1996 we had hydrogenated soy oil as the majority of the content; it was a gradual process. In 1997 the University of Iowa funded chemical engineering intern who wrote a paper titled “Increasing the use of soybeans in the manufacturing of candles”—issued in Aug. 1997. So our developmental process

was documented by the university. We started working with vegetable oil waxes in 1991 and gradually moved to soybean oil in 1995—you know, being a native Iowan that was the direction to go for raw materials. I have a timeline that maps out the history of our development. At a trade show, the Indiana soybean association people used to come around and take pictures of our booth.

Michael’s patent is in process. Cargill bought the patent rights and left Michael with a revenue share. “It was absolutely necessary. If I hadn’t taken action as an entrepreneur working with no funding, I would have been left in the dust—even if I had a patent. Having a patent is one thing, defending it is another. ADM and Cargill both signed research agreements with me in the late 1990s. Quite realistically, Cargill is going to make a lot of money and I’ll make some. But it’s going to be a piece of a bigger and bigger pie. Cargill has a contractual obligation to defend my patent.

“Cargill first makes the soy oil by crushing soybeans, then they hydrogenate it. I have delegated all my wax production to Cargill.” Address: Founder, Candleworks, Inc., 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-363-1774.

1919. The Mail Order Catalog for healthy eating. Winter 2002. 2002. P.O. Box 180, Summertown, TN 38483. 36 p.

• **Summary:** The book section of this mail order catalog contains listings for an excellent selection of vegetarian and vegan cookbooks, vegetarian soyfood cookbooks, plus books on food nutrition & health, alternative healthcare, women’s healthcare, native Americans and their cultures, animal rights, and sustainability.

The vegetarian food products section offers TVP granules and chunks, Response textured soy protein concentrates (misleadingly called “Response TVP flakes”), miso soup mixes, wheat free soy pasta, soy & rice pudding mixes, soy & nondairy beverages and beverage mixes, soy protein powders & shake mixes, soynut butters, sea vegetables, vegetarian jerky, soynuts, plus foods from Worthington and Loma Linda, Jyoti India Cuisine, and Dr. John McDougall. Address: Summertown, Tennessee. Phone: 800-695-2241.

1920. Jordan, Joe. 2002. U.S. agribusinesses take first steps in Cuba. *Bluebook Update (Bar Harbor, Maine)* 9(1):1, 7. Jan/March.

• **Summary:** In Nov. 2001 Hurricane Michelle devastated parts of Cuba, severely damaging crops and killing five people. While continuing to enforce its 38 year old embargo, the U.S. government responded by easing some sanctions last year. ADM, Cargill Inc., and Riceland Foods have secured contracts to sell soy, corn, rice, wheat and other staples to Cuba. Cargill will ship 10,000 tons of crude soy oil in January and February.

1921. Barnes, Stephen; Messina, Mark. 2002. Introduction and satellite session at the Fourth International Symposium on the Role of Soy in Preventing and Treating Chronic Disease. *J. of Nutrition* 132(3):545S-46S. Supplement. March. [6 ref]

• **Summary:** This is the fourth in a series of symposia on this topic that began in 1994 in Mesa, Arizona. The number of attendees was reduced by security concerns and air transportation problems following the terrorist attacks on Sept. 11, 2001 in the United States. Nevertheless, scientists representing 21 countries and 5 continents attended the symposium held on Nov. 4-7, 2001, in San Diego, California; 36 scientists gave oral presentations, including four overviews of soy research—metabolism of soy isoflavones, breast and prostate cancer, hormonal effects in women, and the benefits and risks of soy infant formulas. The rest of the talks presented new research information. Two poster sessions were also held on various subjects: the effects of soy on coronary heart disease and atherosclerosis (31 posters), cancer (15 posters), bone (14 posters), kidney (5 posters), blood pressure (3 posters), and cognition (1 poster). There were 17 posters on the metabolism and analysis of isoflavones and another 21 posters on a variety of miscellaneous categories.

This symposium was supported by: Central Soya Co.; Monsanto; Protein Technologies International; SoyLife Nederland BV [Netherlands] / Schouten USA SoyLife; United Soybean Board; Archer Daniels Midland Co.; Cargill Soy Protein Products / Cargill Nutraceuticals; Illinois Soybean Association / Illinois Soybean Checkoff Board; Indiana Soybean Board; Cyvex Nutrition; Nichimo International, Inc.; Nutri Pharma Inc.; Revival Soy; Solbar Plant Extracts Ltd.; Soyatech Inc.; AOCS Press; Dr. Soy Nutrition; Eurofins Scientific / Product Safety Labs; and Optimum Nutrition. This publication was supported by (in alphabetical order) the Indiana Soybean Board, the Kentucky Soybean Board, the South Dakota Soybean Research and Promotion Council, Soyfoods Council, Cargill, and the United Soybean Board. Address: 1. Dep. of Pharmacology and Toxicology, Univ. of Alabama at Birmingham, AL 35294; 2. Nutrition Matters, Inc., Port Townsend, Washington 98368.

1922. Archer Daniels Midland Co. 2002. A standout protein that blends in (Ad). *Nutraceuticals World*. April. p. 33.

• **Summary:** This full page color ad shows an empty blender with a purple lid. The text begins: “ADM has a great new product for your food and beverage applications that’s the perfect mix of soy protein, fiber, and lecithin. It’s called PFL...” and is sold under the brand name NutriSoy. The tag-line below the NutriSoy log is: “It’s all about a strong beat.” The other logo on the page is “ADM Nutrition.” ADM’s company slogan is: “The nature of what’s to come.” Address: [Decatur, Illinois]. Phone: 1-800-510-2178.

1923. Murray, Shailagh. 2002. Will a ‘temporary’ fuel subsidy ever die? A biodiesel tax break could enjoy a long life, as 25-year-old ethanol grants show. Politics & policy. *Wall Street Journal*. May 9. p. A4.

• **Summary:** In 1977 Congress began to subsidize ethanol, a corn based fuel, to help the industry get started. That was 25 years ago, and the subsidy still exists. The General Accounting Office, the investigative arm of Congress, says the various ethanol incentives / subsidies have cost taxpayers as much as \$15 billion. Today, ethanol is the third largest use of corn, ahead of cereals and sweeteners.

ADM, which processes more corn and soybeans than any single country in the world, is enthusiastic about both ethanol and biodiesel subsidies. ADM is now considering building a biodiesel plant in Minnesota. An important first step is securing an exemption from the federal excise tax on motor fuels. The most widely sold form of biodiesel today blends 20% biodiesel with 80% conventional (petroleum-based) diesel. The pending legislation in the Senate’s energy bill would reduce by one cent the 24.4 cents-a-gallon federal excise tax for each 1% of biodiesel in a blend, up to a maximum of 20 cents. That would eliminate the price gap for 20% biodiesel.

Rudolf Diesel (1858-1913), the German mechanical engineer who built the engine named after him (starting in 1896), envisioned that it would run on vegetable oils.

Soybean growers have proceeded wisely and carefully in bringing biodiesel to market. They have spent \$30 million to clear environmental hurdles. They have worked to avoid charges that a tax break would amount to corporate welfare. Sales of biodiesel have recently risen dramatically: 1999–500,000 gallons. 2000–5 million gallons. 2001–10 to 15 million gallons. Ag Processing Inc., a Nebraska farmer-owned cooperative, makes biodiesel.

Politics: The soybean and biodiesel industries don’t have political-action committees (PACs) to make campaign contributions. But they do have people—farmers in key farm states. And they have congressmen in important and often tight political races. GOP House Speaker Dennis Hastert is from Illinois, ADM’s home and the top ethanol-producing state.

A recipe for making biodiesel (from the National Biodiesel Board) is printed on a recipe card: Harvest soybeans. Make soybean oil. Mix with alcohol and a catalyst, such as caustic soda. Boil at about 160°C. Wait 1-8 hours to get a mix of glycerin and biodiesel. Allow glycerin to settle and separate it from the remaining liquid. Remove excess alcohol and catalyst. Clear, amber-colored biodiesel is now ready to use. Republicans now embrace a renewable-fuels standard on the basis of national security. Address: Washington, DC.

1924. *ADM Health & Nutrition Update (Decatur, Illinois)*.

2002. Special issue: Fourth International Symposium on the Role of Soy in Preventing and Treating Chronic Disease. November 4-7 2001, San Diego, California. 4(1):1-4. May.

• **Summary:** Contents: Introduction. Emerging research areas. Osteoporosis. Cancer. Coronary heart disease and renal function. Cognitive function.

“Introduction: There have been many important developments in the field of soy research during the past 10 years. One event in particular that has helped to stimulate interest in the health benefits of soyfoods and soybean constituents is the International Symposium on the Role of Soy in Preventing and Treating Chronic Disease, which has been held four times since 1994.”

At the Fourth International Symposium (Nov. 2001) there were more than 30 oral presentations and over 100 poster presentations covering a diverse range of areas, including cancer, heart disease, cognitive function, renal function, osteoporosis, and safety.

1925. Archer Daniels Midland Co. 2002. The soybean and ADM–Nutraceuticals. Television broadcast. Newshour with Jim Lehrer. PBS. May 2.

• **Summary:** The following new ADM ad began to be aired on the Newshour on 2 May 2002: “Imagine a world where health problems are prevented before they even start. Is the answer natural food supplements called nutraceuticals? We’re finding out. ADM–The nature of what’s to come.”

1926. *Bluebook Update (Bar Harbor, Maine)*. 2002. New isolate, new thinking: Cargill rewrites its script. 9(2):8. April/June.

• **Summary:** “‘It’s a whole new product line for us,’ says Kevin Marcus, Director of Marketing for Cargill Inc.’s Soy Protein Solutions business. He’s talking about a recently announced proprietary isolate which has been in development for the last two and a half years. But he might just as well be talking about Cargill, since ‘whole’ and ‘new’ are new directions in which the commodities giant insists it is taking itself these days.

“The world’s largest private company, Cargill has always had the reputation for playing its cards close. But now, as it diversifies into refined products, ingredients, and nutraceuticals, Cargill realizes that it has to ‘open up a little more,’ Mr. Marcus says. ‘If someone buys this product (the new soy isolate), it’s not the end of a relationship, just the beginning. They are buying into our technical expertise.’

“That know-how is part of a Cargill initiative called Food System Design (FSD). Soy Protein Solutions, one of four business units under the FSD umbrella, is working with customers to provide new ingredients and other ideas that will fill consumers’ needs. The new isolate is a product of this process.

“‘It’s made with brand new technology,’ Mr. Marcus says. ‘Some people don’t realize that Cargill has been in

the protein isolate business for 30 years but it got lost in the oil business. It’s been separated out again for the past three years.’

“Now Cargill can focus on its protein. To produce this new isolate, a plant is being built in Sidney, Ohio, with an operational date set for fall, 2002. Soy Protein Solutions expects to capitalize on soy protein’s ‘dramatic revolution during the past couple of years, thanks to the FDA’s health claim,’ says Mary Thompson, VP of the Soy Protein unit. But don’t expect it to be operating on a high volume/low price model. Instead, says Mr. Marcus, Soy Protein Solutions, with the rest of Cargill, is focusing on superior products and customer relationships.

“Other recent Cargill debuts have included a new sugar, Trehalose, which is absorbed at a slower, more sustained rate than other sugars and a highly concentrated isoflavone called AdvantaSoy Clear. Cargill’s transformation has included unveiling a new corporate logo and slogans such as ‘I am a problem solver,’ designed to remold the mindset of the company.”

Note 1: Talk with Bill Limpert of Cargill’s Soy Protein Solutions. 2002. July. There was a one-word error in this article: Cargill has been in the soy protein business for 30 years, but has not previously manufactured soy protein isolates. When Cargill changed Soy Protein Products to Soy Protein Solutions about 6 months ago, the company made a major commitment to customer service and to helping customers develop new products using existing or new Cargill protein products. PTI has long been doing this with its isolates, Central Soya with its concentrates, and Cargill with its soy flour. Cargill’s new isolate plant is expected to open in Nov. 2002.

Note 2. Industry insiders note that ADM supplies the entire range of soy protein products but offers little service in order to keep its position as the low-price supplier.

Note 3. As of 8 Oct. 2002 Cargill has offered an organic soy protein isolate to at least one potential customer. However in a follow-up call, their sales manager says they definitely have no plans to make organic soy protein isolates.

1927. Hammond, Gary. 2002. Brief history of Central Soya’s work with soy isoflavones (Interview). *SoyaScan Notes*. Aug. 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Central Soya sold small amounts of isoflavones in about 1997, before ADM. But the product never had a name and was never really commercialized. Then they had a joint venture with Henkel that never worked out. Address: Commodities Manager, Gibson City, Illinois. Phone: 1-800-252-6941.

1928. Archer Daniels Midland Company. 2002. ADM–The nature of what’s to come (Ad). *Soybean Digest*. Aug. p. 29.

• **Summary:** A full page color ad. “Imagine a world where health problems are prevented before they even start. Why

do the Japanese have 1/8 the incidence of prostate cancer and fewer symptoms of menopause. Is it a diet rich in soy? ADM is finding out and creating natural supplements called nutraceuticals. So everyone—everywhere—benefits from foods that promote good health.” A color illustration shows edamame in a Chinese folded-paper takeout carton, a wok and chopsticks, and a young soybean plant with two leaves. Address: [Decatur, Illinois].

1929. Murphy, Patricia A.; Barua, Kobita; Hauck, Catherine C. 2002. Solvent extraction selection in the determination of isoflavones in soy foods. *J. of Chromatography. B, Analytical Technologies in the Biomedical and Life Sciences* 777(1-2):129-38. Sept. 25. [21 ref]

• **Summary:** Acetonitrile is better than acetone, ethanol or methanol in extracting the 12 phytoestrogenic soy isoflavone forms found in foods.

Gives the content of daidzein, genistein, and glycitein in soy flour, tempeh, tofu, TVP [textured soy flour], and soy germ. Address: Dep. of Food Science and Human Nutrition, Iowa State Univ., 2312 Food Science Building, Ames, Iowa 50011, USA. pmurphy@iastate.edu.

1930. *Bluebook Update (Bar Harbor, Maine)*. 2002. Purchase puts Bunge on top of the world: Cereol addition makes company world's largest oilseed processor. 9(3):1-2. July/Sept.

• **Summary:** Bunge will acquire a 55% controlling interest in Cereol S.A. from Edison S.p.A., an Italian energy firm, for 449.2 million euros. Cereol has oilseed processing plants throughout eastern Europe including Hungary, Poland, Romania, and Ukraine.

This new combination of Cereol and Bunge will create the world's largest oilseed processing company, and Bunge will become the second largest U.S. soybean processor after ADM. According to the *Wall Street Journal*, Bunge will control approximately 23.5% of U.S. soybean processing capacity.

1931. Byrne, Harlan S. 2002. To market, to market: Global agribusiness goliath Bunge Ltd. feeds the world and nourishes stockholders. *Barron's*. Oct. 21.

• **Summary:** In Aug. 2001 Bunge, the multinational agribusiness company, first began selling its stock to the public (IPO) and was listed on the New York Stock Exchange. Initially priced at \$16, the shares now trade about \$23—quite impressive for a company with operations on four continents. In a second offering in March 2002, Bunge issued 16 million shares at \$19 apiece. Yet the company's name is not well known to the billions of people who consume its products. Soybeans, which supply nearly one-third of the world's edible oils, have powered much of the company's growth in recent years. In the past 5 years, Bunge's soybean processing capacity has leaped to 34 million tons from 5

million tons—about the same as ADM and Cargill.

Founded 185 years ago as a grain trader in Amsterdam, The Netherlands, and incorporated in Bermuda, Bunge is now headquartered in White Plains, New York. Since the 1960s, Bunge has been expanding in the USA, which is now the key to its global distribution.

Bunge's latest expansion involves the two-stage purchase (for about \$900 million) of Cereol, S.A., a leading oilseed processor. Completion of the deal, expected in early 2003, will catapult Bunge to No. 1 among the world's oilseed processors. Photos show: (1) Three views of Bunge grain elevators, shipping lines, and storage facilities. (2) A small photo shows Alberto Weisser, Chairman and CEO. A small graph shows Bunge's stock price from Aug. 1901 to the present.

1932. Archer Daniels Midland Co. 2002. Annual report: A global franchise. P.O. Box 1470, Decatur, IL 62525. 48 p. Oct. 28 cm.

• **Summary:** This year's annual report features ADM's new logo and tagline: “the nature of what's to come.” And it focuses on how ADM functions in today's global agricultural markets. There follows a “100-year perspective” with five pairs of photos comparing then and now. Net sales and other operating income for 2001 (year ended June 30) were \$23,453,561 million, up 17.0% from 2001. Net earnings for 2001 were \$511,093 million, up 33.3% from 2001, but far below the peak of \$796 million in 1995. Shareholders' equity (net worth) is \$6,755 million, up 6.7% from 2001. Net earnings per common share: \$0.78, up 34.5% from 2001.

ADM's most profitable business segment is “oilseeds processing,” which had an operating profit of \$388 million, up 49.2% from 2001.

“This year we celebrated our 100th year anniversary at ADM.... ADM began in Minneapolis as a linseed oil producer.” A small black-and-white photo of the company is shown.

Also accompanying the annual report is a “Notice of Annual Meeting.” G. Allen Andreas, age 58, Chairman of the Board and CEO, had a 2001 salary of \$2,557,833 plus \$142,704 other annual compensation. Address: Decatur, Illinois.

1933. *Plenty Bulletin (Summertown, Tennessee)*. 2002. Soy Huichol: Integrated soy project develops in Mexico. 18(3):4. Fall.

• **Summary:** Mexico's Huichol people have maintained their traditional culture, language, and spiritual way of life for centuries in their homeland, the rugged and remote mountain terrain in the Mexican states of Jalisco and Nayarit. There an estimated 7,000 of these remaining Aztec descendants reside.

But the Huichol are poor, and are being exposed to the outside world. Over the past year Plenty has been developing a soy food and nutrition project with the Huichol Center for

Cultural Survival and Traditional Arts (HCCSTA). Louise Hagler, soy cooking expert and Plenty advisor, visited the Huichol Center in late July. She took 35 soybean varieties to conduct trials. She did a little demo at the Huichol Center with TVP (textured vegetable protein) and also made soymilk, which she turned into tofu, and prepared okara hash.

Chapingo University is the largest and oldest agricultural university in Mexico, located just outside Mexico City in Texcoco. There she met with Dr. José de Jesús Loyola, who is head of the soybean projects at Chapingo University and his compadre Ing. Ciriaco Ayalo Sanchez. Ciriaco has written a 40-page book on how to grow soybeans in Mexico, the only such book available. They told Louise that soybeans were first planted in Mexico in 1909, and that in the 1950s President Diaz started a project to replace indigenous beans with the soybean, but the project failed. “The people did not accept the soybean, most likely because they did not know what to do with it.”

Louise had a very encouraging meeting with the American Soybean Assoc. (ASA) in Mexico City. ASA promotes soybeans as both feed for animals and food for humans, and works with DIF (*Departamento Infantes y Familias*) in Jalisco and other states. DIF does nutritional outreach. ASA works to provide good prices for their “soya seca” (dry soy–TVP) which is part of the food baskets DIF distributes to needy families. They have found that the women who cook the soyfoods prefer the whole soybean to the processed products like TVP because the beans are a more familiar form.

1934. *Bluebook Update (Bar Harbor, Maine)*. 2002. Dream team to lead Soyfoods Summit 2003. 9(4):4. Dec.

• **Summary:** Soyfoods Summit will be held on 26-28 Feb. 2003 in Miami, Florida. The conference, which is being organized by The Food & Beverage Xchange, a division of IQPC (London, England), will have two separate tracks of presentations: (1) Marketing and technology, and (2) Health benefits of soy. Dr. Mark Messina is conference co-chair. A small portrait photo shows Martin L. Andreas (ADM), who will present the keynote address.

1935. Jordan, Joe. 2002. U.S. Food & Agribusiness Exhibition shows opportunities for oilseed industry. *Bluebook Update (Bar Harbor, Maine)* 9(4):2. Dec.

• **Summary:** In late September, 290 U.S. companies took the rare opportunity to present their products to over 16,000 visitors in Havana, Cuba, at the U.S. Food & Agribusiness Exhibition. The trade show was organized by PWN Exhibicon, a Connecticut-based company that applied for the permit in Nov. 1999. U.S. companies can now sell goods to Cuba on a cash-only basis thanks to revised trade sanctions, which became law in Oct. 2000. Companies first took advantage of the new law after Cuba appealed for permission

to buy food from the USA following the devastating Hurricane Michelle in Nov. 2001.

ADM, the primary sponsor of the event, signed \$19.05 million in contracts for soy, corn, and rice products. Cargill, Inc. signed contracts worth \$17.1 million. A photo shows Paul Lang, President of Natural Products, Inc. discussing soyfoods with Cuban president Fidel Castro. As part of the Iowa delegation, he attended a dinner with Fidel Castro. Lang notes about two years after the USSR dissolved [it dissolved in Dec. 1991], Cuba had no feeds for their dairy herds; the cows stopped producing and many died [or were slaughtered for meat]. Since then, Cuba has converted 18 of their 19 dairy plants so they make soymilk and/or dairy alternatives. Also, Cuba is working to incorporate 50% textured soy into most of the country’s meat; in the past they succeeded in incorporating 30% soy. Lang said that Castro has an excellent understanding of soyfoods and of the economics of using soy protein to feed Cuba.

PWN Exhibicon has already applied for the permit to organize a follow-up exhibition in Jan. 2004.

1936. Massey, Linda K.; Grentz, L.M.; Horner, H.T.; et al. 2002. Soybean and soyfood consumption increase oxalate excretion. *Topics in Clinical Nutrition* 17:49-59. [17 ref]

• **Summary:** “Eight healthy adults with no prior history of kidney stones participated in eight oxalate (Ox) load tests, seven foods and an Ox solution control... Thus, frequent consumption of soybeans and soy products (TVP, soynuts, soy beverage, and tofu) may be a risk factor for CaOx kidney stone formation in susceptible individuals, such as those with a prior history of Ca stones, high normal urinary Ox concentrations, or intestinal disease.” Address: 1. Dep. of Food and Human Nutrition, Washington State Univ., Spokane, WA.

1937. *Dragonwagon, Crescent*. 2002. Passionate vegetarian. New York, NY: Workman Publishing. x + 1110 p. Illust. (by Robbin Gourley). Index. 23 cm. [10 ref]

• **Summary:** A superb, massive book, “with more than 1,000 robust recipes with notes on cooking, eating, loving, and living fearlessly”—as the cover proclaims. Very nicely designed, with many delicious recipes. The author is an outstanding writer with a deep knowledge of ingredients—including soyfoods.

Chapter 10, “Celebrating soyfoods” (p. 623-78) begins: “As a soy-loving girl from way back I invite you to enter an ever-expanding universe of foods: not merely extraordinarily healthful, but delectable and diverse—great ingredients for a passionate cook.” This chapter’s contents: Introduction. Inneccote. Whole soybeans. Green soybeans (edamame). Canned soybeans. Cooked dry soybeans. Milled soybeans (soy flour and soy grits). Soynuts and soynut butter. Tempeh. Miso. Natto. Okara. Soy protein isolates. Textured soy protein (TSP or TVP). Soy sauces. Soy milk & soy milk

products (soy yogurt, soy cheeses). Tofu & tofu products (fresh perishable tofus, classic traditional, seasoned tofus {savory baked tofu, other seasoned baked tofus}, ready-made tofu dips and spreads, ready ground tofu). Dry or packaged tofus (cupboard, like silken tofu). Other miscellaneous tofus (tofu burgers and sausages, deep-fried tofu, freeze-dried tofu [dried frozen tofu], tofu hot dogs, yuba).

Concerning yuba the author writes (p. 656): “I believe this traditional Asian product will explode onto the American soy-scene soon because it is so versatile and delicious and has a long and honorable history as a meat alternative. It is the unique thin-chewy texture of yuba sheets, when layered with seasonings and shaped, stacked, cut, and prepared in certain ways, that gives such a convincingly ‘meaty’ feeling to such dishes.”

The word “tofu” appears on 100 pages in this book, “tamari” on 100 pages (she uses the phrase “tamari or shoyu soy sauce”), “soy sauce” on 100 pages, “shoyu” on 98 pages, “tempeh” on 88 pages, “seitan” on 72 pages, “miso” on 58 pages, “soy milk” on 47 pages, “tofu sour cream” on 40 pages, “silken tofu” on 30 pages, “soybeans” on 25 pages, “baked tofu” on 22 pages, “savory baked tofu” on 16 pages, “firm tofu” on 10 pages, “green soybeans” and “edamame” each on 8 pages, “soy flour” on 6 pages, “soy ice cream” and “TVP” each on 5 pages, “dairy free” on 4 pages, “firm silken tofu,” “teriyaki,” “textured vegetable protein,” “yuba” and “whole soybeans” each on 2 pages, “Silk Soymilk Creamer” and “meat alternatives” each on 1 page.

1938. Kneen, Brewster. 2002. *Invisible giant: Cargill and its transnational strategies*. 2nd ed. London and Sterling, Virginia: Pluto Press. x + 222 p. Index. 22 cm. 1st ed. 1995. [210 ref]

• **Summary:** A critical (and we think sometimes unfair) analysis of Cargill’s strategies, activities, and structure. Contents: 1. Mutant giants: Introduction, Bunge Ltd., Louis Dreyfus & Cie, Cargill’s world, public policy. 2. Cargill Inc.–The numbers. 3. Origins, organization and ownership. 4. Policy advocacy and capitalist subsidies. 5. Creatures: Feeding and processing. 6. Cotton, peanuts, malting. 7. Invisible commodities. 9. E-commerce. 10. Coming and going: Transport and storage. 11. Typical stories–Canada and Mexico. 12. Fertilizer. 13. The West Coast. 14. Rivers of soy–South America. 15. Juice. 16. The ‘Far East.’ 17. Seeds. 18. Salt. 19. Only Cargill’s future? Notes.

On the back cover we read: “Transnational corporations straddle the globe, largely unseen by the public. Cargill, with its headquarters in the US, is the largest private corporation in North America, and possibly in the world. Cargill trades in food commodities and produces a great many of them... There are few national economies are unaffected by Cargill’s activities, and few eaters in North America whose food does not pass through Cargill’s hands at some point. Yet Cargill remains largely invisible to most people and accountable to

no one outside the company. This is the second edition of an explosive book that breaks the silence on the true extent of Cargill’s power and influence worldwide—its ability to shape national policies, and the implication of those strategies for all of us.”

About the author: “Brewster Kneen is Canada’s foremost analyst and critic of agribusiness.” Address: Canada.

1939. Pho, Van H. 2002. *An inquiry into the possible tradeoffs between antitrust enforcement and employment*. PhD thesis, American University, Washington, DC. x + 300 p. 28 cm. [54 ref]

• **Summary:** On pages 63-73 is a case study of Archer-Daniels-Midland Co. (ADM). The centerpiece of this study is Table 5 titled “Summary of Archer-Daniels-Midland business activity” (July 1923 to July 1998). The table has two columns: date and business activity. Here are some examples:

July 1923–Acquired the properties of Midland Linseed Products Co. for \$3,175,000. This company formed in 1898 operated linseed oil mills adjoining those of Archer-Daniels Linseed Co. at Minneapolis, Toledo and Edgewater.

1965 Sept.–Acquired Galesburg Soy Products Co. for cash.

1968–Acquired Ross & Rowe, Inc. [lecithin processors] for 6,000 shares.

1969 Nov.–Acquired First Interoceanic Corp. and about 88% ownership of the National City Bank, Minneapolis.

1971 April–Acquired 50% interest in Corn Sweeteners Inc.

1973 Jan.–Acquired 50% of British Arkady Holdings Ltd., which subsequently acquired British Arkady Co., Ltd., England.

1974 Jan.–Purchased a soybean processing plant and edible oil refinery at Araraquara, State of Sao Paulo, Brazil; purchased Oliefabriek De Ploeg B.V. and its subsidiary Oliefabriek De Merwede B.V.; purchased ADM do Brasil Produtos Agricolas, Ltda, Agriproducts, Inc. (Cayman Islands) and Ardanco S.A. (Spain).

1975–Acquired the remaining 50% interest in CornSweeteners Inc. and merged into Co.

1978–Merged with Ross & Rowe, Inc.

1982 Dec.–Acquired a substantial part of Toepfer International Shareholdings.

1987 June–Acquired Gold Kist soybean processing plant at Valdosta, Georgia, from Gold Kist, Inc.

This case study also contains 4 interesting figures (Figs. 8-11) about Archer-Daniels-Midland.

“Figure 8. Archer-Daniels-Midland employment as a share of manufacturing sector and industry employment for the years 1979-1999

“Figure 9. Archer-Daniels-Midland sales as a share of manufacturing sector and industry sales for the years 1979-

1999

“Figure 10. Archer-Daniels-Midland sales per employee for the years 1979–1999

“Figure 11. Comparison of employment levels between Archer-Daniels-Midland and ConAgra for the years 1979–1999.” Address: Dep. of Economics, Faculty of Arts and Sciences, American Univ., Washington, DC.

1940. *Institutional Investor*. 2003. CEO interview with Alberto Weisser of Bunge: Taking the leap. A low-key agribusiness giant is stirring. Its seventh acquisition in roughly three years—France’s Cereol—won’t be its last. Jan. • **Summary:** Though Bunge is not a household name, the company produces more bottled salad and cooking oils than any company in the world—but it generally sells these commodities to familiar brand-name packagers such as General Mills, Kellogg Co., Frito-Lay, Nestlé, etc. With the acquisition last year of French agribusiness Cereol, Bunge now has 24,000 employees in 28 countries and a very strong presence in Eastern Europe.

Bunge has recently made two major transactions: (1) Its initial public offering (IPO) in August 2001, by which the company raised \$278 million by floating 23% of its shares on the New York Stock Exchange. (2) Its acquisition of Cereol, the French agribusiness, which enabled Bunge to jump from 8 million tons of oilseed processing capacity in 1997 to 32 million today. Cereol is the biggest of 7 acquisitions completed since 1999.

Bunge was founded in 1818 by Johann Peter Gottlieb Bunge, a Dutch grain trader. Descendants of the founders were still running the company in the early 1990s, however the location of its headquarters has bounced around from Amsterdam to Rotterdam, Antwerp (Belgium), Buenos Aires (Argentina), Sao Paulo (Brazil, where it stayed for 30 years), and White Plains, New York (since 1999, to be closer to the hub of international trade and finance).

Weisser, age 46 and a native of Brazil, joined Bunge in 1993 as CFO and in 1999 became CEO. Bunge has 3 main divisions: Agribusiness (which includes soybean processing), food products, and fertilizers. Though a giant, Bunge is only about half as big as ADM, the U.S. agribusiness colossus, and its market capitalizations is only about one fourth of ADM’s. Bunge went public mainly to gain access to new kinds of financing—equity capital. The transition from family ownership went smoothly.

1941. Robertson, Robin. 2003. *Vegan planet: 400 irresistible recipes with fantastic flavors from home and around the world*. Boston, Massachusetts: Harvard Common Press. xvi + 576 p. Illust. Index. 23 cm. [15 ref]

• **Summary:** An outstanding, hefty vegan cookbook by an author who knows her ingredients well and uses a rich and pleasing variety of them. She is also an expert on soyfoods, and the book contains many useful insights about them.

We find the graphic design of the book to be weak to poor; the typeface in the recipe titles is hard to read, the ingredients in the recipes printed in gold on white are hard to read, and the many pages of white ink on a gold or other such background are hard to read.

The word “tofu” appears on 91 pages in this book, “tamari” on 67 pages (she uses the phrase “tamari or other soy sauce”), “soy sauce” on 62 pages, “soy milk” on 56 pages, “dairy-free” on 55 pages, “seitan” on 47 pages, “tempeh” on 46 pages, “silken tofu” on 33 pages, “firm tofu” on 29 pages, “miso” on 28 pages, “soft silken tofu” on 23 pages, “extra-firm tofu” on 13 pages, “teriyaki” on 6 pages, “soybeans” on 13 pages, “soy ice cream” and “meat alternatives” each on 10 pages, “TVP” on 8 pages, “baked tofu” on 7 pages, “textured vegetable protein” on 6 pages, “firm silken tofu” on 5 pages, “soy flour” on 4 pages, “soy nuts” and “soft tofu” and “dairy alternatives” each on 3 pages, “edamame” (“fresh soybeans in the pod”) on 2 pages, “soy yogurt” and “frozen tofu” each on 1 page (p. 72),

Yuba is mentioned on pages 182, 350–51 (definition and description), 389, 410–11, 414.

Page 29 states that soy flour is “Made from finely ground roasted soybeans” [i.e., kinako].

“Humans are the only animals that drink the milk of another species and the only animals that drink milk after childhood” (p. 9). Address: Virginia Beach, Virginia.

1942. Klein, Barbara P.; Cadwallader, Keith R.; Chen, Dejun; Khanna, Pradeep; Weingartner, Karl E. 2003. *Textured vegetable protein in the American kitchen*. Champaign-Urbana, Illinois: Illinois Center for Soy Foods. 57 p. Illust. No index. 24 cm. Series: Soy in the American Kitchen.

• **Summary:** Contents: Illinois Center for Soy Foods. Bringing soy foods to the American table. Why eat soy? What is Textured Vegetable Protein (TVP)? (usually extruded whole or defatted soy flour). Many forms of TVP (different size granules or chunks, and various flavors). Buying and storing TVP. Rehydrating TVP. Tips for using TVP. Adding TVP to your diet. Nutrient information,

Recipes (38 recipes). Every right-hand page contains an elegant full-page color photo of the recipe to its left. Most of the recipes are meatless, but a few (such as Sausage Patties, with 1 lb ground pork) call for the use of meat. Address: 1. PhD, editor, Director, Illinois Center for Soy Foods, 170 National Soybean Research Center, 1101 Peabody Dr., Univ. of Illinois, Urbana, IL 61801. Phone: (212) 244-1706 or [www.soyfoodsillinois.uiuc.edu](http://www.soyfoodsillinois.uiuc.edu).

1943. *NSRL Bulletin (National Soybean Research Laboratory, Urbana, Illinois)*. 2003. Illinois Center for Soy Foods publishes second cookbook. 10(1):4. Feb.

• **Summary:** “A new cookbook that presents the many ways that textured soy protein can be used as a healthy and delicious ingredient in the average American kitchen has

been published by the Illinois Center for Soy Foods at the University of Illinois. This illustrated, full-color publication entitled *Textured Vegetable Protein in the American Kitchen* is the second in an ongoing series of soy foods cookbooks.

“Textured soy protein can best be looked at as a typically American soy food,” says Barbara Klein, editor of the book and co-director of the Center. “It is a quick-cooking food with the texture and nutritional value of meat. It can serve as a valuable addition to the kitchens of people who are looking for a quick and inexpensive source of protein and a way to cut back on fat in their diets.”

“Textured soy protein is generally made from whole or defatted soybeans that have been texturized and then ground into granules or chunks of varying sizes. Consumers can buy this product under a variety of names—textured soy protein, textured vegetable protein, textured soy flour, TSP® (a registered trademark of PMS Foods LP), and TVP® (a registered trademark of Archer Daniels Midland Company). For simplicity, the term ‘TVP’ was used in the cookbook.

“TVP provides a complete protein that includes all the essential amino acids,” Klein says. “It is virtually fat free and has no cholesterol. It is also very low in sodium and high in dietary fiber. TVP also retains soy’s isoflavones, which are special components in soy that contribute to its ability to prevent disease.”

“Klein notes that this new book fits well with the goal of the Center, which is to encourage consumers in the U.S. to eat more healthy products made from soy.

“With this book, we hope to inspire a broad range of people to use and enjoy this American soy food,” Klein says. “We show step-by-step how average consumers can cook with TSP and still enjoy the same tastes and textures that they have grown up with.”

“Textured Vegetable Protein in the American Kitchen contains a wide range of tasty recipes ranging from appetizers to desserts, as well as many appealing entrees. All the recipes were developed by Cheryl Sullivan, M.A., R.D., and extensively tested by the staff at the Center.

“With this new cookbook, we can show everyone just how easily this healthy ingredient can be added to the kinds of foods that all of us are used to eating,” Klein says. “TSP is especially adaptable for use in many of our favorite comfort foods, such as chili, meatloaf, and calzones. We also have recipes for everything from carrot bread to cookies. And, most importantly, it all tastes good.”

“She points out that adding TSP to the diet also represents an easy way to gain the many health benefits from soy protein. The U.S. Food and Drug Administration has recently approved a health claim for soy foods that acknowledged the connection between consuming soy and decreasing the chance of developing cardiovascular disease.

“Extensive research has confirmed that eating 25 grams of soy protein per day, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease,” Klein

says. “This fact provides another example of how using TSP and other soy foods can add affordable, flavorful, and healthful components to the diet.”

“The cookbook was designed in an easy-to-use format, with a spiral binding that allows it to lie flat for efficient use in the kitchen. Nutritional information, including calorie, fat, carbohydrate, and protein counts, is provided for each recipe. It also contains helpful general information on buying, storing, and efficiently using TSP.

“The book can be ordered at a price of \$15 per copy by calling toll free at (800) 345-6087. Additional information, sample recipes, and an on-line order form for the cookbook and the other title in the series, *Tofu in the American Kitchen*, are also available on the Internet at [www.soyfoodsillinois.uiuc.edu](http://www.soyfoodsillinois.uiuc.edu).”

1944. Sosland, Josh. 2003. Matching grain-based foods and specialty proteins. *Baking & Snack*. Feb. 1. \*

• **Summary:** “Incorporating specialty proteins into the diet represents a red hot health trend.” This idea was reinforced by the creation last month of Solae L.L.C., a joint venture between DuPont and Bunge—based in St. Louis [Missouri], the home of Protein Technologies International. “While agricultural biotechnology and farmer services will be part of Solae, it is the specialty protein business that is at the heart of the venture.” The first product introduced under the Solae brand was 8th Continent soy milk, developed in another joint venture between DuPont and General Mills, Inc. (Minneapolis, Minnesota).

Gives a detailed description of ADM’s work with and market segmentation for soy proteins. Anthony DeLio of ADM says that “a lack of familiarity and wariness about taste stand as two central challenges facing the category... Perception problems have been and will be a challenge. It can be difficult to convince consumers to even give soy-based products a try.” “Texture and flavor continue to be the focal areas for formulators,” says Phil Gentlesk.

“Nutriant [Cedar Falls, Iowa] is the two-year-old nutritional division of Kerry Ingredients, the global ingredient company headquartered in Ireland.”

1945. *Soyfoods Canada Newsletter*. 2003. Soyfoods Canada membership list. Winter. p. 4.

• **Summary:** “For 2002/2003 there are 26 members in Soyfoods Canada. They are:

- ADM Protein Specialties
- Advantage Seed Growers and Processors
- Cold Springs Farms
- Concord National Inc.
- DuPont Protein Technologies
- First Line Seeds
- Galaxy Foods
- Hensall District Co-operatives
- J.L. International

Maple Leaf Foods International  
 Momo's Kitchen  
 Nutrisoya Foods Inc.  
 Ontario Soybean Growers  
 Parmalat Canada  
 ProSoya Inc  
 Saskatchewan Nutraceutical Network  
 South West Ag Partners  
 SoyaWorld Inc.  
 Soyolutions Inc.  
 Stake Technologies  
 Sunrise Soya Foods  
 Superior Tofu Ltd.  
 Tetra Pak Canada Inc.  
 Tofutti-Cholac Foods  
 W.G. Thompson & Sons Ltd.  
 Yves Veggie Cuisine.

1946. Smith, Tony. 2003. Farm exports boom in Argentina. *New York Times*. March 26. p. W1, W7. World Business section.

• **Summary:** For a decade, the Argentinian peso has been pegged to the U.S. dollar. In Jan. 2003 it was cut loose and plunged, until it is now worth only about 34 American cents. While the devaluation has been painful for most Argentines, it has helped farmers, by essentially wiping out most of their debts since their products are now much cheaper overseas and exports sales are now worth three times as much. Last year Argentina's trade surplus tripled to \$15 billion, and half of the country's total hard-currency earnings came from agriculture. Brazil is also enjoying a farm export boom.

Soybeans, now Argentina's main cash crop, are grown on 64 million acres. Bunge is expanding its operations in Argentina, while ADM, its giant rival, is doing the same in Brazil.

1947. Archer Daniels Midland Company. 2003. Turns out, raiding the fridge can be good for a broken heart: NutriSoy—It's all about a strong beat (Ad). *Vegetarian Times*. March. p. 7.

• **Summary:** This full-page color ad shows a woman raiding the refrigerator. The ad is about NutriSoy, the "all-natural soy protein ingredient that's helping to fortify some of your favorite foods, like breads, pastas, drinks, desserts, entrées, and more. The FDA has approved the claim that including 25 grams of soy protein per day as part of a diet low in saturated fat and cholesterol may reduce the risk of heart disease... So look for the NutriSoy logo." For more information visit [www.nutrisoy.com](http://www.nutrisoy.com).

1948. *ADM Health & Nutrition Update (Decatur, Illinois)*. 2003. ADM Kao launches Enova oil in Chicago and Atlanta. 5(1):1-2. April.

• **Summary:** Most conventional vegetable oils contain

three fatty acids per fat molecule. ADM's Enova contains predominantly diacylglycerols (DAG), fat molecules that contain only two fatty acids per molecule. Instead of being stored as fat, much of the oil is burned as energy, meaning that it shows great promise for helping to address the obesity problem in America.

1949. *ADM Health & Nutrition Update (Decatur, Illinois)*.

2003. ADM rebuilds vegetarian food plant. 5(1):5. April.

• **Summary:** In May 2002, ADM's vegetarian food plant in Decatur, Illinois, suffered a very serious fire. Out of the ashes arose a shiny new plant of about 100,000 square feet "that is the most sophisticated of its type, offering great products in a modern, meat-free environment."

1950. Archer-Daniels-Midland Co. 2003. What if we looked at the world as one giant farm field?... (TV ad). Newshour with Jim Lehrer. Television broadcast. PBS. April.

• **Summary:** "When crops grow where they grow best, we improve agricultural efficiency, make food more affordable, and feed a hungry world. ADM—The Nature of what's to come."

Note: For 6 months Soyfoods Center could not understand why ADM was running this ad. That changed in Sept. 2003 when: (1) *National Geographic* magazine published an article on slavery (Sept., p. 11) which noted that the arrival of large amounts of inexpensive American corn, imported under the NAFTA trade agreement, had "driven millions of Mexican peasant corn farmers out of business and off the land." Economists "suggest that for every ton of corn imported into Mexico, two Mexicans migrate to the U.S." And the penniless daughters are often forced into prostitution. (2) PBS broadcast a story on the plight of cotton farmers in Mali. Cotton, subsidized by governments in the USA and Europe, was being sold on the world market at prices below the cost of production in Mali, thus devastating small Mali cotton farmers and their families. These subsidies, it was argued, were illegal under World Trade Organization (WTO) rules. At a WTO meeting in Cancun, Mexico, in Sept. 2003, trade ministers from Third World countries walked out en masse over this issue of agricultural subsidies—among other things.

1951. Winchester, Teresa. 2003. NutriSoy Wholebean Powder for a growing organic market. *ADM Health & Nutrition Update (Decatur, Illinois)* 5(1):1, 3. April.

• **Summary:** This appears to be organic whole soy flour. "The potential for growth in the organic food industry today is prime. As consumers become more conscious of their health, their children's health, and the environment, their interest in products such as organic foods continues to grow. The organic dairy and meat industry has become especially popular as consumers continue to search for alternatives to traditional dairy and meat products that may have been

affected by antibiotics and growth hormones (1). Over the last 10 years, sales of organic foods have sustained double-digit growth, and this growth is expected to continue at 18-22 percent through 2005. In 2000, organic foods reached \$5.8 billion in U.S. consumer sales, making it the fastest-growing segment of the nutrition industry. This means organic foods growth surpassed supplements, natural foods, functional foods, and natural personal care products (1).

"In response to a growing market of the organic food industry, Archer Daniels Midland Company (ADM) offers up a new innovative product, NutriSoy® powder.

"NutriSoy powder is a spray-dried organic wholebean powder that may be used in many dairy products and beverages, such as soymilk, soy beverages, ice cream, yogurt, cream cheese, and sour cream. It is a revolutionary new product with a low flavor profile, and along with its nutrition quality and user-friendly form, NutriSoy powder is a highly versatile, easily adaptable product.

"NutriSoy powder is very adaptable to processing systems of manufacturers. In addition, its microfine particle size allows it to be nearly self-stabilizing, which may reduce the amount of costly stabilization ingredients normally required.

"Manufacturers can test new formulations and re-formulations in ADM's pilot plant and test facilities. ADM's team of research scientists consists of individuals specializing in specific areas of expertise. They are available to help with research and development challenges. These partner-like relationships go well beyond the traditional services of a grain merchandiser to add value to customers' operations.

"NutriSoy powder has a low flavor profile and smooth, rich mouthfeel that allows it to be used in a variety of flavor systems. These characteristics, in addition to its form, quality, and adaptability, make NutriSoy powder the ideal ingredient for manufactures.

"A consumer-preferred difference in flavor (as confirmed by outside sensory taste panels) is the result of using NutriSoy powder as the base material to make soy-based products. A consistent, great-tasting product can be easily produced using existing equipment at any dairy plant.

"The key component to a great-tasting soymilk-based product consists of the beans from which it has been made. ADM is known for its ability to source, procure, and process specific varieties of quality soybeans. ADM can offer consistent high quality on a global basis. Inside of the dedicated processing facility that manufactures NutriSoy powder is a dedicated processing line, which ensures a consistent, high quality finished product. ADM's unique continuous process eliminates variations in the final powder product, which means the manufacturer can be assured of consistent and efficient processing parameters within the plant.

"NutriSoy powder is a USDA-certified organic soy

product. ADM uses its vast experience from its global IP (Identity Preservation) program to ensure that organic NutriSoy powder meets all of the standards set up under the USDA organic certification program.

"(1) Organic Trade Association. Katherine DiMatteo. Organic Offerings: More Than Just Great Produce. 2001." Address: Communications Manager, ADM.

1952. *World Grain*. 2003. ADM builds soy plant in China. 21(5):12. May.

• **Summary:** ADM is building a soy processing facility in Shanhaiguan, China, in a partnership with Wilmar Holdings. The plant will make ADM's Arcon line of soy protein concentrates, specialty soy flour for soy sauce fermentation, and whole edible soybeans. The plant is expected to be completed by mid-2004.

"Headquartered in Singapore, Wilmar Holdings is a leading processor, merchandiser and distributor of edible oils, oilseeds and related products in Asia and also sources and markets these products globally."

This facility will strategically enhance ADM's position in fulfilling the region's needs for both animal and vegetable proteins.

In a separate report, China's State Grain Bureau predicted soybean crushing capacity could rise 27% this year, as new plants are built. That increase in capacity will probably increase Chinese demand for soybeans from the USA, Brazil, and Argentina.

China imported 10.385 million tonnes (metric tons) of soybeans in 2001-02 according to the USDA; this number is projected to reach 16 million tonnes in 2002-03.

1953. *ASA Today (St. Louis, Missouri)*. 2003. ASA/India spurs major growth in soy consumption. 9(8):6. June.

• **Summary:** In March, the American Soybean Association had a booth at the premier food and beverage trade show in India, the 18th International Food Exhibition, called AAHAR 2003, in New Delhi. "Aahar" means food in Hindi. Eight companies participated in ASA's Soy Pavilion: (1) General Food Ltd. (maker of soy nuts, soy oil, soy flour). (2) M.P. State Oilfed (soy biscuits, soy nuggets [TVP]). (3) Protein Technologies International (soy protein isolates). (4) Ruchi Soya Industries (soy flour, soy chunks, soy oil). (5) Soy Appetite (Soy milk, soy rusk, tofu). (6) Sonic Biochem Indore (Full fat soy flour, defatted soy flour). (7) S.S. Agro Industries (fermented black soybeans, soy chunks, soy granules). (8) S.S.P. Ltd. (SSP, soy milk equipment / machinery).

1954. Dominy, Suzi Fraser. 2003. China: Ambitious plans for soy self-sufficiency. *World Grain* 21(6):31. June. [1 ref]

• **Summary:** China plans to increase domestic production of soybeans and has an ambitious long-term plan to become the world's largest producer of non-genetically engineered

(GE) soybeans. In 2002-03 China's soybean production is expected to reach a record 16.6 million tonnes (metric tons), up 6% from last year and up 59% from 10 years ago. China's Ministry of Agriculture says areas of increased soybean production will be 127 counties in the northeastern provinces of Liaoning, Jilin, and Heilongjiang, as well as the northern region of Inner Mongolia.

China's rapid economic growth has increased demand for meat and fish, and consequently for soybean meal used in animal and aquatic feeds.

Soybean crushing plants now under construction or just built will increase China's crushing capacity by 27% this year, to 57 million tonnes—according to China's State Grain Bureau. ADM, during the last 3 years, has signed joint agreements with the Chinese government to operate 12 crushing plants in China. This year it announced a 50-50 joint venture with Wilmar Holdings in Singapore to construct a new plant in Shanhaiguan, near Tianjin, east of Beijing.

China's crushing industry is now divided into two: large crushers of mostly imported soybeans located mainly near the coast in southern China, and traditional smaller crushers of domestic soybeans in the main soybean growing provinces of northeastern China.

In 2002 China imported 11.48 million tonnes of soybeans from Brazil, Argentina, and the USA, worth US\$2.3 billion. The amount is expected to increase by 50% this year.

A color illustration shows ADM's joint venture in the East Ocean facility.

1955. Andreas, Lowell. 2003. History of work with soybeans (Interview). *SoyaScan Notes*. July 9. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Lowell grew up the youngest of six children, who were born in the following order: Osborn (born in 1903), Albert, Lenore (the only sister), Glenn, Dwayne (born 4 March 1918), and Lowell (born in 1922). Their parents were married in Sterling, Illinois, on 27 Nov. 1902, and soon moved to Minnesota. Four of the five boys (except Osborn, who later became a concert pianist with the Washington Symphony Orchestra, English teacher, and author), shared an almost lifelong involvement in the family's feed and oilseed processing businesses. Osborn was also involved, but only briefly in the mid-1930s.

In about 1927 Lowell's father, Reuben P. Andreas, started a feed compounding business named R.P. Andreas & Son, in Lisbon, Iowa; the "Son" was Albert. He obtained his soybean meal from A.E. Staley Mfg. Co. in Decatur, Illinois; the meal did not come from Joe Sinaiko [who began processing soybeans in the spring of 1928 at Iowa Milling Co. in Cedar Rapids, Iowa]. Reuben's products were sold as "Andy's Feeds." In 1934 Reuben took three more sons (Osborn, Glen, and Dwayne) into the business and changed its name to R.P. Andreas & Sons. Lowell, the youngest, was

still in high school.

In 1938, on the advice of his son, Dwayne (who was so advised that year by Mr. A.E. Staley), Reuben decided to start a soybean processing company in Cedar Rapids, Iowa. The family bought an animal feed manufacturing mill in Cedar Rapids, contracted for a soybean processing plant to be built next to it, and imported solvent extraction equipment from Italy; the manufacturer may have been Bonotto. Next to the solvent extraction plant they had a livestock feed plant built. The family (Reuben, Lowell, Dwayne, Glen) moved to Cedar Rapids (12 miles to the northwest) and in 1938 the new company, named Honeymead Products Co., began processing soybeans into oil and meal.

The name "Honeymead" was coined by one of Lowell's brothers (he does not remember which one) in about 1938 in Lisbon, Iowa. The company was incorporated in Iowa.

In about 1944 Honeymead bought land in Washington, Iowa, and had a soybean crushing plant built on it. Shortly thereafter Honeymead had another soybean crushing plant built in Spencer, Iowa. The soybean oil and meal from both plants were sold on the open market.

Note: In May 1945 Cargill purchased the Honeymead plant at Cedar Rapids, Iowa. By March 1947 Cargill also owned the former Honeymead plants in Spencer, Iowa, and Washington, Iowa. Reuben Andreas, Lowell's father, was an entrepreneur and a good businessman. His sons learned much about business from him. Lowell recalls, "We never talked about sports at the dinner table." Reuben was a Mennonite in his youth, but Lowell recalls that "we did not grow up in a Mennonite home—even though Dwayne likes to eulogize about that"—his Mennonite upbringing and values. Reuben remained actively involved on a day-to-day basis with the family solvent extraction plants and the businesses until they were sold to Cargill.

Glen, Dwayne, and Lowell Andreas each learned a lot about soybean processing from Joe Sinaiko—who let them (his competitors) observe operations in his plant in Cedar Rapids. "In those days, there was room for a lot of competitors," Lowell recalls. "Joe was honest and stuck by his word." He also recalls learning about controlling the moisture in the soybeans being processed and the moisture in the meal being sold, controlling the fat content of the meal produced, and doing everything with a few people as possible. Lowell did this by observation in Joe's plant; Joe never "taught" these things to the Andreas brothers.

Lowell's mother, Lydia, died in 1938, when he was age 16. Lowell's father, Reuben Andreas, had several strokes during World War II (which removed him from business life), later remarried, and died in about 1958.

Lowell first attended Wheaton College in Illinois for 2 years, then went for 2 more years to the University of Iowa in Iowa City. He majored in philosophy (medieval) at both places. Today Lowell believes that philosophy, which taught him to think, reason, and concentrate on a subject, is

an excellent major for business leaders—much better than an MBA degree. Reuben was the only member of the Andreas family who entered the military during World War II. He volunteered and served in the Army Medical Corps in the U.S. for 4½ years; he was in limited service because of his eyesight, so he developed plans to train medics. During the war he married Nadine Hamilton. After the war he returned to Cedar Rapids, where he worked in one of the family owned businesses that insured turkeys; he was an adjuster for turkey insurance for about a year, then the family heard that a soybean plant in Mankato [Mankato Soybean Products Co.] was for sale.

In 1947 Dwayne and Lowell bought that plant and renamed it Honeymead, and Lowell and his wife moved to Mankato from Cedar Rapids to run the plant; “Dwayne was the visionary; I was the manager.” Dwayne continued to reside in Minneapolis, where he was vice-president of Cargill, but he would visit the Mankato plant from time to time.

In 1960 Dwayne and Lowell sold the Honeymead plant in Mankato to the Farmers Union Grain Terminal Association (GTA). Lowell had a contract with GTA to manage the company for them for 10 years. After the sale, in 1964 Dwayne and Lowell started National City Bank in Minneapolis; it was Dwayne’s idea, but Lowell was interested in finance and had it looked like a good business to be in. In 1965 Shreve “Bud” Archer, Jr. of ADM offered to sell Dwayne and Lowell a block of ADM stock [100,000 shares at about half its book value, for a total of \$3.3 million], which amounted to effective control of the company, if they would agree to come in and run ADM—a company that was in decline, had too many workers and was very poorly managed. Dwayne and Lowell saw ADM as a company with great potential if they could turn it around. Dwayne owned 60% of the block of stock and Lowell owned 40%.

Both Dwayne and Lowell moved to Minneapolis, where ADM was headquartered. Lowell stayed there for 1 year. Both men quickly realized that ADM needed “total reorganization” and the first step required moving the headquarters from Minneapolis to Decatur, Illinois,—where they built a new office building. All employees were offered their same jobs in Decatur or generous severance pay if they chose not to move. ADM lost 200 people in the move—without laying off anyone and without problems. Downsizing was the main reason for the move, yet the employees felt they had been treated fairly. By early 1967 Lowell was executive vice president of ADM, and by mid-1968 he was president—focusing on processing and trading. In about 1967 Lowell moved to Decatur with the company, but he told Dwayne at the time that, if he could afford to, he would like to retire at age 50—his ambition since he had gone into business. At age 49 Lowell reminded Dwayne that he had one year left and that he had hired and groomed the

man (Donald B. Walker, former vice president of Ralston Purina, and a good friend) to replace him. True to his word, Lowell retired in 1972 at age 50 and moved with his wife back to Mankato. He still owns his ADM stock and today he has residences in Mankato, Naples (Florida, on the Gulf of Mexico), and Grand Cayman (Cayman Islands, in the Caribbean northwest of Jamaica). Lowell has a daughter, Pamela, and a son, David. Dwayne has one son, but he can never return to ADM. Address: Mankato, Minnesota.

1956. Callewaert, Danilo. 2003. The soymilk industry and market in Europe (Interview). *SoyaScan Notes*. July 18. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Alpro is by far the leading manufacturer of soymilk in Europe; they control more than 50% of the market—for sure. Last year, Sanitarium Foods introduced their So Good soymilk in gable-top cartons in the UK; they were followed in the UK by Alpro. Both companies use ESL (extended shelf life) packaging. There is less refrigerated food storage in Europe, and cow’s milk is generally non-refrigerated, often sold in aseptic cartons or sterilized bottles.

The soymilk market in Europe is now doubling every 3 years, or about 25% a year—which is remarkable for a food or drink. The largest soymilk maker in France is Triballat (Sojasun brand). In Germany a new competitor is Natumi GmbH, owned by Bruno Fischer. In the UK the largest is Haldane Foods, owned by ADM; also Sanitarium Foods (So Good brand, made from soy protein isolates).

The best selling soymilk package size for Alpro is 1 liter; the next best, in terms of number of packs, is 250 ml. Alpro does not have 2-liter packs. The most popular soymilk flavors for Alpro are vanilla, followed by chocolate (both milk chocolate and dark chocolate; the latter is sold only in France). Alpro continues to make soymilk puddings, and the market is steadily growing. Initially the packaging was bricks but today the pudding is sold only in cups. Alpro also makes fermented soymilk yogurt (4 x 125 gm and cups of 500 gm), and soymilk ice cream (under both the Alpro and Provamel brands; flavors are vanilla and chocolate).

In terms of volume, the Alpro brand (sold in supermarkets; usually non-organic) greatly outsells the Provamel brand (sold in health food shops, and all organic).

Two small companies in Europe make soy cheese: Sojami in France, and Dirk deBuysere [de Buysere] in Belgium, near Rouge, but his product is hard to find. Neither of these contain casein. They are not solid cheeses but rather spoonable / spreadable cheese.

Some soymilks are imported to Europe. Vitasoy is imported into the UK. Yeo Hiap Seng is imported into France (made in British Columbia and also in Singapore). A soymilk made in Argentina is imported into Spain by a big dairy company, which may also be making some soymilk itself.

The UK has by far the largest consumption of soymilk of any country in Europe. France is probably No. 2, followed

by Germany. However on a per-capita basis, Belgium is probably No. 1—even ahead of the UK. That is probably because of all the work that Alpro has done in educating the people of Belgium as to the benefits of soymilk. Address: Alpro, Wevelgem, Belgium.

1957. CHS—Cenex Harvest States Cooperatives. 2003. History highlights of CHS (Website printout—part). www.chsco-ops.com 7 p. Retrieved July 18.

• **Summary:** “Cenex Harvest States was formed in 1998 by a merger between two regional cooperatives, Cenex, Inc. and Harvest States Cooperatives. The following highlights are key dates in the history of CHS.”

1929—North Pacific Grain Growers, Inc. (NPGG) is organized as a regional cooperative, with 60 affiliated local cooperatives. The original 17-member board of directors holds its first meeting on 19 Dec. 1929 at Lewiston, Idaho.

1931—Cenex, originally the Farmers Union Central Exchange, is founded Jan. 15. First offices are in downtown St. Paul, Minnesota.

1938—The Farmers Union Grain Terminal Association (GTA) opens for business in St. Paul, Minnesota, on June 1 with 121 affiliated cooperatives. The new regional cooperative operates one terminal elevator in St. Paul and two branch offices in Duluth, Minnesota, and Great Falls, Montana. NPGG moves its office to Portland, Oregon.

1960—GTA purchases the Honeymead soybean processing plant [Mankato, Minnesota] and the Archer Daniels Midland elevator line in southern Minnesota.

1975—GTA begins leasing the St. Paul Number Two Terminal, a corn and soybean barge-loading terminal on the Mississippi River.

1977—The Honeymead division of GTA purchases Holsum Foods of Waukesha, Wisconsin.

1979—Member-owners purchase more than \$1 billion in goods and services from Cenex.

1981—Cenex marks 50 years of service to agriculture, serving over 1,500 cooperatives in 15 states.

1983 June 1—North Pacific Grain Growers (NPGG) and GTA merge to form Harvest States Cooperatives.

1987—Cenex joins with Land O’Lakes to form the Cenex/Land O’Lakes Ag Services marketing joint venture.

1992—Harvest States reorganizes Holsum Foods and Honeymead to form the Grain and Food Processing Group. Holsum Foods division acquires Gregg’s Foods, Portland, Oregon.

1993—Cenex members officially adopt Cenex, Inc. as the regional cooperative’s name. The Holsum Foods division acquires Miami Margarine Co., Cincinnati, Ohio.

1995—Harvest States’ annual grain volume tops 1 billion bushels for the first time in history.

1996—Harvest States reorganizes: Oilseed Processing & Refining represents Honeymead and related processing / refining interests.

1997—Harvest States forms two defined business units—Wheat Milling and Oilseed Processing & Refining—and offers members opportunities for direct investment and returns on Equity Participation Units. Also: Plans are announced for a new soybean processing and refining operation near the Minnesota–South Dakota border.

1998 June 1—Cenex and Harvest States unite to become Cenex Harvest States Cooperatives, an integrated agricultural foods system linking producers to consumers.

1999—Cenex Harvest States posts \$86 million in net income on sales of \$6.3 billion for fiscal 1999.

2000—CHS Cooperatives is adopted as the name used for the company, along with a new logo.

2001—CHS ends its defined investment program that allowed producers to participate directly in its wheat milling and soybean processing operations.

2002 April—Harvest States division of CHS Cooperatives breaks ground at the construction site of its second soybean crushing facility just outside Fairmont, Minnesota. Note: Production start-up is scheduled for early Oct. 2003 and a community open-house is planned for early September. This plant will be able to crush more than 220,000 bushels/day of soybeans. Situated on 26 acres of a larger 200-acre site, the plant will start with 40 new employees.

2003—Harvest States, the grains and foods division of CHS Cooperatives, announces the opening of Harvest States do Brasil Ltda. in Sao Paulo, Brazil, a wholly owned subsidiary originating and marketing soybeans from Brazil to customers nationwide in the USA. Address: St. Paul, Minnesota.

1958. *ADM Health & Nutrition Update (Decatur, Illinois)*. 2003. Soy intake in the prevention and treatment of breast cancer. 5(2):1-4, 6. Aug. [47 ref]

• **Summary:** Contents: Introduction. Animal and epidemiological data. Clinical trials (human). Conclusions—Adult soy intake and breast cancer risk. Early soy intake and breast cancer risk. Can soy stimulate breast cancer growth? Soy, isoflavones, and tamoxifen: Are there relevant interactions? Overall conclusions.

1959. *Inform*. 2003. ADM celebrates 101 years. 14(9):586. Sept.

• **Summary:** The company was born in 1902 as a linseed business, started by John Daniels and George Archer in Minneapolis, Minnesota.

Since 1969 ADM has been headquartered in Decatur, Illinois.

ADM “is now one of the world’s largest agribusiness companies, with over 24,000 employees in 70 countries and more than 260 processing plants worldwide. A leader in the processing of soybeans, corn, wheat, and cocoa—not to mention the leading global supplier of nearly 1,000 food ingredients—ADM tags itself ‘the nature of what’s to come.’”

believing it can unlock the potential of nature to improve the quality of life for everyone.”

Having mastered flaxseed / linseed processing since the early 1920s, ADM began to diversify. And diversification has been the secret of its success, says Tony DeLio, vice president of marketing and external affairs.

Photos show: (1) The Daniels Linseed Co. that was the beginning of ADM. (2) ADM Headquarters in Decatur.

1960. *Iowa Soybean Review* (Iowa Soybean Association, Urbandale, Iowa). 2003. Soyfoods: New products equal new markets. 14(8):14-15. Summer.

• **Summary:** Discusses Wildwood Natural Foods and ADM's Soy-& products.

1961. Nelson, Tina. 2003. SANA [Soyfoods Association of North America] 25th anniversary celebration. September 4, 2003. Washington, DC: Soyfoods Association of North America. 2 p. 28 cm.

• **Summary:** A brief and superficial story of the founding of the Soyfoods Association of North America in July 1978 in Ann Arbor, Michigan. Steve Demos and Lester Karplus, who were present at both the founding and at this reception, shared their reflections of the past 25 years. She thanks the chefs who created the evening's soy delicacies: Kim Galaez, Patricia Greenberg, Dana Jacobi, and Akasha Richmond. She also thanks and acknowledges the sponsors of the evening: ADM, Cargill, Hain-Celestial Group, Kellogg / Worthington Foods, Light Life, Solae LLC, Sunrich, Tetra Pak, Vitasoy-USA, and White Wave. And she welcomes special guests from USDA, FDA, and Capital Hill.

The talks ends: “Thank you all for coming and enjoy the soy treats and the historical documents and photos with your colleagues.” Address: Galaxy Foods.

1962. Soyatech, Inc. 2003. *Soya & Oilseed Bluebook 2004*: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 408 p. Sept. Comprehensive index. Brand name index. Advertiser index. 28 cm.

• **Summary:** On the cover is a pointillist / expressionist painting, with some of the dots being actual tiny soybeans. of the rear view of a farmer in a tractor plowing a field. On the inside front cover is a color ad from Natural Products Inc. (Grinnell, Iowa) titled “Applying the natural goodness of soy.” The company offers “New products. New technology. New ideas. Full line of enzyme active full fat soy products. Full line of roasted full fat soy products.” On the first page is a full page color ad from Bunge North America (St. Louis, Missouri). “Now more than ever. Since 1923 Bunge North America has enhanced the value of America's Harvests.” On the back cover is color ad from ADM Food Ingredients with the tagline: “For all of your food ingredient needs, ADM is the nature of what's to come.” The text states: “ADM offers the most complete line of over 500 ingredients and has the

expertise to apply them to a wide variety of great-tasting foods.” On the title page of the book is a bright yellow self-adhesive label containing “Your access code,” which expires in a year.

The Foreword, by Peter Golbitz of Soyatech, states: “This is the 16th edition [of the Bluebook] that we have produced and the 56th edition since the publication's inception by the American Soybean Association in 1947.” “World soybean production will reach 195 million metric tons this year, with an estimated value of \$41 billion before processing. This is enough soybeans to give every man, woman, and child on our planet over 30 kilos [66 lbs] each. This great resource can provide nearly half of an adult's protein needs for a year. Unfortunately, due to the imbalance of resource utilization between the developed and the developing world, many people still find it difficult to get adequate nutrition for themselves and their families. This results not only in poor health, disease and decreased productivity, but it also contributes to the lack of security and trust in the world.

“Now it seems that many people are becoming aware of the great resource that soybeans provide. Testimony to this is the great soyfoods boom that is currently underway in the United States and in other Western nations. In most Asian nations, soybeans have been providing protein for direct consumption for centuries... From South and Central America, to Africa and India, soybeans are finding their way into new food products and home kitchens.” Address: 1369 State Hwy 102, P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

1963. Archer Daniels Midland Co. 2003. Annual report: Positioning our global franchise. P.O. Box 1470, Decatur, IL 62525. 48 p. Oct. 28 cm.

• **Summary:** “More important than any single market position, ADM is well diversified on a global scale, prepared for changes in market conditions and able to capitalize on a wide range of market conditions.” Net sales and other operating income for 2003 (year ended June 30) were \$30,708.033 million, up 35.8% from 2002. Net earnings for 2003 were \$451,145 million, down 11.8% from 2002, but far below the peak of \$796 million in 1995. Shareholders' equity (net worth) is \$7,069 million, up 4.6% from 2002. Net earnings per common share: \$0.70, down 10.3% from 2002.

ADM's most profitable business segment is “oilseeds processing,” which had an operating profit of \$337 million, down 13.2% from 2002.

“ADM is a world leader in the processing of oilseeds, primarily soybeans, as well as canola, cottonseed, flax and sunflower seeds. We produce two main products from oilseeds: protein meal for use in animal feed, and vegetable oil for cooking, salad dressings, and other food applications. We continue to introduce new products to meet the changing needs of our customers. Our recently announced NovaLipid

line of zero and reduced trans-fat oils enables our food customers to meet new consumer demands for zero/low trans-fat products.

“The global shift in the production and consumption patterns of oilseeds continues. South America is currently the world leader in soybean production, with last year’s crop exceeding the output of the U.S. for the first time. At the same time, economic growth in the Far East, especially China, is resulting in improved diets and increased meat consumption. Protein meal demand expands as meat consumption grows, and ADM is well-positioned to meet these requirements.

“The growth opportunity in China is clear. China has a population five times that of the United States, but per capita meat consumption is only half as much as in the U.S. ADM is the only major oilseed processor to have a significant position in China with joint ventures that operate strategically positioned oilseed processing plants. These operations in China process locally produced oilseeds, as well as imported soybeans from North and South America.

“In fact, ADM is one of the largest exporters and processors of South American soybeans. We are well placed to take advantage of the growth in South America’s soybean crop as we expand our origination capabilities to support both local processing operations and export requirements for ADM facilities in China and Europe. We are adding several new grain origination and storage silos in Brazil, giving us a total of 91 silos in South America. Whether sourced or processed in the U.S., South America, Europe or Asia, ADM is strategically positioned for the growing needs of the global oilseeds market.”

Also accompanying the annual report is a “Notice of Annual Meeting.” G. Allen Andreas, age 59, Chairman of the Board and CEO, had a 2002 salary of \$2,795,833 plus \$153,909 other annual compensation. A photo (p. 3) shows G. Allen Andreas and Paul B. Mulhollem. Address: Decatur, Illinois.

1964. Book Publishing Co. 2003. Fall 2003 fall catalog (Mail order). Summertown, Tennessee. 64 p. 25 cm.

• **Summary:** Contains sections titled Soyfoods Cooking (p. 14-17, including books on tofu, miso, tempeh, soyfoods, meatless burgers, meat substitutes, and TVP), Healthy World Cuisine (Chinese, Japanese, Korean, Indian), Vegan Cooking (p. 24-32), Vegetarian Cooking (p. 33-36), Native Voices (Native American books and authors) (p. 45-61). Address: P.O. Box 99, 415 Farm Road, Summertown, Tennessee 38483. Phone: 1-888-260-8458 or 931-964-3571.

1965. Saunders, David. 2003. Update on the Soy Protein Council (Interview). *SoyaScan Notes*. Nov. 21. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The Soy Protein Council has not been very active during the past few years. They have no annual budget

except for a fixed management fee (overhead, which pays indirect costs including part of David’s salary), deal mainly with regulatory issues (such as USDA, FDA, and school lunch programs), and are paid on a project by project basis. There are three members: Cargill, ADM, and Solae (a joint venture of DuPont and Bunge).

The member companies do promotion at the company level. They have seen much growth in demand for soy protein products since Oct. 1999 when the FDA issued its heart health claim for soy proteins.

Since one of the members was involved in anti-trust and price-fixing issues several years ago, that company’s attorneys have advised that they should not be meeting in a closed room with their competitors. When they do meet, David hires an anti-trust attorney to be present at the meeting, makes sure that there is a clear agenda that is adhered to, and that detailed minutes are kept.

NOPA (formerly NSPA) used to be managed by Sheldon Hauck & Associates, but they left for another management firm. Address: Executive Director, Washington, DC.

1966. Nordquist, Ted. 2003. Big companies increasingly active in the soyfoods industry. DuPont is pushing for an organic standard for a new soy protein isolate made without using hexane (Interview). *SoyaScan Notes*. Dec. 4. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Big companies like DuPont, ADM, and Solae are increasingly active in the Soyfoods Association and at industry conferences. An increasing percentage of the money seems to be coming from them. Soy protein isolates are widely discussed as “soy” but Ted has never heard anyone discuss how they are made—using hexane solvent. Address: TAN Industries, Inc., 253 Sacramento St., Suite 1120, San Francisco, California 94111. Phone: 415-495-2870.

1967. Jacobi, Dana. 2003. Serving soyfoods on Capitol Hill (Interview). *SoyaScan Notes*. Dec. 20. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Each year the American Soybean Assoc. (ASA) has a board meeting in Washington, DC. At that time they have an event for Congress. This year ASA decided to “host its first Soyfoods Luncheon,” which they announced in a 2-page news release. Representative Jo Ann Emerson (R-MO) served as the Congressional host of the event. White Wave, Solae, Soyatech, and SANA sponsored the event but it (incl. Dana and her food) was paid for by ASA.

Apparently Nancy Chapman of the Soyfoods Association told ASA that Dana was a professional chef with expertise in soyfoods. So Dana got a call from Anna Pavolva of ASA inviting her take responsibility for catering this event. Dana ended up hiring a local caterer, because she lives in New York City and could not make all the preparations at such a long distance. Dana supplied the recipes and supervised the food preparation.

The event took place at lunchtime on Tuesday, 1 April 2003 at the Rayburn Building in Washington, DC. Dana was told to prepare for 200 people, but about 250-350 showed up—most of them staffers, but there were a few members of Congress. The room (29 by 52 feet, or 1,508 square feet) was packed, with standing room only. Food was served on four draped tables, buffet style like a real catered party, with real China plates (no paper plates), and spoons and forks. The attendees ate *all* the food. Dana's meatless recipes (the majority of which came out of her latest cookbook), all on one long table were: Sweet & sour meatballs. Beans and franks (Using Bratos for the franks). Macaroni salad (using ADM's Soy-7 macaroni). Honey mustard with tofu (served 3 kinds of donated soyburgers from Boca and Morningstar Farms). Chocolate velvet mousse. Edamamé. Finger sandwiches with soynut butter and jelly.

ASA hired a chef (Tod Schiller) from one of Washington, DC's premier restaurants, Kinthead's, and he conducted a cooking demonstration at the luncheon; at a second table he served a very elegant soyfoods recipe that included edamamé.

White Wave / Dean Foods had a 3rd table at which they served Silk Cappuccino soymilk out of a cooling machine. On a 4th table at the end of the room was Solae 8th Continent soymilk and Luna Bars (cut into pieces for finger foods). ASA and United Soybean Board had a 5th long table on which was information (leaflet, pamphlets) and exhibits about soybeans and soyfoods.

Dana mingled anonymously and talked with many of the staffers. "They were astounded by all the good food. This sort of event helps greatly to dispel the negative image that soy still has in terms of how it tastes and looks." Dana notes: "My interest is not in preaching to the converted, it is in introducing soyfoods to the rest of the people." Address: New York City.

1968. Archer-Daniels-Midland Co. 2003. Years ago some predicted a nutritious meal today would look something like this... (TV ad). Newshour with Jim Lehrer. Television broadcast. PBS. Dec. 16.

• **Summary:** "But ADM believes breakthroughs in nutrition will continue to come from nature. Like heart-healthy alternatives with foods made from soy. Even vegetable oils that help you curb fat and loose weight. If we are what we eat, the future is looking beautiful. ADM—The nature of what's to come."

1969. FBX. 2003. Soyfoods Summit: February 18-20, 2004. Hyatt Regency La Jolla, San Diego, California. [www.foodbev.com](http://www.foodbev.com) (Brochure). Little Falls, New Jersey: IQPC. 12 p. 28 cm.

• **Summary:** This brochure begins: "The Food & Beverage Exchange is proud to present its 7th Annual Soyfoods Summit." In association with Soyatech. Media partners:

Nutrition Business Journal, The Soy Daily, Nutraceuticals World. The conference, which is being organized by The Food & Beverage Xchange, a division of IQPC (London, England), will have two separate tracks of presentations: (A) Technology & applications, and (A) Health benefits of soy. Summit chairs: Peter Golbitz, president, Soyatech, is chair of track A. Geri Berdak, Director, Public Affairs, The Solae Company, is chair of track B.

The facts: (1) "The US Soyfoods market has grown at an average annual rate of 14% per year for the past ten years and hit \$3.65 billion in 2002." (2) "Per capita soy consumption will rise by 50% in the next 5 years." The main speakers, with their organization, track, an outline of their talk, and a small photo are given. Track A: Dr. Jonathan F. Gordon, Firmenich Inc. Hiraoki Iwamoto, Tendre Corp., Japan (frozen tofu). Phil Fass, ADM. Dr. Michael Shemer, Tivall Corp., Israel. Motohiko Hirotsuka, Fuji Oil Co Ltd, Japan. Brad Strohm, Wenger Manufacturing Inc. Mian Riaz, Texas A&M University. KeShun Liu, Univ. of Missouri at Columbia. Victor Braverman, Braverman & Associates, Mexico. Jorge Arturo Canas Diaz, Central Heledra Diaz, Costa Rica.

Track B: Milagros Virginia C. Lim, Nestle Philippines Inc., Philippines. Mark Messina, Nutrition Matters Inc. John L. Williams PhD, Univ. of South Dakota. Prof. Fujian Yang Zhenhua 851 Bio-Science Co Ltd, China. Omer Kucuk M.D., FACN, Wayne State Univ., Karmanos Cancer Inst. Helen Kim PhD, Univ. of Alabama at Birmingham. Prof. Mindy S. Kurzer, Univ. of Minnesota. Dr. Ari Babaknia, DrSoy. Wendy Barrett, Eat Smart. Deborah Miller, The Solae Group.

Day 1—General session at end of day: John A. Schillinger, PhD, Heartland Fields, LLC. Peter Hannam, First Line Seeds.

Day 2—General session running all day: Paul Lang, Natural Products Inc. Seth Tibbott, Turtle Island Foods. Tom Woodward, Tetra Pak, Singapore. Ted Nordquist, WholeSoy Co. Hsien-Hsin Chang, Lightlife Foods. Gerard Klen Essink, Prosoy Research & Strategy, The Netherlands. Frank Daller, Soyadairy, Canada. Daniel Burke, Pacific Soybean & Grain. Garnet Pigden, The Solae Company. Gerry Amantea, Hain Celestial Group Inc. Johanna McCoy, Soy Happy. Kim C. Kristoff, Gemtek.

Post-conference interactive workshops: Tim Redmond, formerly with American Soy Products. Patricia Godfrey & Danielle Karleskind, Cargill Soy Protein Solutions. Peter Golbitz, Soyatech.

For those who register and pay in full by Dec. 5, the Gold Package of conference plus three workshops the price is \$2,999. By Dec. 31 it rises to \$3,099. By Jan. 9 it rises to \$3,199. After Jan. 9 the full price is \$3,299. This does not include lodging and food. The price is \$1,299 for those who register by Aug. 1, but \$1,599 after Sept. 15.

Note: Talk with two people who will speak at this conference. They are paid no honorarium for speaking, and

they must pay their own transportation both ways and all room and board expenses while at the conference. Why do they go? Both say this gives them an opportunity to attend the conference free of charge, to have a nice vacation in a warm and beautiful part of California, and to meet new people and promote their ideas and (informally) their products.

1970. Mescher, Kelly. 2003. Gift giving for the holidays can include soy: Investing Checkoff dollars. *Iowa Soybean Review (Iowa Soybean Association, Urbandale, Iowa)* 15(3):22-23. Dec.

• **Summary:** Midwest Bakery in Charles City, Iowa, uses soy flour as a top ingredient to bake a variety of soy cookies and soy protein bars sold under the Soy Fields™ label. IM Healthy SoyNut Butter “is another great way to add both the nutrition and great taste of soy to the holidays.” It contains about 30% less fat than regular peanut butter. The Low Carb SoyNut butter has no sugar added.

The Original Well-Bean Coffee Co. Inc. founded by certified nutritionist / dietitian Claudia Delvecchio [Del Vecchio], uses equal parts premium Columbian coffee and locally grown organic soybeans, which are roasted and ground together. They sell 100 different flavors. Claudia developed the product when her mother-in-law was advised by doctors to consume soy after she was diagnosed with non-estrogen receptor breast cancer. Her body became sensitive to the coffee’s acidity; soy acts as a buffer, “mellowing” the coffee and making it less acidic. “She loved the soy coffee and brought it to the cancer center, and they all started drinking it.”

ADM makes Soy 7 pastas and textured soy proteins. Other gifts include cookbooks, such as those published by the Illinois Center for Soyfoods.

“Checkoff dollars have been invested in the Soyfoods Council to increase awareness and demand for soyfoods, thereby increasing demand for U.S. soybeans. (www.thesoyfoodscouncil.com) Checkoff dollars were also invested in an educational campaign targeting school foodservice professionals to take an active, positive response to the national overweight epidemic (www.solveobesity.com).”

Note: Filling the cover of this month’s issue is a color photo of soy dishes and candles with the title “A soy season: New ideas for the holiday.” On the title page, under “About the cover” we read: “It’s easy to add a little soy to your holiday meal this year. Try some tofu in your mashed potatoes. Maybe some edamame in your mixed vegetables. Add some soynuts and a soy-based dressing to your green salad. And don’t forget... soy-based candles. For recipes and other ideas on how to include soy in your meal, contact Linda Funk, The Soyfoods Council, at lfunk@iasoybeans.com or call her at 1-800-383-1423.”

1971. Emmons, Didi. 2003. Entertaining for a veggie planet:

250 down-to-earth recipes. Boston, Massachusetts: Houghton Mifflin. viii + 470 p. Illust. Index. 23 cm.

• **Summary:** A friendly vegetarian cookbook. The index contains 35 entries for tofu, 19 for tempeh, 5 for edamame, 4 for seitan, 3 for miso

Recipes also call for: Adzuki beans, sesame seeds, and tahini.

The section titled “A friendly guide to unfamiliar ingredients” is a glossary with entries including: Adzuki beans. Asian fish sauce (not vegetarian; usually made of an extract of fermented anchovies. Can be replaced by Lee Kum Kee’s Vegetarian Stir-Fry Sauce). Barley miso (See Miso). Black beans, Chinese fermented (See Chinese fermented black beans). Black sesame seeds. Brown miso (See Miso). Chinese fermented black beans (“They are often very salty; do not rinse them, just salt your dish less... They keep indefinitely in the fridge”). Edamame (“Young, blanched soybeans.” They are commonly eaten in the pods as a snack; the pod is inedible. Also sold podless for cooking). Hatcho miso (See Miso). Miso: The five types are: Barley miso (*mugi miso*), Brown miso (*genmai miso*), Hatcho miso (made from soybeans only), Red miso (*aka miso*), White miso (*shiro miso*). Sesame seeds. Sesame tahini. Tempeh (see also p. 231, “Tempeh: the next great frontier”). Tofu (see also p. 217, “Tofu: the other white meat”). TVP (texturized vegetable protein). Vegetarian oyster sauce (Amoy brand). Vegetarian stir-fry sauce (not as sweet as vegetarian oyster sauce. Look for the Lee Kum Kee brand). Address: Author of the book *Vegetarian Planet* and the chef of *Veggie Planet*, a restaurant in Cambridge, Massachusetts.

1972. Harper, Judson E. 2003. *World Book Encyclopedia: Soybean*. Chicago, Illinois: World Book, Inc. A Scott Fetzer Co. 22 volumes. See Vol. 18, p. 689-93.

• **Summary:** Contents: Introduction. The soybean plant. How soybeans are used: Soy meal (incl. livestock feed, soy flour, soy grits, soy protein concentrate, isolated soy protein, textured vegetable protein {TVP}, extruded soy protein, spun soy protein, products that resemble meat, soy derivatives {food flavorings, soy milk, soy sauce, fertilizer, fire extinguisher fluid, insect sprays, paint}), soy oil. How soybeans are grown: Soybean farming in the USA, diseases and [insect] pests. How soybeans are processed. History. Scientific classification.

Crude soybean oil is made into three basic products: (1) technical refined oil used for industrial purposes, (2) edible refined oil, made by deodorizing technical refined oil, and (3) lecithin.

History: “Soybeans are one of the oldest crops raised by human beings. Historians believe the plant first grew in Eastern Asia and was cultivated about 5,000 years ago. The ancient Chinese considered soybeans their most important crop, and one of the five sacred grains necessary for life.”

Note: Each of the previous statements about early soybean

history is incorrect.

See also: Julian, Percy L.; Tofu. Note: What arbitrary choices! How about William Morse, USDA, Henry Ford, miso, soymilk, tempeh? Address: Chicago, Illinois.

1973. **Product Name:** Soy7 Soy Dry Mixes [Burger Mix, Chili Mix, Burger Bits, Taco Mix, Recipe Strips].

**Manufacturer's Name:** ADM Health and Nutrition.

**Manufacturer's Address:** 4666 Fairies Parkway, Decatur, IL 62526. Phone: 1-800-510-2178.

**Date of Introduction:** 2004 March.

**Ingredients:** Incl. NutriSoy soy protein.

**Wt/Vol., Packaging, Price:** Paperboard box.

**How Stored:** Shelf stable.

**New Product–Documentation:** See next page. Leaflet (8½ by 11 inch, color, glossy, front and back) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2004. March. “What is Soy7?” Includes 6 pastas and 5 dry mixes. Each package contains at least 7 grams of all-natural Nutri-Soy soy protein. The ingredients are not listed.

Question: Is NutriSoy soy protein a flour or an isolate?

1974. **Product Name:** NutriSoy Organic Whole Bean Powder.

**Manufacturer's Name:** ADM Health and Nutrition.

**Manufacturer's Address:** 4666 Fairies Parkway, Decatur, IL 62526. Phone: 1-800-510-2178.

**Date of Introduction:** 2004 March.

**Ingredients:** Whole organic soybeans.

**Wt/Vol., Packaging, Price:** 20 kg net bags.

**How Stored:** Shelf stable.

**New Product–Documentation:** See page after next.

Leaflet (8½ by 11 inch, color, glossy, front and back) sent by Patricia Smith from Natural Products Expo West (Anaheim, California). 2004. March. It “is a revolutionary ingredient that has what most soy products are missing—great taste.” Only hot water is used in processing. Smooth mouthfeel—microfine texture. Applications: “Soy milk. Soy beverages. Ice cream. Cookies and crackers. Yogurt. Drinkable yogurt. Cream cheese. Sour cream.”

1975. Almquist, Brett. 2004. Soy wax in America (Interview). *SoyaScan Notes*. April 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Many candlemakers buy their soy wax from Candleworks (the distributor); it is made for them to their (Candleworks’) patented formula by Cargill. Brett makes his own soy wax using formulas he has painstakingly developed (with a research company) over 2½-3 years. The key variables are the level of hydrogenation of the oil (one or more levels) and the hardeners. He buys all the ingredients / raw components (such as hydrogenated soy oil, fragrances, etc.) and blends them himself. The most difficult type of

candle to make with soy wax is pillar candles—which are his forte. Research has shown that pillar candles made from his soy wax formula are of better quality than those made from Candleworks’ soy wax. He does not plan to patent his formula “since a patent is only as good as the enforcement you give it.” When you patent a formula, you give away most or all of your secrets; it becomes public knowledge.

Two years ago, the National Candle Association commissioned a burn test of different types of candle waxes. They compared pure paraffin, pure beeswax, and 6-8 vegetable wax formulas. They made a 3- by 3-inch pillar, unscented, with the same wick in all. They measured diameter of the melt pool, rate of consumption, etc.—nothing about soot. The results showed that his candles burned the best, better than even paraffin and bee’s wax.

He does not want to sell the wax for two reasons: (1) He does not want to start competing with himself; (2) You can’t make any money selling wax—in part because the price of soybeans is at a 15-year high. His candles now cost about 10% more than paraffin candles. Most of the hydrogenated soy oil in America is made by ADM (his source) and Cargill. Some candle makers use straight hydrogenated soybean oil in their candles; it will work, but the quality of the candles is mediocre.

Candleworks sells most of its oil in liquid form in large quantities—such as tankerloads (40,000 lbs). But most smaller and medium-sized candlemakers can’t handle or buy liquid wax. They buy it in solid form, pelleted or spray dried.

Brett is not sure who the largest manufacturers of soy wax candles are. He thinks his company is in the top three. He has the most diverse product line and the most unique, upscale look. Colonial is a 95 year old company that sells mostly paraffin candles, but also sells “soy blends” which contain more than 50% paraffin. Hannas in Fayetteville, Arkansas, is very large, but they make much more besides candles—such as soaps, and they pour their soy wax in frosted glass so that defects on the surface aren’t visible. Hannas is not one of the biggest makers of paraffin candles; they focus on lower-cost candles—as for Walmart. lotions, bath salts, etc. They cannot do pillars, Their soy votives are very soft (2 oz), so it is hard to ship them. Yankee is another big candle company, but they don’t so much soy. One company that frustrates Brett is Bean Pod (Iowa). They trademarked a name very similar to his and they use the same typeface. Candleworks is surely one of the largest, if not the largest, maker of bulk soy wax. But he has never seen Candleworks at gift shows.

Brett does not know which company made the first soy candles—at least 90% soy. Address: Founder and president, BeansWax Candle Co., P.O. Box 1151, Maple Grove, Minnesota 55311. Phone: 1-866-BEANSWAX.

1976. Richards, Michael. 2004. Life and work with candles: Part V. Preparing for Cargill (Interview). *SoyaScan Notes*.



# Soy7™

## What is Soy7™?

Soy7™ is a versatile line of six soy-enriched pasta varieties and five dry mix entrée varieties, perfect for incorporation into a range of meal applications. Each Soy7 variety contains at least seven grams of all-natural NutriSoy® soy protein per serving. All Soy7 products are cholesterol-free and low in fat, provide a complete source of amino acids, and, of course, provide an excellent source of soy protein. Soy7 pastas also contain about 17 percent less carbohydrate than traditional pastas.

The Soy7 line is also convenient. Soy7 pastas cook just like traditional pastas, and Soy7 dry mix entrées are typically faster and easier to cook than traditional meat or poultry products—all without sacrificing taste or nutrition.

## Natural and healthy

Heart disease is the number one killer of Americans, so incorporating heart-healthy foods into the diet without having to change the way you eat is important. Great-tasting Soy7 products are not only versatile and easy to use, but they also have at least seven grams of NutriSoy brand soy protein per serving. The NutriSoy logo can be found on food products, such as Soy7, which contain a significant amount of great-tasting, heart-healthy soy protein per serving.

Products with the Soy7 logo qualify for the FDA-approved heart health claim, which states that "25 grams of soy protein a day, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease." Consumers need only look for the Soy7 logo to know that they are getting a great-tasting, heart-healthy dose of NutriSoy soy protein in each serving!

## Quality products

Aside from their versatility and heart-healthy benefits, Soy7 pastas and dry mix entrées are certified kosher. Pastas shelf-life is two years and mixes one year. Because they meet the American Heart Association food criteria for saturated fat and cholesterol for people over age two, Soy7 products also carry the AHA's heart-check mark.

GOOD NUTRITION, Great Taste!



## Advantages to retailers

Soy7 products can help expand retailers' customer base by appealing to those whose diets are restricted due to eating requirements. Plus, Soy7 products are ideal for vegetarians and for consumers who simply want to eat healthier without drastically altering their diets.

## Soy7™ Pastas

Varieties of Soy7 pasta available for retail sale:

- Lasagna
- Angel Hair
- Rotini
- Penne Rigate
- Elbow
- Spaghetti

## Soy7™ Mixes

Varieties of Soy7 dry mix entrées available for retail sale:

- Burger Mix
- Chili Mix
- Burger Bits
- Taco Mix
- Recipe Strips



Soy7™ is a trademark of Archer Daniels Midland Company.

ADM Natural Health and Nutrition • 4666 Faries Parkway • Decatur, Illinois 62526 • 1-800-510-2178 • Fax 217-451-4510  
www.soy7.com • E-mail: nutrition@admworld.com



## NutriSoy® Organic Whole Bean Powder

### NutriSoy® Organic Whole Bean Powder

NutriSoy® Whole Bean Powder is a revolutionary ingredient that has what most soy products are missing—great taste. Its sweet flavor is like no other soy product on the market. And, its microfine texture provides the added benefit of pleasant mouthfeel. These features combine to give you the edge you need to grab a piece of the exploding multi-billion dollar soyfoods market.

In fact, NutriSoy® Whole Bean Powder is a certified organic soy powder, which means you can take advantage of the organic food market's projected growth—up to 22% through 2005. Consumers will be looking for heart-healthy organic foods, so using NutriSoy® Whole Bean Powder is a great opportunity to market your products and your company!

Forty-two percent of Americans say they consume soyfoods once a month or more. Plus, organic non-dairy beverages—an ideal application for NutriSoy® Whole Bean Powder—is among the fastest-growing organic food categories. And, soymilk is the biggest seller among organic non-dairy beverages (made from soy, rice, nut, or oat).

ADM produces NutriSoy® Whole Bean Powder in a dedicated processing facility to take it from bean to powder in one facility, unlike other whole bean powders that go through multiple steps and multiple handlers.

Made from organic soybeans, NutriSoy® Whole Bean Powder is produced by spray drying whole soybeans, giving it a composition very similar to the natural whole soybean. The process also leaves protein, okara, isoflavones, phytosterols, probiotic sugars, and oil in their naturally occurring forms, giving the powder an excellent nutritional profile.



For ADM, producing organic products like NutriSoy® Whole Bean Powder is just one way we fulfill our goal of producing healthy ingredients derived from nature.

#### Why NutriSoy® Whole Bean Powder

- Amazing taste—sweet and pleasant, with none of the typical beany taste of most soy products
- Smooth mouthfeel—microfine texture means no grittiness
- Completely organic—no additives, no chemical treatments, no okara waste—in fact, hot water is the only processing step!
- Self-stabilizing—microfine particle size provides stabilizing properties in finished product systems, which could mean using fewer costly stabilizers
- Easy to use—dispersible, goes into formulation well, requires no special equipment
- Great nutrition—protein, okara, isoflavones, phytosterols, probiotic sugars, and oil all left in naturally occurring forms

#### Instant and dry food and beverages including:

- Soy milk
- Soy beverages
- Ice cream
- Cookies and crackers
- Yogurt
- Drinkable yogurt
- Cream cheese
- Sour cream

#### Backed by the NutriSoy® Brand

When you use NutriSoy® Whole Bean Powder, you can also take advantage of the NutriSoy® Branding Program, a program that provides education on the health benefits of soyfoods and reaches more than 200 million consumers each year. By following some simple guidelines and placing the NutriSoy® logo on your product's packaging, you can take part in the program, which includes national advertising that would feature your product. The NutriSoy® Branding Program also provides valuable tie-ins to the American Heart Association's Heart Walk events, which take place in more than 600 communities and reach more than 800,000 walkers annually.

May 24. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In about 1998 Michael proposed to his mentor, Herb Wilson, that they file a patent on their process for making candles using vegetable waxes. He discouraged Michael from it and said he would not pay for it—since that would reveal the process to all competitors, invite legal problems, and require an expensive defense of the patent. A patent is only good to the extent that it can be enforced legally.

Before Michael and Cargill met, Cargill had conducted some R&D for the Prang Soybean Crayon wax, but they had done absolutely nothing with candles. The Iowa Soybean Board has documented the fact, and it is well established, that Michael had sold soy candles (made from about 30% liquid soybean oil and 70% beeswax) nationally, including in nationwide chains, before Purdue Univ. (Indiana) announced the idea of making candles from soybean oil. Purdue was issued a patent on their process, which called for mixing soybean oil with petroleum waxes (esp. paraffin).

It was at this stage that Michael contacted Cargill; he wanted to replace his liquid soybean oil with solid (hydrogenated) soybean oil so he could decrease the percentage of expensive beeswax. So in about 1996-97 he began as a Cargill customer, ordering hydrogenated soybean oil from their plant in Sioux City, Iowa (plant manager Jody House). About 6 months after he started to buy vegetable wax from Cargill, Michael found a second source in ADM. On 10 Sept. 1999 Archer Daniels Midland Co. (ADM) invited Michael to their headquarters in Decatur, Illinois. Michael was now ordering stock edible hydrogenated soybean oil in 55 gallon barrels from both Cargill and ADM—to compare them. Each purchase was about \$25,000 to \$30,000—but they knew he was more than a hobbyist. ADM said they felt there was long-term commercial opportunity here, and they wanted to discuss it. On Sept. 10 Michael and ADM signed a confidentiality agreement titled “The secrecy agreement.” However, in that meeting, ADM did not provide Michael with any information. At the time Michael was working on paper coating wax with ADM so, in the margin of the agreement, they widened the scope to include “all paraffin wax replacements.” Michael already had another confidentiality agreement with a paper coating company that serves the fast-food industry. Nothing ever came of this agreement with ADM, however it was significant in the larger picture. To this hydrogenated oil, Michael added other vegetable fatty acids to make a candle wax. After Michael had been Cargill’s regular customer for about a year (they knew he was using it to make candles, but nothing more), they began getting calls from established candle makers and they realized that a new market was emerging for candles made from plant-based waxes. So they contacted Michael. But before they did, Michael had met with Zarley Sease, a law firm in Des Moines, Iowa, that does

all the patent and intellectual property work for Pioneer Hi-Bred International. In the fall of 1999, at their request and as a first step, he provided them with written documentation (timeline, history, description, documents) of developments related to candles during the previous 7-8 years leading up to his use of soybean oil in candles. The most complete copy is probably at the law firm, but Michael has most of it. He then worked with Zarley Sease to develop a patent application, which covered four specific formulas, two for the candle industry, a cosmetic base, and a package / paper coating wax. He was already thinking beyond candles. The patent was basically for a candle composed of about 85% hydrogenated soybean oil and 15% other vegetable fats from other plants. Candleworks had already been producing such candles for 3-4 years. On 5 April 2000 Michael’s patent application for a process for making plant-based candles was filed by Heidi Nebel-Sease of Zarley Sease—which had just defeated Cargill, on behalf of Pioneer, on a major seed issue.

When Cargill learned that Michael was working with Zarley Sease, they realized that they couldn’t just walk around or over him. At that point, in the summer of 2000, Del Craig of Cargill called Michael and asked if they could come to talk with him at his office about what they believed there was some new potential. When Del Craig walked into Michael’s building in Iowa, the plant was filled with black barrels with “ADM” stamped on each one. He said, “This breaks my heart; what can we do to make a deal.” It was the first time he realized that Michael was also buying from ADM. Address: President / Founder, Candleworks, Inc., 1029 Third St. S.E., Cedar Rapids, Iowa 52401. Phone: 319-363-1774.

1977. Archer Daniels Midland Company. 2004. Take your health to heart: NutriSoy 100% natural soy protein (Ad). *Vegetarian Times*. May. p. 69.

• **Summary:** See next page. This full-page color ad shows a young woman at 7:30 A.M. sending her child off to school, at 1:00 P.M. seated at a table on which is a laptop and a glass of soymilk, at 5:30 P.M. during her work-out in the gym, and at 7:00 P.M. eating a burger on a plate. “Eating foods with 25 grams of NutriSoy soy protein every day can help you maintain a healthy heart.”

1978. Messina, Mark; Erdman, J., Jr.; Setchell, K.D.R. eds. 2004. Fifth International Symposium on the Role of Soy in Preventing and Treating Chronic Disease. *J. of Nutrition* 134(5S):1205S-1293S. Supplement. May. Held 21-24 Sept. 2003 in Orlando, Florida.

• **Summary:** Findings of special interest include: In older Chinese women, higher intakes of soy protein and isoflavones were associated with greater bone density.

Supplements of isoflavones, calcium, and vitamin D resulted in an increase in bone density in Chinese women.

When breast-feeding women consume soy, soy



American Heart Association 

*Learn and Live.*

NutriSoy™ soy protein is proud to support the American Heart Association as a national presenting sponsor of the American Heart Walk.

# Take your health to heart

Your life is fast paced—you take care of your kids, your career, and your home. Remember to take care of yourself! Eating foods with 25 grams of NutriSoy® soy protein every day can help you maintain a healthy heart. Just look for the NutriSoy logo on your favorite foods. We take your health to heart.

[www.nutrisoy.com](http://www.nutrisoy.com)

800-510-2178 

[nutrition@admworld.com](mailto:nutrition@admworld.com) 

**NutriSoy**  
100% Natural Soy Protein

© 2004 Archer Daniels Midland Company

isoflavones appear in their breast milk and are absorbed by their infants. The significance of this is not known, although researchers speculate that early exposure to soy may protect against chronic disease in adulthood.

An analysis of a number of studies on soy and hot flashes found that, overall, use of soy products reduced the frequency of hot flashes.

Isoflavone supplements reduced the severity of headaches and other symptoms of premenstrual syndrome (PMS).

Soy protein may be useful in reducing risk of prostate cancer because it affects male hormone levels.

Preliminary results suggest that soy isoflavones can improve brain functions, such as memory, in older people. Symposium chairpersons: Mark Messina and Kenneth D.R. Setchell.

Advisory Board: Herman Adlercreutz, Stephen Barnes, Koen Descheemaeker, Brent D. Flickinger, Patricia Godfrey, Omer Kucuk, Mindy S. Kurzer, Gregory L. Paul, Susan M. Potter, Cesare R. Sitori, and Anna H. Wu.

“Sponsors: The Solae Company; United Soybean Board; Archer Daniels Midland Company; Cargill Health and Food Technologies; Cargill Soy Protein Solutions; Dr. Chung’s Food Co., Ltd.; Illinois Soybean Association / Illinois Soybean Checkoff Board; Indiana Soybean Board; Nichimo International Inc.; Solbar Plant Extracts Ltd.; Soyatech, Inc.; Wyeth Consumer Healthcare; AOCS; DrSoy Nutrition; and Soyfoods Association of North America.” Address: 1. Nutrition Matters, Inc., Port Townsend, Washington 98368.

1979. *NSRL Bulletin (National Soybean Research Laboratory, Urbana, Illinois)*. 2004. Illinois Center for Soy Foods launches program to test soy in school lunches. 11(2):5. June.

• **Summary:** “As part of the battle against obesity, the Illinois Center for Soy Foods at the University of Illinois has launched a pilot program to demonstrate the benefits of including soy in the state’s school lunch programs. The program will be a joint effort with the Illinois Soybean Checkoff Board and Archer Daniels Midland.

“Many school lunches exceed the maximum fat content allowed by regulations,” says Barbara Klein, co-director of the Center and emeritus professor in the Department of Food Science and Human Nutrition at the U of I. “By adding soy to school lunches, we plan to reduce the overall fat content of the meals.”

“Klein notes that the pilot project is part of an effort by the Center to be an active participant in the fight against childhood obesity.

“Our youth are becoming increasingly overweight,” she says. “Many school lunch programs inadvertently contribute to this problem by offering high-fat lunches. Working together we hope to become part of the solution for overcoming this increasingly important health issue.”

“She points out that the project will involve enhancing some of the more expensive items on the menu, thereby helping to reduce overall costs for running the lunch programs.

“Soy can also play a major role in improving food quality,” Klein says. “It has functional properties that can improve the taste and extend the freshness of many food products.”

“A major focus of the pilot program will be to demonstrate consumer acceptability of soy and soy-enhanced foods and show how they can be easily incorporated into the school lunch programs.

“We will be working with food manufacturers and food service vendors to make products for the test program,” Klein says. “Many of these foods will be popular entrees in which soy will be used to replace some or all of the meat. For example, we may make hamburger that is a mixture of soy and ground meat, and we may make a vegetarian soy burger.”

“As part of the consumer acceptance study, those items will either replace the usual entrée or be served alongside it for comparison testing. The plan is to gather data on acceptability from children, teachers, and members of the local Parent-Teachers Association.

“The pilot program will test soy foods in one or two school districts each in northern, central and southern Illinois and in one or two schools within each of the selected districts,” Klein says. “We will do everything possible to ensure that the product testing and data gathering will operate as smoothly as possible and with minimal disruption to the normal routine in the schools.”

1980. *Food Processing (Chicago)*. 2004. Wellness Foods—New Product Profiles: Two next-generation analogues better simulate full muscle texture. 65(8):s38. Aug. 1.

• **Summary:** ADM has introduced NutriSoy Next using soy proteins combined with other vegetable proteins such as wheat gluten or, in some cases, egg whites. Using a twin-screw extruder with the ingredients at relatively high moisture levels of 50-80% locks in flavor and gives them a moist texture.

Garden Protein International has launched Gardein, which is extruded non-GMO soy protein and wheat. It comes in a variety of formats and flavors. “Beef, chicken, and pork analogs are available in small or medium shreds as well as 3/4 inch and 3/8 inch dice. Pre-sauce options include teriyaki, BBQ, sweet and sour, honey garlic as well as roasted garlic and pepper.”

1981. McKee, David. 2004. A transforming of feed industry. *World Grain* 22(8):p. 51-56. Aug.

• **Summary:** In the Yangtze, just north of Shanghai, an ADM soybean solvent extraction plant can crush 13,000 tons of imported beans per day—making it the largest crushing plant in the world. Address: Grain industry consultant,

davidmckee59@msn.com.

1982. Allred, Clinton D.; Allred, K.F.; Ju, Y.H.; Goepfinger, T.S.; Doerge, D.R.; Helferich, W.G. 2004. Soy processing influences growth of estrogen-dependent breast cancer tumors. *Carcinogenesis* 25(9):1649-57. Sept. [49 ref]

• **Summary:** “Soy-based products consumed in Asian countries are minimally processed whereas in the USA many of the soy foods and soy ingredients are highly processed.”

“The objective of this study was to evaluate the ability of various soy products containing genistin, the glycoside form of genistein, to affect growth of MCF-7 cells transplanted into ovariectomized athymic mice.”

Novasoy® is a soy-based isoflavone concentrate made by ADM.

“Collectively, these findings suggest that for postmenopausal women with estrogen-dependent breast cancer, the consumption of foods containing soy flour is more advisable than consuming isoflavones in more purified forms.”

Soy is mentioned 199 times in this article. Address: 1. Dep. of Food Science and Human Nutrition, Univ. of Illinois at Urbana-Champaign, Urbana, IL 61801.

1983. *ADM Health & Nutrition Update (Decatur, Illinois)*.

2004. Evaluating the safety of soyfoods and isoflavones: Part I. 6(2):1-4, 7-8. Oct. [45 ref]

• **Summary:** Contents: Introduction. Soy and thyroid health: Soy and thyroid function, soy doesn't affect thyroid function in healthy subjects, soy and thyroid medication, conclusions. Soy and pregnancy (reproduction): Limitations of animal studies, contradictory findings from animals, human studies, conclusion.

1984. *ADM Health & Nutrition Update (Decatur, Illinois)*.

2004. Guides for interpreting soy research. 6(2):1, 5, 8. Oct. [45 ref]

• **Summary:** Contents: Introduction. Manufacturers who provide information about the isoflavone content on their product labels should express content as the aglycone amount. Researchers should clearly relate their study conditions to usual soy and isoflavone intakes. All researchers, but especially those conducting cell culture or animal studies, should outline the benefits and limitations of the model system used (The gold standard for conducting human trials is the randomized clinical trial—RCT). The media and public health officials should look at the totality of the evidence when commenting on the potential significance of new findings.

1985. *ADM Health & Nutrition Update (Decatur, Illinois)*.

2004. ADM introduces NutriSoy Next line of meat alternatives. 6(2):3. Oct. [45 ref]

• **Summary:** These products are said to have a taste and

texture similar to that of chicken. They are made “using an innovative technique which results in a more tender, juicy product than conventional soy-based meat analogs. The product is manufactured in ADM’s state-of-the-art vegetarian food plant. The 100,000 square-foot plant is completely meat- and dairy-free, and is Kosher, Pareve and Halal certified.”

Note: A separate 2005 leaflet for Nutri-Soy Next explains: “Twin-screw extruders of proteins at relatively high moisture levels [Wenger UniTex] gives NutriSoy Next meat analogs their tender, moist texture.”

1986. Archer Daniels Midland Co. 2004. Annual report: The essential link. P.O. Box 1470, Decatur, IL 62525. 56 p. Oct. 28 cm.

• **Summary:** Net sales and other operating income for 2004 (year ended June 30) were \$36,151 million, up 17.7% from 2003. Net earnings for 2004 were \$495 million, up 9.7% from 2003, but far below the peak of \$796 million in 1995. Shareholders' equity (net worth) is \$7,698 million, up 8.9% from 2003. Net earnings per common share: \$0.76, up 8.6% from 2003.

Accompanying the annual report is a “Notice of Annual Meeting.” G. Allen Andreas, age 60, Chairman of the Board and CEO, had a 2003 salary of \$2,901,667 plus \$119,658 other annual compensation. A photo (p. 3) shows G. Allen Andreas and Paul B. Mulhollem. Address: Decatur, Illinois.

1987. Egbert, William Russel. 2004. Isolated soy protein: technology, properties, and applications. In: KeShun Liu, ed. 2004. Soybeans as Functional Foods and Ingredients. Champaign, Illinois: AOCS Press. xii + 331 p. See p. 134-62. Chapt. 7. [39 ref]

• **Summary:** Contents: Introduction. Technological development. Functional properties: Solubility, gelation, emulsification, water binding, viscosity, dispersibility, foaming and whipping. Applications in food systems: Hydration of isolated soy proteins, flavor and odor issues, product storage and handling, health and nutrition applications (nutritional bars and other confectionary-type products, liquid nutritional beverages, powdered nutritional beverages, protein tablets), clinical and pediatric nutritional products, meat product applications (injection and marination applications, coarse ground meats, emulsified meats, dry fermented meats), meat analogs products, extruded cereals and snacks, bread and other baked goods, dairy alternative products (soymilks, yogurt, sour creams and soft cheeses, frozen desserts), other processed foods (pasta, soups and sauce, reduced-fat and other spreads). Summary.

Figures: (1) Flow chart of processing schematic for water-washed and alcohol-washed isolated soy proteins.

Tables: (1) Functional characteristics of various isolated soy proteins. (2) Functional properties of isolated soy protein in food systems. Address: Archer Daniels Midland Co., 4666

East Faries Parkway, Decatur, Illinois, 62526, USA.

1988. Liu, KeShun. 2004. Edible soybean products in the current market. In: KeShun Liu, ed. 2004. *Soybeans as Functional Foods and Ingredients*. Champaign, Illinois: AOCS Press. xii + 331 p. See p. 23-51. Chapt. 2. [76 ref]  
 • **Summary:** Contents: Introduction. Soybean oil. Traditional soyfoods: Nonfermented soyfoods (soymilk, tofu, variety and current market, nutritional value and health benefits, general processing, soymilk film {yuba}, okara, soybean sprouts, vegetable soybeans, roasted {soynuts} or cooked whole soybeans), fermented soyfoods (fermented soy paste {jiang and miso}, soy sauce, Japanese natto, tempeh, sufu or Chinese cheese, fermented black soybeans {douchi or Hamanatto}). Soy protein products: Soy flour, soy protein concentrate, soy protein isolate, textured soy proteins. Modern soyfoods. Soy-enriched products. Functional soy ingredients / dietary supplements: Soy lecithin, oligosaccharides, isoflavones, tocopherols, phytosterols, trypsin inhibitors.

Figures: (1) Photo of traditional soyfoods. (2) Photo of soy flour and defatted meal after crushing. (3) Bar chart of U.S. soyfood sales since 1992. (4) General flow chart of processing soybeans into various edible products. (5) Flow chart of a traditional Chinese method for making soymilk and tofu. (6) Bar chart of U.S. tofu sales since 1980.

(7) Photo of natto, a fermented Japanese soyfood. (8) Flow chart of natto production outline. (9) Photo of soy protein products. (10) Photo of meat analog made by high-moisture extrusion of soybean protein. (11) Photo of new generation of soyfoods in the market. (12) Photo of soy-enriched bakery products. Courtesy of Cargill, Inc. (13) Photo of bottle of concentrated soy isoflavone product. Courtesy of Archer Daniels Midland Co.

Tables: (1) Classification of various edible soy products in the current market. Address: Univ. of Missouri, Columbia, Missouri.

1989. Archer-Daniels-Midland Co. 2004. Somewhere west of Shenyang a teenager is stopping for dinner... (TV ad). Newshour with Jim Lehrer. Television broadcast. PBS. Nov. 5.

• **Summary:** “Which is why the soybean harvest west of Peoria is not stopping. And a soybean processor is not stopping. And a ship’s captain on the West Coast is stopping, but just for a while. Somewhere west of Shenyang a teenager is stopping for dinner—a dinner rich in soy protein. At ADM we like the idea there’ll be no stopping him now. ADM—Resourceful by nature.”

1990. Archer-Daniels-Midland Co. 2004. Somewhere in the heartland a child is sitting down to breakfast... (TV ad). Newshour with Jim Lehrer. Television broadcast. PBS. Nov. 15.

• **Summary:** “Which is why a farmer is rising for a 15-hour day. And a trucker is beginning a five-day journey. And ADM is turning corn and wheat, soy and cocoa beans into your favorite foods. Somewhere in the heartland, a child is sitting down to breakfast, which is why so many work so long and take their job to heart. ADM—Resourceful by nature.”

Note: This major TV ad says “soy” rather than “soybeans.”

1991. Pennington, Kathy. 2004. Recent changes at the National Oilseed Processors Association (Interview). *SoyaScan Notes*. Dec. 15. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** On 1 Sept. 2003 NOPA left its former address and management firm (Sheldon J. Houck & Associates). Mike Hammer became president and managing director of NOPA. On NOPA’s website, nopa.org, anyone can see the current trading rules, a generic list of members under membership, staff names, etc. The Yearbook and Trading Rules used to be published annually and sent to members free of charge. Non-members could buy copies. In the published version was a constitution and by-laws and a detailed membership roster, with detailed contact rules for each individual. Now, the detailed membership list, with contact information, is sent to members only.

The last published edition of NOPA’s Yearbook and Trading Rules was 2000-2001. When NOPA moved to its new location last year, it kept only one copy of each of its published yearbooks.

Note: NOPA’s website says that the organization was founded in 1929, whereas all the documents from that time state that NOPA (originally named the National Soybean Oil Manufacturers Association) was organized / founded on 21 May 1930 in Chicago, Illinois. NOPA’s unofficial historian is Jeffrey at ADM. Address: Office Administrator, NOPA, 1300 L St. N.W., Suite 1020, Washington, DC 20005. Phone: 202-842-0463 ext. 2.

1992. Iowa Soybean Promotion Board. 2004. *Simply soy: Recipes celebrating nature’s perfect bean*. Urbandale, Iowa: Iowa Soybean Promotion Board. 151 p. Illust. Index. 23 cm.

• **Summary:** A gorgeous book, filled with elegant, mouth-watering full-page color photos of prepared recipes. Contents: Introduction, by Linda Funk, Executive Director, The Soyfoods Council. 1. The magical bean: Soy to the world, soy and health, the soyfoods pantry (glossary incl. soybean oil, soymilk, tofu, tempeh, edamame, soynuts, soy flour, textured soy protein, canned soybeans, miso, soy protein powder {soy protein isolates}, dried soy flakes {MicroSoy}, soy yogurt and smoothies, soy pasta {ADM}). Soyfood nutrient chart. 2. Start it up with soy: Appetizers and nibbles. 3. On the sidelines: Sides and salads. 4. Spoon fed: Comforting soups and stews. 5. Vegetarian anyone?

6. Teamwork: Pork, beef, chicken, seafood and soy. 7. The bread box: Breads and muffins. 8. Desserts: Soy and spice and everything nice. 9. Cooking with kids. Resources (Directory of members of The Soyfoods Council and their soy products; Directory of state and national soybean boards).

A smoothie (p. 133) is made at home by combining 1 cup soymilk (plain or vanilla), ½ medium banana (may be frozen, if desired), and optional nondairy ingredients, such as chocolate syrup, peanut butter, fruit juice concentrate, or frozen fruits (alone or in combinations—pineapple, orange, cranberry, raspberry, etc.). “Many of the soy smoothies and soy yogurts on the market today are probiotic, meaning they contain active, live cultures that are beneficial to intestinal health.” Address: 4554 N.W. 114th Street, Urbandale, Iowa 50322-5410. Phone: 866-431-9814.

1993. Manning, Richard. 2004. *Against the grain: How agriculture hijacked civilization*. New York, NY: North Point Press. A Div. of Farrar, Straus and Giroux. 232 p. Index. 24 cm. [45 ref]

• **Summary:** A revisionist history of agriculture, or how agriculture created the dull

minded, fat bellied citizens of today—while destroying the environment. Contents: Arousal. Why agriculture? Why agriculture spread. Hard times. Modern times. A vanguard of feudalism. To see the wizard. Why we are what we eat. Hog heaven. A counteragriculture. I eat, therefore I kill.

The chapter titled “To see the wizard” (p. 123-47) is very critical of Archer Daniels Midland Co. (ADM) and other large agribusiness companies (Cargill, Continental Grain / ContiGroup, Louis Dreyfus, Andre & Cie., and the Bunge & Born Group). It also discusses the farm crisis of the 1980s, the depopulation of rural America, the huge rise in U.S. ag exports, the rise in big farms (“get big or get out”) and capital-intensive industrial agriculture, big farms as major recipients of federal welfare, Dwayne Andreas’ leadership at ADM, how U.S. agriculture has become one big commodity factory, food vs. commodities, the farmer’s falling share of the consumer’s food dollar, monoculture. “Between 1985 and 1995, ADM had received more than \$130 million in export subsidies through USDA.” Demise of the family farm, rise of hog factory farms whose waste is not treated as sewage, the corruption of life, what are people for?, ethanol and subsidies, interview with Dwayne Andreas, there is no free market. Address: Montana.

1994. Miller, Edgar R., III; Pastor-Barrluso, Roberto; Dalal, Darshan; et al. 2005. Meta-analysis: High-dosage vitamin E supplementation may increase all-cause mortality. *Annals of Internal Medicine* 143(1):37-46. Jan. 4. [70 ref]

• **Summary:** “Background: Experimental models and observational studies suggest that vitamin E supplementation may prevent cardiovascular disease and cancer. However,

several trials of high-dosage vitamin E supplementation showed non-statistically significant increases in total mortality.

“Purpose: To perform a meta-analysis of the dose-response relationship between vitamin E supplementation and total mortality by using data from randomized, controlled trials.

“Conclusion: High dosage (greater than or equal to 400 IU/day) vitamin E supplements may increase all-cause mortality and should be avoided.”

Note: Prior to the publication of this study, Vitamin E was widely consumed as a supplement since, among other things, it seemed to be an effective antioxidant. A major manufacturer and promoter was Archer-Daniels-Midland Co. Address: Johns Hopkins School of Medicine.

1995. Ridenour, Jeremiah. 2005. Pulmuone first invests in Wildwood Natural Foods in April 2004 (Interview). *SoyaScan Notes*. Feb. 13. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Jeremiah met Tom Lacina and his partner / brother-in-law one day when they showed up at the Wildwood plant in Santa Cruz. Jeremiah took them on a tour of the plant, then they went out to lunch. Tom was one of those rare people who was both an attorney and a farmer. He owned a farm and had built a small tofu shop on his land. He was selling about \$50,000/year worth of soy products at the most. They said they were struggling in Iowa trying to make their tofu plant work, and they were losing tons of money. Somebody (Shurtleff) told Lacina that if he wanted to be successful, he should model his company after Wildwood. After visiting Wildwood, they visited San Diego Soy Dairy and Luke Lukoskie. He then called Jeremiah and said that if he was ever in the Midwest, he was welcome to stop by for a visit. On a trip to the East, Jeremiah stopped in to see Tom, who introduced him to venture capitalists (VCs) in Des Moines who scouted for companies potentially suited for Iowa state money. The VCs grilled Jeremiah about his business. To get money from the state of Iowa, a company had to have more than \$5 million/year in sales. Jeremiah really liked Tom and the Soy Sisters (Tom’s wife and sister). Wildwood had run out of capacity, working around the clock 7 days a week, so it was “grow or else.” Wildwood and Midwest Harvest Corp. (Tom’s company) ended up merging, becoming an Iowa corporation and getting money from the state of Iowa for job creation in Iowa and value-added products made in Iowa from Iowa farm crops. A certain percentage of that money had to be spent in Iowa, but Jeremiah was able to get enough to buy a used meat-packing plant in Watsonville, about 25 miles southeast of Santa Cruz. First the new corporation bought 10 acres of land in Grinnell, Iowa, 1½ miles down the road from Tom Lacina’s farm and in 2001 built a state-of-the art plant (22,000 square feet) where only soymilk and cultured foods (such as soy

yogurt) were made—the only such plant in the USA. Jeremiah has long had a strong commitment to organic farming and the use of organic ingredients wherever possible in his products. On his 320-acre farm, Tom Lacina grows some of the organic soybeans that Wildwood makes into cultured soyfoods in Iowa. This is the type of vertical integration that Jeremiah had long sought. Jeremiah used to contract with various organic farmers, but he gradually found problems keeping the protein levels of his two select varieties high enough and ensuring the cleanliness of the soybeans he wanted. So 5-6 years ago he started to buy his soybeans through a broker, and giving very clear specifications—such as at least 43% protein in the soybeans to be used in making tofu. That system has proven to be much better.

While building his first factory in Iowa, Jeremiah bought an old meat-packing plant in Watsonville, California and began to renovate it for food processing. Building two plants at once turned out to be a big mistake. The usual cost overruns occurred. After building plans had been approved by the inspectors and the meat-packing plant renovation was almost finished, inspectors came back in and said that about \$1 million worth of earthquake retrofitting would have to be done. Jeremiah did the work and finished the plant. But now he needed the last million dollars of marketing money that he had been promised by Iowa. But Iowa refused to pay that money, arguing that it would take more than that amount for the company to reach the break-even point. What Wildwood couldn't see, was that politics was at work behind the scenes; Iowa wanted to get out. The money guys told Jeremiah he would have to find a strategic partner. Jeremiah suddenly found himself short of cash and in a financial crisis.

So he made a short list of potential partners who might invest money. House Foods America Corporation (Los Angeles) showed some interest then backed off. Jeremiah had first met Pulmuone in the spring of 2003 at the Natural Products Expo West in Anaheim; their booths happened to be across the aisle from one another. They had a smoothie product and Wildwood had introduced a smoothie the year before; Jeremiah thought that Pulmuone's wasn't very good. Some people from the Pulmuone booth came over to visit. They said that their CEO was coming from Korea and invited Jeremiah to meet him. But for some reason it never happened. So Jeremiah never thought of putting Pulmuone on his short list of potential partners.

Meanwhile, the Iowa cultured products plant was not doing well. "This discipline required to make cultured soyfoods is like that in an operating room." Jeremiah's basic concept was to make these cultured soy products probiotic, which would give them functional value. At his first meeting with the employees he asked how many people had heard of "probiotics," Nobody. Woops. How many had heard of "antibiotic." Everybody. He knew from that moment he would have marketing problems. Jeremiah and a PhD in microbiology had traveled to the plant, established the

sanitation protocols, and trained the workers. But soon after he left, the quality control problems returned. Tom Lacina was more interested in having the paperwork done well than in enforcing the sanitation rules. This led to a loss of business and of money.

There was another factor. Jeremiah has come to believe that many, if not most, Midwesterners see anyone from California as a hippie. Hippies don't know how to run businesses and don't understand most Midwesterners. At one point the VCs put their foot down and told Jeremiah, "Too much travel. We don't want you to come here anymore." At that point things got out of control.

Stonyfield Farms was planning to have their soy yogurt made at Wildwood's Iowa plant—a huge potential account. But the people in Iowa could not produce the quality that was required. They missed a huge opportunity to make the Iowa plant successful. Jeremiah's wishes he had waited until the Iowa plant was making good quality products before bringing in Stonyfield.

Today, the Iowa plant is doing very well in every way; sales grew 400% last year. Pulmuone sent their R&D experts there and turned things around in short order. (8) In April 2004 Wildwood sold a controlling interest to Pulmuone. It was a matter of economic survival. So Wildwood has become an international company, with Korean partners. To celebrate the deal, Jeremiah went on a tour of Pulmuone's facilities in Korea. (9) Origins of Pulmuone in 1955 in Korea as a Christian Farming Cooperative. Their mission is "Love Thy Neighbor" and they are deeply committed to pure foods, organic agriculture, and no artificial ingredients. The saintly Mr. Won. Alex Nam went to college with Mr. Won's son. Pulmuone now has 12 organic food products.

In the early days, the Soyfoods Association was unable to attract any Asian soyfoods companies. Today both Asian companies, huge American food processors (Kellogg, ADM, DuPont, Kraft), and even state soybean boards are members. Address: 412 E. Riverside Drive., Watsonville, California 95076.

1996. Chajuss, Daniel. 2005. Brief biography and history of his work with soy in the USA and Israel. Part III (Interview). *SoyaScan Notes*. Feb. 19. Followed by numerous e-mails. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: In 1972 Hayes General Technology signed a contract to sell the engineering designs and know-how it had developed for a soy protein concentrate plant to Aarhus Oliefabrik A/S in Aarhus, Denmark. This was HGT's first major contract.

In 1973 Daniel Chajuss sold know-how and complete engineering designs to Aarhus Oliefabrik A/S, Aarhus, Denmark (renamed Central Soya Aarhus A/S in Nov. 1992), to manufacture powdered and textured soy protein concentrates for human consumption, pet foods and calves milk replacers; they were sold under various Danpro brands.

On 19 June 1973 Daniel married Talma E. Hirsch in Rehovot, Israel. They had four sons: Ron, born on 18 Dec. 1973 in Tel Aviv; he is now (2005) a computer scientist and electrical engineer. Amir and Shi (twins) born on 17 Dec. 1976 in Rehovot; Amir is a graduate student in physics and philosophy. Shai is a graduate student in business administration and political science. Ori, born on 2 Feb. 1983 in Rehovot, is finishing his military service duties and going to study at a university.

All the soy protein concentrate facilities worldwide, which were established since 1973 and which are still in operation today (including ADM, USA, SOGIP-Bunge, France, etc., with the exception of Central Soya's USA plants) employ Chajuss' technology and/or engineering designs, and are mainly based on the know-how and technology developed by Chajuss. About 90% of the total world production of soy protein concentrates today is made by aqueous alcohol extraction. Most of the protein concentrates are used in the form of powder or grits, some are further texturized, and some are further treated to provide various "functionalities."

In 1974 the Aarhus concentrate plant began regular full-scale operation. It was later bought by Central Soya.

Also in 1974 Daniel, Prof. Birk and the other researchers at the Hebrew University at Rehovot did much collaborative research on soy phytochemicals, such as soy saponins, soy isoflavones, other soy phenolics, etc., which were obtained from alcohol-extracted soy molasses. They found that soy molasses had many interesting and useful applications—even for stabilizing sandy soil and eventually enabling it to be productive for agriculture. Later they developed a technology to remove the isoflavones (very bitter and beany) and saponins from the soy molasses. They found that the isoflavones in the soy germ are not bitter.

Daniel recalls: At [the NRRL in] Peoria, Illinois, they had tried to breed soybeans that had little or no bitter, beany flavor. Essentially they were trying to breed out the isoflavones; fortunately they were not successful. Yet the isoflavone content of both soybeans and soy molasses covers a wide range; for soy molasses it is about 0.5% to 2%.

During 1974 Daniel told researchers at Central Soya and Aarhus Oliefabrik about these compounds found in soy molasses. Then Unimills started a plant and called it 'soy volasses.' The *2004 Soya & Oilseed Bluebook* has a section titled 'Definitions and Glossary,' however it does not yet have an entry for 'soy molasses' (p. 367). But there is an entry for 'soy solubles,

During this time Hayes General Technology also did development work on many different modern soy protein products, functional soy protein concentrates, textured soy proteins, soy flours (full-fat, medium-fat, and defatted; enzyme active or toasted); also on the extraction of specialty oils and cold press systems; on specific extraction plants, as for jojoba oil, primrose oil, argan oil (from the nuts of

the argan tree, *Argania spinosa*, of southwest Morocco), etc.; flash desolventizing systems for non-polar and polar solvents; unique, bland and novel "no waste" (fiber included) soymilk products; precooked "instant" cereal plants; complete low-cost food formulae plants; micro-milling systems; production of vegetarian meat alternatives, incl. vegetarian sausages, schnitzels, patties, and "fried fish"; non-soy based protein products; lupine seed processing incl. lupine protein, lupine oil, and lupine alkaloid alkaloids production systems. Much work was also devoted to the development of low-cost cottage industries.

In 1980 Hayes started to sell soy lecithin commercially; it was separated from the soy oil obtained during the production of "white" flakes by hexane extraction.

Also in 1980 Daniel's father, Elijah M. Chajuss, began to reduce his full active daily work with Hayes Ashdod Ltd. At this time, the two men began thinking about selling that part of their company. Daniel thought it would be better if he focused on research, development, and engineering work. None of his sons was interested in carrying on the family business.

Until 1981, all the shares of Hayes Ashdod Ltd. were held by the Chajuss family.

1984 Sept. 27-28—Daniel attended the First European Soyfoods Workshop held in Amsterdam, Netherlands, as a delegate of E.M. Chajuss Ltd., which was interested in establishing a simple soy cottage industry; at about that time they had developed some simple appropriate processing technologies for soyfoods and soymilk and were thinking about making those in a company other than Hayes Ashdod Ltd.

1984—The Chajuss family began to sell some of the shares in Hayes Ashdod Ltd. (fully owned by the Chajuss family) to Koor Foods Ltd. (headquartered in Tel Aviv), which was a holding company that owned shares and ownership in various food firms and was a part of Koor Industries Ltd., which had been established by labor unions. Hayes Ashdod Ltd. sold crude soybean oil to firms owned by Koor Foods Ltd. Koor has approached the Chajuss family, asking if all or part of Hayes Ashdod might be for sale.

In Dec. 1984 the majority of the shares in Hayes Ashdod Ltd. were sold by the Chajuss family to Koor Foods Ltd. Address: Managing Director, Hayes General Technology Company Ltd., Misgav Dov 19, Mobile Post Emek Sorek, 76867 Israel. Phone: (972) 8 592925.

1997. Chajuss, Daniel. 2005. Brief biography and history of his work with soy in the USA and Israel. Part IV (Interview). *SoyaScan Notes*. Feb. 19. Followed by numerous e-mails. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** 1985—Hayes General Technology (HGT) Co. Ltd. is incorporated as a separate and independent company, still owned by the Chajuss family, especially to develop engineering, process know how and new technologies,

mainly in the field of soy proteins.

1986–The Chajuss family sold the remainder of the shares in Hayes Ashdod Ltd. to Koor Foods Ltd. One of Koor’s directors was Mrs. Shefi of Kibbutz Hatzor. She was the link connecting her kibbutz with Koor Foods and Hayes Ashdod Ltd.

1987 Feb. 18–Elijah Mathew Chajuss, Daniel’s father and co-founder of Hayes Ashdod Ltd., passed away in Rehovot at age 84.

In March 1987 all the shares of Hayes Ashdod Ltd. were purchased from Koor Foods by Kibbutz Hatzor. A few months later, in about Sept. 1987, the company name was changed from “Hayes Ashdod Ltd.” to “Solbar Hatzor Ltd.”

In 1988 Soya Mainz (of Mainz, Germany) bought from Hayes General Technology engineering designs to set up a soy protein concentrate plant in Germany. The plant was not built and instead in early 1991, Soya Mainz bought 25% of Solbar’s shares.

In 1989 (a year later) Soya Mainz bought an additional 24% of the shares in Solbar, so that they now owned a total of 49% equity in Solbar Hatzor; Kibbutz Hatzor owned the remaining 51% equity of this joint venture between Israeli and German companies.

Note: The proprietary rights of Hayes Ashdod Ltd. know-how and technology remained, however, Chajuss’ proprietary possession. Koor Foods ceased operations in about 1987.

Today HGT does mainly research engineering and designs systems, but it also manufactures special, nonstandardized equipment, and installs complete systems. HGT engineers, including Daniel when warranted, also work as field engineers and consultants on site when the systems they have designed are installed in other countries. They have done that since 1973-74 when their first system was installed outside in Aarhus, Denmark. Systems for manufacturing soy protein concentrates and soy molasses, designed and developed by HGT, have been installed in Israel, Denmark, The Netherlands, France, USA, China, and Brazil. All these plants include texturizing facilities, which although recommended by HGT are designed and made by firms such as Wenger, Extru-Tech, and Clextral. Today HGT is known and often referred to as ‘Hayes Ltd.’. Hayes General Technology Company Ltd. is thus thinking about making ‘Hayes Ltd.’ its official company name. Also today (2005) this company is owned and managed by Daniel Chajuss.

Note: Hayes Ashdod Ltd., although it was sometimes referred to as “Hayes Ltd.” was never officially named “Hayes Ltd.”

In early 1991 the German soy processor, Soya Mainz GmbH and Co. bought a 25% equity interest in Solbar Hatzor Ltd. (formerly Hayes Ashdod Ltd.), soy protein manufacturers of Ashdod, Israel. The company has also contracted with Hayes General Technology Co. Ltd. of Israel

to set up a soya protein concentrate production facility in Germany.

By 1999 Solbar had started a sister company or division named Solbar Plant Extracts to market its nutraceutical products (such as isoflavones) extracted from soy molasses.

Today (Feb. 2005) the makers of traditional type concentrate generally use the systems developed by Daniel Chajuss. These systems are purchased from Hayes General Technology and are presently used by all the leading makers of traditional and functional soy protein concentrates. Today over 95% of the soy protein concentrates manufactured worldwide are made using systems developed by Hayes. Included among Hayes General Technology clients for traditional or functional soy protein concentrates (SPC) have been: (1) Hayes Ashdod Ltd., Ashdod, Israel (later renamed Solbar Hatzor Ltd.), 1962 to 2005 (complete engineering designs and services). (2) Aarhus Oliefabrik A/S, Aarhus, Denmark (alter renamed Central and presently Solae), 1972 to 1974 and later periodically upon request. (3) Bunge Sogip, Bordeaux, France, 1988 to 1996 (later renamed Central Soya Aarhus and presently Solae). (4) Soya Mainz, Mainz, Germany, 1988 (now part of ADM group). (5) ADM, Decatur, Illinois, 1989-1999. Intended to be used for SPC in the Decatur plant. The knowledge was later also utilized by ADM in plants in the Netherlands (Europort) and China. (6) Finnsoypro Oy, Uusikaupunki, Finland, 1995. Textured soy protein concentrate plant. (7) Cargill, Minneapolis, Minnesota, 2000 to 2003. SPC technology licensing and transfer of know-how and engineering designs. Also consultations. (8) Shemen Industry–Soyprotec Advanced Protein Technology, Haifa, Israel, 1999 to present. SPC technological transfer and licensing agreement and consultation services. (9) China–In China HGT is involved directly and or through Wuhan Crown Friendship and provide Hayes know-how, licensing, engineering designs and services to manufacture SPC to firms such as Shandong Sanwei Oil Enterprise (Group) Co. Ltd., Linyin City, to Crown Proteins, to Gushen in Shandong province and to YiQing Group in Tianjin. (10) Brazil–The transfer of know-how and engineering designs is and was made to such firms as IMCOPA (2006) and others through Crown Iron Works, Cargill, Shemen Industries (Soyprotec), Shandong San Wei, etc.

Daniel has retired largely from the commercial side of his business. But he still (2005) has a small company that makes isoflavone products; he likes very much to do research in this company’s laboratories. “Business can be good or bad, profitable or not profitable, but when you do research, you may get good or bad results, but it’s always interesting. That’s what I like to do.” From time to time Daniel goes to the Hebrew University of Jerusalem at Rehovot to do research; he still works occasionally with Dr. Yehudith Birk.

Daniel has become interested in a remarkable plant and its seed, pearl lupin (*Lupinus mutabilis*), a species of lupin

that is grown in the Andes of South America for its edible bean. He has done research on the bitter compounds in this underutilized bean, and believes this seed has a very bright future, including as a human food (see separate record).

Daniel's wife is well (Dec. 2007) and works as information librarian in Tel Aviv University Faculty of Medicine.

The year 2007 marks the 45th anniversary of Daniel's pioneering work with soy products in Israel. Today Hayes makes about 450 to 500 metric tons per year. Address: Managing Director, Hayes General Technology Company Ltd., Misgav Dov 19, Mobile Post Emek Sorek, 76867 Israel. Phone: (972) 8 592925.

1998. Lamp, Greg. 2005. Keep a watchful eye on Brazil: My view. *Corn and Soybean Digest*. Feb. p. 6.

• **Summary:** Lamp just returned from a two-week tour of Brazil's soybean and cattle growing centers—sponsored by *The Corn and Soybean Digest* and its sister publication, *Beef*. Brazil has plenty of undeveloped land. In the state of Mato Grosso, for example, 70% of the land is undeveloped, yet this state is already Brazil's largest producer of soybeans, cotton, and cattle—and it has the lowest rate of unemployment—6.9%.

Since 2003, soybean king Blairo Maggi (who produces about 250,000 acres of soybeans) was elected governor of Mato Grosso, the long inadequate infrastructure has started to improve rapidly. During the past two years, more than 900 miles of new roads have been constructed.

Rondonopolis, located southeast of Cuiaba in Mato Grosso, "has the largest crushing capacity in South America. Most crushers are U.S. companies like ADM, Cargill and Bunge."

For U.S. farmers, the biggest threat from Brazil may come from its ability to feed and export poultry and pork." As the country produces more corn, to feed with its abundant soybeans, the threat will increase.

Photos show: (1) Greg Lamp. (2) American farmers on a bus tour checking plants for soybean rust. (3) Ships loading at Paranagua port. Address: Editor.

1999. Messina, Mark J. 2005. Update on work with soy (Interview). *SoyaScan Notes*. March 29. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Mark has made presentations on soy and health in 33 countries and has been to Brussels 10-12 times, and once to China.

Second generation statins are truly remarkable in their ability to lower human cholesterol by 30-35%—much more than any short-term dietary change.

The French government is now advising no soy consumption before age 3, and the British government has two editorials on soy consumption in childhood.

Creation of a Soy Nutrition Institute has been under active discussion for the past two years. Three companies are

potentially interested: Solae (the most interested), followed by ADM and Cargill. They would publish accurate, well-documented information about soy and nutrition. They have set two goals: Within 5 years to become like the Egg Association, and within 10 years to become like the Dairy Association. Mark is considering applying for the position of director if he can get a long-term contract and if the salary is adequate. When the media and others had questions about soy, nutrition and health, this is the first place they would think to contact.

The 6th International Symposium on the Role of Soy in Preventing and Treating Chronic Disease will be held in Chicago, Illinois, this summer.

Dr. James Anderson is doing a new meta-analysis on soy and heart health. There are many new studies since his first meta-analysis was published in Aug. 1995.

The earlier a young woman gets pregnant, the lower her risk of breast cancer later in life. One of the most exciting hypotheses in this field is that isoflavone intake (including soy isoflavones) during youth / adolescence significantly reduces breast cancer risk later in life.

A member of the anti-soy group is "Dr. Mercola." He is somehow associated with Sally Fallon and her Weston Price Foundation. Dr. Joseph Mercola is an osteopathic physician and director of the Optimal Wellness Center, his medical clinic outside Chicago. Trained in both alternative and traditional medicine, he has served as the chairman of the family medicine department at St. Alexius Medical Center for five years. Address: PhD, 439 Calhoun St., Port Townsend, Washington 98368. Phone: 360-379-9544.

2000. *ASA Today* (St. Louis, Missouri). 2005. WISHH provides vital assistance to feeding program. 10(5):2. March.

• **Summary:** U.S. Ambassador to Senegal, Richard C. Roth, praised a Counterpart International (CPI) project that is taking advantage of high protein soy products to fight hunger while helping to increase school attendance by 25%. Roth visited Counterpart's Global Food for Education (GFEI) Program where he saw how "high protein soy has complemented CPI's program, which has provided a daily, hot, nutritious meal to more than 16,000 school children since early 2003.

Counterpart received six tons of Textured Vegetable Protein™, better known as TVP, from WISHH and Archer Daniels Midland Co., the manufacturer. Another product to be used in the program is soy protein isolate.

"State soybean organizations and the United Soybean Board provide support for the WISHH program."

A photo shows Ambassador Richard Roth with several Counterpart International staff in a storage room where stacks of ADM's TVP are stacked high.

2001. Chajuss, Daniel. 2005. History of his work with soy in Israel (Interview). *SoyaScan Notes*. April 13. Conducted by

William Shurtleff of Soyfoods Center.

• **Summary:** ADM made acid-wash soy protein concentrate, which cannot be texturized. Daniel thinks they did this after they bought Central Soya's soy protein isolate plant in Chicago, and brought it to Decatur, Illinois. This inability to texturize was one of the reasons ADM asked for Daniel's assistance in establishing a plant to make aqueous alcohol wash soy protein concentrate.

Central Soya made very good soy products—such as Response [textured soy protein concentrate, launched in July 1975]. Daniel has always had very good personal and business relations with Central Soya.

Hayes Ashdod was sold in 1987 and is now named Solbar. It is still in the same location as before, with much of the equipment. After the sale, Daniel used to work there almost every day, but he no longer works with that company.

Daniel helped Finnsoypro Oy (Finnsoy) in Finland to start a plant by giving them know-how; however they bought equipment from a company that is the daughter company of Wenger. Finnsoypro is a small factory that makes about 300 kg/hour of textured soy protein concentrate. The owner (who is very smart) is a neighbor and friend of Daniel in Israel.

Daniel really loves his work at Hayes General Technology (HGT), which he still owns; he is the managing director. He works to install new plants around the world based on the unique technology that he and HGT have developed. He sold Hayes Ashdod Ltd. in part so that he could focus more on his work at HGT. He is now working on a plant in Haifa for a company named Soyprotec; it belongs to Shemen Industries, which is also making soy protein concentrate.

Daniel drinks Alpro soymilk. “Now in Israel tofu and soymilk and other soy products are very, very popular.” Israel's largest producer of dairy milk, Tnuva, now makes soymilk. They generate a lot of okara, which is transformed into a health food product by another company. It contains about 30% protein, 60% fiber, plus some oil, minerals, etc. Address: Managing Director, Hayes General Technology Company Ltd., Misgav Dov 19, Mobile Post Emek Sorek, 76867 Israel. Phone: (972) 8 592925.

2002. Brewster, Elizabeth. 2005. Beans to go: adding soy to the deli case. *Iowa Soybean Review (Iowa Soybean Association, Urbandale, Iowa)* 16(7):12k of 12-page insert after p. 14. Spring.

• **Summary:** “You might say soy and the deli case were made for each other—as long as you don't say it too loudly.

“From tasty tofu tidbits to soymilk smoothies, a host of deli products can easily incorporate soy, says veteran soy chef Christopher Koetke. The key is keeping the bean's influence subtle and in line with the American palate.

“A hunk of cold tofu is not where Americans are at,” says Koetke, dean of The School of Culinary Arts at Kendall College in Chicago. “But there are many, many ways that

delis can incorporate soy products.”

“Edamame, tasty green soybeans harvested just before they harden, is one of the easiest soy ingredients to use, slipping smoothly into just about any salad or vegetable dish, explains Koetke. Roasted soybeans, called soy nuts, are also at home anywhere in the deli, from snacks to salads to meat mixtures like meatloaf and meatballs.

“I'm also a big proponent of canned soybeans,” Koetke says. “You can use them anywhere you'd use a bean—soups, salads, chili. They're really easy to add.”

“One of the newest ways to add instant soy crunch to deli offerings is Soy Anytime sprinkles from Springfield, Illinois-based Spectrum Foods. The small crunchy nuggets of soy and rice provide 6.5 grams of soy protein in a two-tablespoon serving, plus ‘they're kind of cool,’ says Koetke. “You just sprinkle it into a salad, meatloaf, anything. They're very, very good.”

“On the liquid side, soymilk and smoothies have been riding a wave of mainstream popularity, so consumers are likely to welcome both as deli ingredients or beverages. Koetke especially likes SoYogurt smoothies from Watsonville, Calif.-based Wildwood Natural Foods, which come in five flavors including unsweetened plain. He also suggests mixing soymilk with fruit for a breakfast or dessert treat, or preparing oatmeal with vanilla soymilk for a double whammy of nutrition.

“Products derived from soy, such as tofu, may be trickier to sell at the deli because they tend to suffer from bad taste reputations, well-deserved or not. But Koetke is optimistic about consumers' potential to enjoy the current crop of tofu products if they're willing to give them a try

“I am impressed with tofu manufacturers in America,” he says. “They've made big strides in terms of making tofu that is really designed for the American palate. The whole flavored tofu thing is really, really big. The beauty of it is that it's ready to eat and flavorful, and you don't have to marinate it. You can (even) put it in a spaghetti sauce over pasta—it's delicious.”

“In fact, there are a number of excellent soy pastas on the market, adds Koetke, including ADM's Soy7 for foodservice: lasagna, rotini, elbow, angel hair, penne rigate and spaghetti noodles.

“And many deli products with soy ingredients can segue naturally into foodservice applications, particularly where health concerns are driving menu choices, such as in a retirement facility, spa or school settings.

“Soy is not a bad word [in those settings],” says Koetke. “It's something people are looking for, and that might be a reason for them to try it. But it's up to the chef to make sure that when they try it, they say ‘wow.’

“For more upscale dining establishments, Koetke says soy can play a key role as an exotic ingredient, such as prime beef with a tempeh (fermented cooked soybeans) and mushroom stew.

“The minute you combine [soy] with something more familiar, it becomes an interesting little tidbit on the plate,” says Koetke. “Now you’ve got something that separates you from the chef down the street.”

A photo shows the front panel of a Wildwood Soy Smoothie bottle.

2003. *Iowa Soybean Review* (Iowa Soybean Association, Urbandale, Iowa). 2005. Next generation oils: New low-lin soybean oils sizzle without trans fats. 16(7):12j of 12-page insert after p. 14. Spring.

• **Summary:** “With the FDA’s Jan. 1, 2006, deadline for mandatory trans fat labeling, food companies are resolving to get their fatty acid numbers as low as possible this year. New low-linolenic soy oils that can help reduce—and even eliminate—trans fatty acids will make it easier to keep that resolution.

“The front-runner of the moment is Asoyia trans fat-free soy oil, launched last fall by Winfield, Iowa-based Asoyia llc after years of research by Iowa State University agronomists and food scientists. Asoyia is being produced from newly developed soybeans that contain only one percent linolenic acid (a component of soybean oil that causes it to eventually become stale or rancid), compared with eight percent linolenic acid in traditional soybeans. Soy oils with low levels of linolenic acid don’t need to be hydrogenated for freshness and long-lasting stability, so no trans fats are created in the oil.

“Asoyia llc is marketing the new oil, which is being processed by Wayzata, Minnesota-based Cargill Inc., for commercial cooking applications in the 5 billion-pound market for frying oil. Vivian Jennings, chief executive officer of Asoyia, which is owned by 25 growers of the low-lin soybeans, notes that the trans fat-free oil also offers other advantages for commercial kitchens.

“In extensive tests conducted by food services and restaurants, the one percent linolenic oil lasted 25 to 33 percent longer in frying applications than other current premium frying oils,” says Jennings. “The fried products stay crispier longer and taste the same as those fried in hydrogenated soybean oil.”

“Asoyia also has less saturated fat than some other alternative frying oils.

“Jason Wheelock, kitchen manager for Hickory Park Restaurant Co. in Ames, Iowa, agrees that Asoyia is a winner beyond its trans fat-free status. The casual family dining and barbecue restaurant helped test Asoyia last winter, and ‘it actually worked much better than the oil we were using,’ says Wheelock. ‘The first week we used Asoyia, we were really busy, and we [still didn’t have to change the fryer oil] for two weeks. We usually have to throw out the oil on a weekly basis... our customers didn’t notice any difference in taste, which is a good thing,’ says Jennings.

“Wheelock says the restaurant plans to use Asoyia

again when it becomes commercially available, and plans to highlight the oil’s lack of trans fatty acids.

“We’re also working with some other SYSCO houses in other states, and talking to some major national chains of upper-scale restaurants who will be testing Asoyia,” says Jennings.

“We will be directing our marketing efforts to businesses where fried foods are featured on the menu,” he adds. “These foods can be marketed by restaurants as a more heart-healthy menu item than when they were fried in oils high in saturated or trans fats.”

“Jennings says Asoyia is also exploring larger-scale uses for healthcare foodservice segments, such as hospital, university and school dining rooms.

“Also poised for entry into the low-linolenic market is Nutrium Low Lin soybean oil, the first product to be sold under the new brand name created as part of an alliance between Bunge Ltd. and DuPont. The Nutrium soy oil, which became available for testing and product development last fall, is made from a new Pioneer soybean variety whose oil has less than three percent linolenic acid.

“We expect to have 20 million pounds [of Nutrium soybean oil] available commercially in October 2005, and 150 million pounds in 2006,” says John Jansen, vice president of product and process development at Bunge North America in St. Louis [Missouri]. By 2009, full-scale production of nearly one billion pounds of the oil is planned.

“Nutrium Low Lin is a natural substitute for frying shortenings used by food processors and foodservice operators, says Jansen, but it could also expand into the consumer market ultimately.

“Also debuting in fall 2005 will be low-lin soybean oils processed from Monsanto’s new Vistive soybeans with less than three percent linolenic acid. So far, both Cargill and Ag Processing Inc., Omaha, Nebraska, have signed on as participating processors, with more processors expected to be added in 2006.

“The trans fat concerns driving the low-linolenic segment are also steering other soybean oil solutions, such as interesterified soybean oil, a blend of hydrogenated and nonhydrogenated soybean oils that works best in applications for solid or semisolid fats. The interesterification process, whether chemical or enzymatic, rearranges fatty acids in soybean oil to allow it to function like the partially hydrogenated oils it replaces, but without the trans fats.

“Archer Daniels Midland in Decatur [Illinois], launched its NovaLipid interesterified soybean oil in July 2003, and Bunge and Cargill also offer interesterified soy oils, in addition to other custom blending solutions.

“No matter how they do it, it’s a safe bet that the food industry will remain focused on slimming down soy oils for the foreseeable future. ‘There’s a lot of interest right now because of the pressure on trans fats,’ says Bunge’s Jansen.”

A photo shows that “Asoyia trans fat free soybean oil

(right) offers a clear alternative to conventional soybean oil (left).” Both oils are in clear glass pitchers.

2004. *World Grain*. 2005. ADM to close Brazil soybean processing plant indefinitely. 23(5):11. May. [1 ref]

• **Summary:** Effective immediately, ADM will discontinue operations at its soybean crushing and refining facility at Tres Passos, Rio Grande do Sul, Brazil—due to poor crushing margins.

2005. Givens, Joe. 2005. AGP’s purchase of the Dawson Mills soybean crushing plant from Land O’Lakes (Interview). *SoyaScan Notes*. June 27. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** This whole acquisition was a very difficult and painful experience for many people at Dawson Mills. Many of the top people at AGP were former ADM employees. “I found them very difficult people to work with.” They came in and “thought they knew it all.” They wanted to replace many experienced, competent employees (such as the plant superintendent and a chemical engineer) with their own people—as fast as they could. Joe had already retired, but he got drawn into the drama because of his long relationship, and often friendship, with these Dawson employees that AGP wanted to get rid of. In the end, AGP had its way. The Dawson plant superintendent had a heart attack and died; Joe is quite sure it was caused by the harassment of the AGP people. One of the Dawson Mills directors, Jim Bauler, went on the AGP board.

Today, the Dawson plant is thriving. Its processing capacity is about 25% larger than it was in 1983. Address: 6566 France Ave. S. #906, Edina, Minnesota 55435.

2006. Choquette, Ray. 2005. The origins of Ag Processing (AGP) in Boone Valley: Bill Lester and Jim Lindsay (Interview). *SoyaScan Notes*. June 28. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** He thinks of Bill Lester as the “godfather” of AGP. “Through Bill’s communication efforts, the doors were opened for the formation of AGP.” Bill Lester is retired and lives (with his wife, Marion) in Omaha, Nebraska. He can pretty well tell you everything that happened during the organization of AGP; he was there.

“When the soybean processors were merged, a board of directors was in place and the new organization was named Boone Valley Cooperative Processing Association. That board then tried to find an individual to lead the company; that’s when they hired Jim Lindsay. AGP became its own entity with its own board, and began to operate as a regional cooperative processor, whereby stock was issued to the participants and dividends began to be earned. Jim Lindsay retired about 3 years ago and the current CEO is Marty Reagan (a man).

Bill Lester was instrumental in hiring Ray in 1979 to

work at Farmland Industries. When Farmland’s soybean crushing plant became part of AGP in Sept. 1983, Ray was working for Farmland. “We each had to turn in an application and see if AGP would hire us again. We started all over again.” Ray was hired, so he moved from Sergeant Bluff to Eagle Grove, and has been with AGP ever since.

“Bill Lester would offer the perspective that led to the founding of AGP. Bill is one of the premier cooperative leaders in the Midwest, with expertise in the field of soybean processing. Jim Lindsay would offer the perspective of the person who led AGP from the time it started. Jim was an ADM private-sector purist; Bill Lester was a cooperative purist.” Address: Merchandising Manager, Ag Processing (AGP), Eagle Grove, Iowa. Phone: 515-448-4711.

2007. Lester, Bill. 2005. Boone Valley and the origins of Ag Processing Inc (AGP). Part III (Interview). *SoyaScan Notes*. June 28. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: Boone Valley now had to find a dynamic leader to run the new business—which was deeply in debt. A committee was formed and a head-hunting consultant was hired to let it be known that the job was available and to interview candidates. After seven weeks, in about Oct. 1983, the board of directors chose James W. Lindsay as general manager and CEO. Lindsay had been a vice-president at ADM—a private company and a competitor. “Jim possessed a great knowledge of soybean processing and vegetable oil refining; he worked his way up through the ranks at ADM. He had also spent time in Brazil in charge of ADM’s Brazilian operations. He was also a good leader, by giving you a job to do and the parameters, then letting you do it, with minimum updates unless you were deviating from the original discussion—a good boss and a very capable individual.” “Jim was a bit of a renegade. He didn’t go along with all of ADM’s philosophy and practices. He and I used to kid each other that we were a rare breed—neither of us had a college degree.” When Jim came to work at Boone Valley. He brought with him three coworkers and lieutenants from ADM: Jim Yeates, who became vice president for operations; Tony Porter, to be vice president for marketing and transportation; and Joe Meyer who became vice-president for vegetable oils and a meal exports. Not long afterwards, Daryl Dahl left Merrill Lynch to join the new cooperative as hedging center manager.

It was quickly decided to locate the new company’s corporate offices in Omaha, Nebraska. Initially, the Omaha Bank for Cooperatives offered temporary office space for the new management and staff. Lindsay and his team replaced some of the managers and other top employees at the 5 other soybean processors. “But overall there really weren’t that many. Some refused or hesitated to change the way they had been doing things. Lindsay said, you’re going to have to change, because the old way hasn’t been working.” It was

painful for some who had spent their lives in the soybean processing business and lost their jobs.

The board of directors and Jim Lindsay felt strongly that the new company needed a new name. A stigma had attached to the name “Boone Valley” because of all its financial problems. On 7 March 1984 the name of the new company was changed from Boone Valley Cooperative Processing Association to “Ag Processing Inc a cooperative.” Punctuation was deliberately omitted.” A new logo was also adopted “AGP” in gold letters on a green background. Before long the company was widely called simply “AGP.” That logo has been updated twice to adjust to the changing times.

Bill recalls: In February 1984 Jim Lindsay called me into Omaha. He said, “Bill, I want you to come into Omaha. I know soybean processing backwards and forwards. I know refining. I know the soybean side of it. But I don’t know anything about cooperatives. You’ve spent your whole life in them. I want you to come in and to head up the department known as Member Relations and Governmental Affairs.” In mid-June 1984, Jim and his family moved from Eagle Grove, Iowa, to Omaha, Nebraska. “Jim Lindsay had the private sector mentality and I had the cooperative mentality; we created what we called a ‘new hybrid.’” Bill stayed in this position until he retired on 1 June 1993.

Today AGP is strong organization. They haven’t grown as much during the last 10 in sales and profits as they did during their first 10 years in part because they are in a mature industry (soybean processing), with strong competitors such as ADM and Cargill. In the early years, much of their growth was from diversification, as into soybean oil refining, and from building new plants (as at Hastings and Emmetsburg). “AGP has done a tremendous job in the international marketplace. The terminal they built on the Pacific Coast at Grays Harbor in Washington state has been growing by leaps and bounds and is now a big asset. Their biodiesel business is also poised for growth. Jim Lindsay and Bill got AGP’s soy biodiesel started in its infancy. Two men in Kansas City, Missouri [Bill Ayres and Doug Pickering], were talking about and playing around with biodiesel. “We put \$50,000 into their business in about 1990-91 and now AGP owns that company.”

Bill retired on 1 June 1993. Tremendous changes have taken place in agriculture since then. Bill has kept in touch with developments at AGP since that time. He has continued to live in Omaha. During the summer, he and his family go to their cabin on Spirit Lake in Northwest Iowa. Nowadays he goes to AGP headquarters 2-3 times a month during the non-summer months.

The future of the big cooperatives looks limited to Bill because it is a mature industry. There may be growth of 3-5% a year. AGP also has a small grain operation; they work with the members—the local cooperatives—to help them merchandise their grain in other parts of the USA

and abroad. For example, they use their 100-car trains to move corn and soybeans down to their facilities near the big feedlots in Texas. The logistics is too complex and expensive for the small guys. Address: Omaha, Nebraska.

2008. ADM. 2005. Get to the *heart* of your formulation with NutriSoy® soy proteins (Ad). *Nutrition Outlook* 8(5):26. June.

• **Summary:** See next. page. “Healthy formulations are just a heartbeat away, thanks to NutriSoy® 100% natural soy protein, ADM’s technical expertise, and a broad line of supporting specialty food ingredients.

“For a versatile line of ingredients that makes healthy, tasty products consumers love, turn to the NutriSoy family of products:

“Pro-Fam® isolates

“Arcon® concentrates

“Textured vegetable protein chunks and crumbles

“Flours

“Grits

“PFL™ blend

“NutriSoy® Organic Whole Soybean Powder

“NutriSoy Next™ meat alternatives

“NutriSoy soy proteins—ideal ingredients that get to the heart of your formulas.

Note: This ad faces an article titled “Soy protein ingredients,” by Terry Gieske. Address: Decatur, Illinois. Phone: 1-800-637-5843.

2009. *NSRL Bulletin (National Soybean Research Laboratory, Urbana, Illinois)*. 2005. Study shows soy well accepted in school lunches. 12(2):1-2. June.

• **Summary:** Childhood obesity is now a major U.S. concern, affecting as many as 20% of school children. To help counteract obesity, the Illinois Center for Soy Foods at the University of Illinois has recently completed a pilot program, named ISOY, “to demonstrate the nutritional benefits of including soy in the state’s school lunch program.” The program is a joint effort of the Illinois Soybean Checkoff Board and ADM.



Many school lunches presently exceed the recommended fat and calorie content given in federal and state regulations. ISOY showed that products

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- Flours
- Grits
- PFL™ blend
- NutriSoy® Organic Whole Soybean Powder
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made from soy ingredients can help reduce fat, cholesterol, and calories in the lunches, and still be acceptable to the students. The test included 4 non-meat entrees: spaghetti with sauce, chili, ravioli, and nuggets (like fast-food chicken nuggets). The percentage of plate waste was used to judge acceptability. “The results showed that the percentage consumed of the soy products versus the meat versions was the same for the chili and spaghetti dishes used in the study.” Equal amounts of these foods were eaten. Soy-enhanced ravioli and nuggets were not as well liked.

A photo shows: “Barbara Klein, co-director of the Illinois Center for Soy Foods, samples some new soy-fortified recipes for tasting in school lunch programs around the state.”

2010. Miller, Tommy. 2005. Riceland Foods no longer operates a soybean crushing plant at Helena, Arkansas. It is now closed (Interview). *SoyaScan Notes*. July 25. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In 1984, Riceland sold this plant in Helena, Arkansas, to Quincy Soybean Co., which was acquired by ADM in about 1998. ADM shut down the plant in about 2003. Soybean acreage in the South has not decreased. This cutback is because newer and larger plants are more efficient, and have lower processing costs. At the time it was built, in 1964, Riceland’s plant in Helena, Arkansas, was the larger and more modern of the two, but this was not the case by 1984, when the plant at Stuttgart had become the larger and more modern of the two. Address: Soybean Div., Riceland Foods. Phone: 870-673-5500.

2011. McKee, David. 2005. South America: The world’s soybean super supplier. Brazil, Argentina and Paraguay have seen their combined soybean production rise 350% during the past 20 years. *World Grain* 23(8):32-34, 36, 38. Aug.

• **Summary:** A superb, insightful, long article. In Brazil and Argentina, and to a lesser extent in Paraguay and Bolivia, soybean production has grown dramatically in recent decades. “In fact the accelerating expansion of South American soybean production in the last 20 years may be unprecedented for any agricultural commodity in a single region of the world in terms of planted area, absolute increases in harvests, volumes, processing and rising export values.

In 2005-06, considering the soy complex as a whole, Brazil will surpass the USA as the world’s leading exporter with a combined 42.5 million tonnes—based on USDA forecasts. Argentina, at 36.8 million tonnes, will be just behind the U.S.’s 37.7 million tonnes (see bar charts, p. 36). The USA is still the world leader in soybean shipments, but in soybean meal and soy oil, Brazil and Argentina have long ranked number one and two ahead of the U.S.

The main reason for this unprecedented expansion in South American soybean supply during the last decade is the

unprecedented demand in growth from China; rapidly rising incomes there have led to more meat consumption and a bigger, more sophisticated livestock feed industry.

In 1995 China was nearly self-sufficient in soybeans with almost 14 million tonnes of domestic production and less than 1 million tonnes of imports. Yet by 2004-05 (Sept. to Aug.) China had passed the E.U. [European Union] to become the world’s leading importer with 23.2 million tonnes. During the same period, exports of soybeans from Brazil and Argentina increased by 27 million tonnes.

The soybean is a more important crop in South America than even in North America. In Brazil, Argentina, and Paraguay, soybeans and soy products are the most valuable category of agricultural exports.

What has caused this remarkable rise? In Brazil it is the availability of a huge amount of unused arable land in the country’s “Midwest.” In Brazil, soybean production has progressed historically from the southern states of Parana and Rio Grande do Sul, northward into the interior of Brazil’s Midwest.

A sidebar, titled “Capital: The ABCD’s of the soybean industry,” explains that the “role of international capital in the expansion of Brazilian and Argentinian soybean production cannot be overstated.” Huge multinational firms like ADM, Bunge, Cargill, and Louis Dreyfus dominate soybean crushing and trade in both countries. They have provided their own infrastructure as well as seed, fertilizer, and crop financing. Cargill and Bunge even produce and distribute phosphate fertilizer in South America. The ‘big four’ own more than half of the soybean solvent extraction plants in Brazil, and account for a much larger percentage of the country’s total installed crush capacity of 39 million tonnes a year. Bunge is the leading soybean crusher in Brazil, with Cargill at no. 2. But Cargill is the leading soybean exporter, operating five export terminals along Brazil’s Atlantic coast. ADM was the latecomer to Brazil, but after arriving, its strategy has been swift and decisive.

In Argentina, ADM does not own any soybean crushing plants, but in 2004, together with its trading subsidiary, Toepfer, it exported about 20% of all of Argentina’s soybeans—1.8 million tonnes. In Paraguay, ADM moves as much as 40% of the soybean harvest.

Photos show: (1) Aerial view of a new soybean crushing plant at General San Martin Port on the Parana River in Argentina’s Santa Fe Province. Like much of the country’s soybean extraction capacity, it was built purposely for export. (2) Aerial view of Louis Dreyfus port facility and soybean crushing plant in General Lagos, Argentina.

Bar charts show (p. 36): (1—very interesting) Exports (in million tons) of soybeans, soybean oil, and soybean meal from Argentina, Brazil, and the USA in the years 1995 and 2005. In 2005, Argentina exports mostly meal, followed by soybeans, then oil. Brazil exports mostly soybeans, followed by meal, then oil. The USA exports mostly soybeans (more

than Argentina and Brazil), followed by small amounts of meal and oil. (2) Soybean area and harvest (production): In 2005, the USA as the largest total production, followed by Brazil and Argentina. But U.S. production has shown relatively small percentage growth, compared with the percentages of in Brazil (#2) and Argentina (#1).

2012. Soyfoods Association of North America. 2005. New taste of soy: Annual reception September 15, 2005 (Card). Washington, DC. 1 p. Front and back. 13 x 18 cm.

• **Summary:** “The New Taste of Soy is a chance to sample a delightful array of soyfoods and talk with policy makers, Administration officials and leading representatives in the soyfoods industry, including manufacturers, growers and suppliers.

“Thursday, September, 2005. 5:00–7:00 pm. U.S. Capitol, Room HC-5\*, Washington, DC.

“A special thank you to Congressman Collin Peterson from Minnesota for hosting this year’s event. RSVP: members@soyfoods.org—by September 7, 2005.

“Sponsored by: Soyfoods Association of North America, Archer Daniels Midland, Cargill, Boca Foods, Hain-Celestial Group, Kellogg’s / Worthington Foods, Monsanto, Natural Products Inc., Revival Soy, Solae, Sunrich, a Division of SunOpta, Vitasoy USA, White Wave Foods.” Printed green and black on white. Address: 1101 Connecticut Ave. NW, Suite 1120, Washington, DC 20036. Phone: 202-659-3520.

2013. Boismenu, Clyde. 2005. Soy protein isolates—old and new (Interview). *SoyaScan Notes*. Sept. 9. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Cargill has fallen flat on their face with their isolate made by ultrafiltration. Soy protein clogs the filters. The product is very fluffy. And there are waste water disposal problems; they must dilute it and back-flush the filters. It is still made from hexane-extracted white flakes.

Almost all isolates are spray dried; this reduces their dispersibility. To solve the problem, the powder is agglomerated by spraying it with a fine mist of water. It is still a free-flowing powder but now more expensive. Ideally you want an isolate that will “fall in,” meaning it will disperse in water by itself, without stirring, when it is placed on the surface.

Clyde has spent much of the past year evaluating and developing soy protein isolates for food ingredient use. Supro 661 is still the best-selling isolate to the health and natural foods industries. Sand is very dispersible in water but not at all soluble.

Isolates have 3 main problems. 1. Flavor. 2. Those with a bland flavor are quite viscous, so they are not very soluble. 3. Color; many are tan, and can only be made white by bleaching.

Solae and ADM are the two biggest makers of isolates and Solae is about 5 times as big as ADM. ADM’s branded

products have a hard time because they are part of a commodity company, which thinks only in terms of price; they have no concept of sales or customer service. They treat their isolates like a commodity, and always ask: At what price could we sell it? That is the wrong question, the wrong approach. Some people won’t buy it at any price. Customers of isolates need customer support and a product suited to their special needs.

A centipoise (pronounced SENT-uh-pwaz) is a unit of absolute or dynamic viscosity (1/100 of a poise) in the cgs system. Water is 7-10 centipoise. Slimfast in liquid is about 100 centipoise. The approximate viscosity, in centipoise, of various substances at room temperature is: Water 1, olive oil 100, Slimfast in liquid 100, a thin milk shake 700, motor oil 100–2000, honey 2000–10,000, molasses 5,000–10,000, Heinz ketchup 50,000–70,000, peanut butter 250,000. Address: Basic Foods Co., P.O. Box 240070, Los Angeles, California 90024. Phone: 310-473-0719.

2014. Messina, Mark J. 2005. Update on research on the health benefits and risks of soy (Interview). *SoyaScan Notes*. Sept. 15. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** A health food company is being sued by a cardiologist and his wife, a Boston, Massachusetts, socialite, because their daughter, who consumed soy infant formula, is now 10 years old, overweight, and shorter than the average height of girls her weight.

Sally Squires wrote an article in the *Los Angeles Times* and ended up quoting Kayla Daniels and Mark.

For people with questions about the health benefits of soy, SANA has a superficial “soy primer.”

Mark and Ginny have now decided not to update their book *The Simple Soybean and Your Health*. Mark is too busy.

There is a new “4th tier” journal titled *Explore: The Journal of Science and Healing*. Parts of it are peer reviewed. They will have a department titled “Point-Counter Point” in which both sides of controversial issues will be debated; it is not clear whether or not this department will be peer reviewed. Kaayla Daniel (who has never published anything in the peer-reviewed literature and has a “phony PhD”) will present one side and Mark will present the other. Yet to do a careful analysis of each of the issues takes much more space than the journal is willing to allow.

A huge new report by NIH on the health benefits of soy has just been published. It concluded no significant benefits.

The 6th International Symposium on the Role of Soy in Preventing and Treating Chronic Disease will be held in Chicago, Illinois, this fall. Mark is again the organizer. Attendance is way down, so it might be the last one. So far only 74 full registrants, 6 students, and 6 complementaries are registered. Sept. 30 is the date after which the cost of admission rises. This compares with 394 attendees in 1995, 496 in 1997, 600 in 1999 (the peak year), 260 in 2001 and

220 in 2003. Why the decline: This is now a mature field. Huge numbers of studies on the health benefits of soy have been conducted and the benefits are just not that impressive. If there is another conference, it will be smaller, shorter, and more focused on hot topics such as soy and cancer. Mark has had to raise about \$100,000 for each of the past conferences.

If consumers lose interest in soy, research, retail sales, advertising, and articles in magazines and newspapers will decline. In America, nutrition comes and goes like fashions; what is “in” this year may be “out” a few years later. White Wave has everything riding on the short term outcome of these developments.

Mark thinks we need a million dollar pro-soy campaign and a solid retrospective study (which would cost only \$300,000 to \$400,000 dollars) to address fertility concerns. A researcher could go to fertility clinics and ask the clients and their living parents which ones consumed soy-based infant formula. Many of the animal studies are very old—the 1946 study on Australian sheep and the later one on cheetahs in a U.S. zoo.

A hot topic now is potential risks and safety concerns of soy, especially for infants, but also fertility concerns for adults. Significant questions are being raised that soy isoflavones could raise hormonal effects. Kayla Daniels is completely irresponsible in the kinds of statements she makes. She says there are “hundreds of studies” in areas where there may be only ten, and where only one is conclusive.

Bunge did a very careful analysis of how much soy protein the average American consumes for all different sources, including breads, soups, etc. They concluded it was 2.2 gm of soy protein per person per day; that would include 1-2 mg of soy isoflavones.

ADM is turning its interest to lignans in flaxseed.  
Address: PhD, 439 Calhoun St., Port Townsend, Washington 98368. Phone: 360-379-9544.

2015. Foster, Mike. 2005. Quincy Soybean Co. and Moorman Manufacturing Co. (Interview). *SoyaScan Notes*. Sept. 17. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The great Mississippi River flood during July 1993 did not hurt Quincy Soybean Co. The levee at Quincy (which is a “500-year levee”) was one of the few that held, so that company was not flooded. The levee across from Quincy on the Missouri side broke and the bottomland / floodplain was flooded over many square miles. The company may have shut down the processing for 1-2 weeks but nobody was laid off. They simply had to re-route their shipments of soybean products by truck since barges could not travel on the Mississippi. The city of Quincy sits on a bluff 100-150 feet above the river, but the soybean company, now located south of Quincy, is very near the river.

In 1998 ADM purchased Moorman Manufacturing Co.,

the umbrella company which owned Quincy Soybean Co. No single event or problem triggered this transaction, and it is not clear who approached whom. ADM and Moorman had done business for many years; Moorman’s feed company bought soybean meal from ADM to use in their feeds. It was well known for years that ADM wanted the Quincy Soybean Co. to add to its growing network of soybean plants in the Midwest.

Moorman Manufacturing Co. was a closely held corporation with a very interesting history. The company was made up of 3 divisions: MoorMan’s (the feed business), AgriSales (the edible bean business), and Quincy Soybean. There was no liquidity or market for the stock; it was not bought or sold. For many years, Moorman paid a very high dividend. So here was a company that needed to grow and had a large appetite for capital. “When Moorman Manufacturing Co. looked to sell to somebody, ADM made the most sense, because they could buy the whole company—lock, stock, and barrel, and because ADM paid a significant premium over the book value of the shares. There was an excellent fit between the two companies. It was a friendly and mutually beneficial transaction, which took the form of a tax-free stock exchange. Moorman’s shareholders were no longer members of the Moorman family; the last of them, Mrs. Moorman, had died in the late 1960s or early 1970s. The shares had long since been dispersed; by 1998 the Moorman Profit Sharing Fund owned about one-third of the company.

The Moorman family and some of the later executives at Moorman’s were very paternalistic. As shares became available, they would throw them in the profit sharing fund. They were extremely good to their workers; there was never a hint of a union. Some guys who worked for Moorman’s as a laborer, filling feed bags and throwing them on a pallet for their entire lives, would retire with \$400,000 to \$500,000 from the Profit Sharing Fund. “The loyalty of some of the old Moorman employees was unbelievable. During the Great Depression, when many businesses were in trouble, the Moorman brothers explained to the employees that cash was tight and they were in trouble, than asked each one, ‘How much money per week do you need to live on?’ They paid each worker that amount, but they also kept track of how much they had given up from each. Later on, when business improved, they paid the workers back all of the money withheld, plus interest, then they established an annual bonus. People who went through that would have walked through fire for the Moorman brothers. The same sense of loyalty extended to Quincy Soybean.”

Mike has been very lucky. Quincy is his home town. He started with Moorman’s in the feed business in 1971 as his first job out of college. He worked there for 18-19 years before he went to Quincy Soybean. Mike returned to Moorman’s in 1994, then stayed on after ADM acquired the company in 1998 and ran the feed business as its president.

He retired in Dec. 2004. Mike worked for Moorman's his entire life. Like others, he was a beneficiary of the company's profit sharing plan and generosity. The Moorman Manufacturing Co. was very private, and not much is known or has been written about it. There may be a history of the company in the Quincy Public Library. The Moorman's had nothing to do with the Mormon church. However in 1940 E.V. Moorman ran for Vice president of the United States on the Prohibition Party's slate.

Moorman started in 1885 in Big Spring, Kentucky, as a "hog tonic" business, run by a father (T.A. "Tom" Moorman) and his two sons (C.A. Moorman and E.V. Moorman). Initially they raised hogs. "As the story goes, their hogs were sick, they wrote to the USDA describing the symptoms, and asked what they should do. The USDA suggested some mineral supplements. The Moormans obtained the minerals, ground them in a coffee grinder, fed them to their hogs and—gosh—the hogs did very well. The neighbors said, gee, can we have some of that? The next thing you know, the Moormans are grinding minerals, putting it into gunny sacks, putting it on a wagon and delivering it around the country." The business grew from feed supplements to livestock feeds, and they expanded into other species and new product lines. They grew that business until they had about 5,000 employees. In 1900 they moved from Big Spring, Kentucky, to Gorin, Missouri, following livestock populations. In 1910 they ended up in Quincy, because of its proximity to the river and other forms of transportation. In Sept. 1961 Moorman Manufacturing Co. purchased Quincy Soybean Products from Irving Rosen.

After ADM bought Moorman, they kept all of its divisions; they merged Moorman's nationwide feed business with theirs, and continued to operate the edible bean business—basically exporting beans such as pinto beans. ConAgra and AgriSales, depending on what day it was, were No. 1 and No. 2 in the edible bean business. ADM's huge plant at Quincy continues to thrive and be very productive. "It's one of ADM's premier plants."

ADM shut down the plant in Helena, Arkansas, as part of a program to rationalize capacity as new competitors were coming into the soybean crushing industry; they shut down 2-3 plants at about that time. The plant is still standing at Helena, unused. Mike doubts that ADM would have been willing to sell it; they want neither that extra capacity nor that competition. "In a commodity world, it's all about supply and demand." Address: Past President, Quincy Soybean Co., Quincy, Illinois.

2016. Jackson, Harry. 2005. Recollections of Irving Rosen and Quincy Soybean Products Co. Part II (Interview). *SoyaScan Notes*. Sept. 26. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: What kind of a man was Irving? Hal recalls: "He was a wonderful man, a sweet, kind, quiet guy

who worked very hard. He came from a very poor family on the west side of Chicago. I hear he had only 5th grade education. He arrived at work early each day, was a hands-on guy, low key with a low voice, never put on a show about anything, not obtrusive at all, intelligent. He wasn't the kind who would put it in the newspaper every time they started up something; he sort of kept things quiet. He didn't want to be in the news. Like the other Sinaikos, he was a self-made man. He joined the local clubs in Quincy because our people were not well accepted in those days—the good old establishment. He had a hell of a time getting the funds to build the original plant. No bankers would loan him money—except for one man at the State Street Bank, which is why I go there still. He joined the Rotary Club and all that sort of thing but he was still an unknown. He was one of the first people in Quincy to hire black people at his plant.

"Alex Sinaiko, Joe's father, was the big guy in the family; he and his sons were in the grain business in Madison, Wisconsin. The Sinaiko brothers shared people as well as information. Joe had some very fine people who came in and installed equipment. One man was Louis Langhurst, a wonderful man who designed flaking mills and knew a lot about soybean plants. They don't make 'em like that any more." Another guy was Howard Devine from Iowa. He sold the Devinator, a conveyor that had metal plates that moved the flakes into the extractor, and also brought the extracted flakes out of the desolventizer—without mashing the flakes or creating any sparks. Devine's product was similar to that of Linkbelt. Another excellent equipment supplier was Les Mauer from St. Louis, Missouri; he sold conveyors and helped do plant layout; he would climb all over the equipment and the plant, and he knew how everything worked. "We had wonderful people that we worked with—many of them little guys who Joe Sinaiko helped to get started."

How did Irving make money in those early days of soybean processing? Crushing margins, set by the government, were good during World War II. So they made good money during the war. "They got in the right business ahead of time."

The Moorman company, which was headquartered in Quincy, bought soybean meal for the livestock feed business from Irving. Then they decided to expand into the soybean processing business. Irving felt that the time was right for him to retire. So Irving sold his company to them in Sept. 1961 when he was about age 60 and in good health; Hal stayed on until 31 Dec. 1980. Marcella, Irving's wife, had died on 8 March 1958 in Quincy (of a brain tumor), even though Irving, a very loving husband, had done everything he could to save her. Shortly after her death, he moved to Chicago, gave much more responsibility for Quincy Soybean to other people, and visited from time to time. After about 2 years he met a widow named Ida; they were married and continued to live in Chicago. He and Ida vacationed in

Miami Beach, Florida, and Hal thinks he contracted hepatitis B there. This turned into liver cancer. He went to the Mayo Clinic in Minneapolis, Minnesota, for treatment. It was important to Irving that, in his will, the money he made from the sale of his business be distributed equally among his four children. Irving died on 18 April 1964 at the Mayo Clinic in Rochester, Minnesota, of liver cancer.

The Moormans ran the company in a totally different way than Irving had. Hal recalls that they were Christian evangelists; he was the only Jewish guy that ever worked there. Some of the old-timers were very anti-Semitic. "I wasn't that comfortable." Mr. Hulsen, later the president, was very good to Hal. Moorman brought in an outsider from Canada, who made millions for arranging the sale of the company to ADM, then left the company. After ADM bought the company in 1998, they put up ADM stock for the profit-sharing plans. But when the ADM stock dropped from 24 to 12, the Moorman retirees who had profit-sharing and pension plans lost about half their money. This was very upsetting to all the old-timers who had been there for 30-40 years. Some of them had hundreds of thousands of dollars in these profit-sharing plans.

At Quincy Soybean, Hal worked for Ted Bean, who came to Quincy from Lauhoff Grain in Danville, Illinois. "Ted was one of the most astute marketing men I ever met." He kept us out of the soy protein ingredients. business. Things were done very efficiently and people worked very hard, so that Quincy made more money than Moorman's other divisions. Quincy had a very efficient plant and excellent marketing—from Ted Bean. Joe taught his friends how to save money by buying used equipment; Hal traveled all over the world buying used equipment—and a lot of it was just as good or better than new. Every year Quincy increased its volume to gain efficiency. When Hal retired on 31 Dec. 1980, Quincy was the single largest soybean processing plant on one site in the United States. They had solvent extraction plants on both sides of the railroad tracks. The oil refinery is still there.

Quincy used a very unusual process to remove the hulls from soybean meal to make 50-51% protein meal. Starting in about the mid-1960s, they removed the hulls at the tail end of the process using gravity separation vibrating tables named "Sutton tables." Tail-end dehulling cost much less than the other technology which dehulled at the front end. There were 5-6 Sutton tables in the Quincy plant; they were shaped somewhat like a sloping triangle with air coming up from underneath. The heavy material came off the at top and the light fluffy stuff (like the soybean hulls) came off at the bottom. Quincy was one of the few plants in the industry that used Sutton tables; the plant never used expensive front-end dehulling. Louis Langhurst started his own company that made excellent low cost cracking mills and flaking mills.

Ike Sinaiko started a small oilseed crushing company (using expellers) in California. He definitely crushed

soybeans; Hal went there and saw them being crushed. Ike was a very sweet guy. Irving Field, Ike's son in law, took over the company from Ike. Note: Liberty Vegetable Oil Co. in Norwalk, California, started in 1948.

Hal remembers Joe Sinaiko as "tough and smart. He was all business. He was the brains, but he didn't lollygag around [fool around]. He knew what he wanted to do and he knew how he wanted to do it. He was the lead guy and he had a lot of weight on his shoulders. It's not easy to be a pioneer."

Hal offers to help Soyfoods Center do research on the early history of Quincy Soybean Co. He has called the French Oil Mill Machinery Co. (Piqua, Ohio) and they have offered to look in their archives for the date that Quincy Soybean ordered their equipment. He will also work with the local newspaper and historical society.

Note: In Nov. 2005 Hal sent Soyfoods Center a wealth of valuable documents on the history of Quincy Soybean. Adrienne Rosen, wife of Norman Rosen (Irving's son, who now has Alzheimer's), sent many early and very interesting photographs. Address: Quincy, Illinois.

2017. Soyatech, Inc. 2005. Soya & Oilseed Bluebook 2006: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 416 p. Sept. Comprehensive index. Brand name index. Advertiser index. Statistical conversions. 28 cm.

• **Summary:** On the cover is color photo of two cupped hands holding a very small soybean plant rooted in soil—against a greenish black background. On the inside front cover is a color ad from Natural Products Inc. (Grinnell, Iowa) titled "Always unique, always innovative, always natural." Color photos show ready to eat products made with Scotsman's Mill whole egg extender, egg white extender, and enzyme active low fat soy flour, plus roasted soy grits, bakery ingredients, and soymilk powders. On the first page is a full page color ad from Bunge North America (St. Louis, Missouri) titled "The shortest distance from harvest to market." On the back cover is a full page color ADM ad ADM showing a Chinese teenager eating tofu from a plate, using chopsticks. The text is the same as that of one of ADM's current TV ads: "Somewhere west of Shenyang, a teenager is stopping for dinner... A dinner rich in soy protein. As one of the world's largest soy processors, we like the idea that there will be no stopping him now."

On the title page of the book is a bright green self-adhesive label containing "Your access code," which expires in a year.

In the Foreword, Peter Golbitz of Soyatech compares the world of today with that of 1947, when the *Soybean Bluebook* was first published. The year 1947 marked a dramatic turning point; "it was the last year that China led the world in soybean production... The U.S. produced 183.6 million bushels (5 million metric tons) [of soybeans] that year, around 34% of the world's total. And the price for a

bushel of U.S. soybeans averaged \$3.34.” In 1948, the U.S. passed China to become the world’s leading producer of soybeans. Today, it looks like Brazil will soon pass the USA as the world’s largest producer of soybeans. Note: In 2005/06 the U.S. produced 78.789 million metric tons of soybeans, followed by Brazil which produced 62.000 million. Address: 1369 State Hwy 102, P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

2018. Barrett, Walter. 2005. Work with soybeans in Central Asia (Interview). *SoyaScan Notes*. Oct. 4 and 6. Conducted by William Shurtleff of Soyfoods Center. Preceded by letter (e-mail) of Oct. 3.

• **Summary:** Walter has worked with soybeans in 4 Central Asian nations: Kazakhstan, Uzbekistan, Turkmenistan, and Tajikistan. Kazakhstan and Georgia have the most history with commercial soybean production, because Soviet planners made it happen there. They designated other Central Asian countries for cotton production, in part because cotton needs less water. Latitude is part of the reason. The climate is also very dry, so that all soybeans (and almost all crops) in these countries must be irrigated, but with river water carried by gravity. Of all the Central Asian countries, Kazakhstan has been the most successful at understanding a market economy and making it work.

Walter has many contacts in these countries. He is willing to help Shurtleff try to get a better history of soybeans in each of these countries. First, Shurtleff will send Walter an e-mail containing a table showing the dates he has for the earliest document seen showing soybeans in each in each country, and soybean cultivation in each country. Then the earliest date seen for soybean cultivation in each country. Walter will forward this e-mail to an intermediary (Winrock International or Mercy Corps), who will then mail or phone or hand deliver the message to the network of indigenous researchers Walter has developed over the years. The message will encourage them to contact other researchers who might be interested; then Walter will wait for replies.

Walter believes that Korean communities in at least four of these countries (Turkmenistan, Uzbekistan, southern Kazakhstan, and Tajikistan) were growing soybeans for their own use at an early date—probably since the early 1900s and using them almost entirely for food—such as tofu, soy sprouts, Korean-style miso and soy sauce, green vegetable soybeans, etc. The Koreans raise chickens, for example, but they forage for food and are not fed soybeans. Walter has no idea when, or, why, or how these many Korean communities came to be established in Central Asia. He has no idea where the soybean varieties they grow came from. These Korean communities are all found within a horizontal oval that cuts across national boundaries, and includes the cities of Almaty [Alma-Ata] (in southwest Kazakhstan), Tashkent [Tashkent] (capital of Kyrgyzstan), Dushanbe (capital of Tajikistan), and Ashgabat (capital of Turkmenistan). In this area are

numerous Korean restaurants where Walter has eaten; but he has no idea how many Koreans live in this area. Most individual Korean communities grew only one variety, but each Korean community had its own variety. By contrast, there are not many Chinese communities in these areas.

Walter expects his next trip to Central Asia to be in the spring of 2006—probably Uzbekistan and possibly Turkmenistan or Tajikistan. He is given drivers and interpreters by the NGO sponsoring his trip. One of the ongoing problems he faces is the limited abilities of interpreters; communication is often difficult, and it is hard to pursue agricultural or academic questions with farmers. It is less difficult with educated researchers or academicians (best is Tajikistan, followed by Turkmenistan—who might help find others). The researchers in these countries don’t talk much with each other, either within a country or among countries. They have few opportunities to travel, and little access to the Internet or e-mail. This is because of government restrictions, difficulty of getting visas or money, etc. Researchers are lucky if they have a working computer, but most have a telephone and some have a cell-phone.

Of all Central Asian countries, Kazakhstan is the one in which the soybean is the most important as a commercial crop—by far. They probably have at least several thousand hectares planted to soybeans. The soybeans in Kazakhstan are run through an extruder (extrusion cooker) to make soybean oil and meal. These same extruders are also used to process cottonseed. Soybeans are grown in Central Asia largely because of the demand for meal by the local poultry industry for use in chicken feeds. Poultry is the driving force, and Central Asia is a “protein-poor” region. Walter’s main reason for being there is because of poultry and (to a lesser extent) livestock; it is to help educate them about the soybean, its value for producing soybean meal and oil, and about the importance of protein. He helps farmers to grow soybeans and to develop markets for their beans. Actually, there is a ready-made market from poultry growers—who now have to pay a lot of freight to import their soybeans from Kazakhstan, Iran, Turkey, or India. The key is for Walter to serve as the bridge—to help bring the poultry growers and the potential soybean farmers together, to discover that they have a common interest, and then to work out agreements.

NGOs do lots of impact studies; they want their volunteers to work on projects that will have economic impact. They believe that increasing poultry production will have a positive impact on the economy and the people. The oil is also appreciated, and refined using modern technology within each country for use as a high-quality edible oil, sold in bottles at retail stores. Kazakhstan is about one-half the size of the United States, and is quite a progressive country with a market economy, fairly advanced education and technology. Soybeans are grown mostly in the very south. They were a major crop during Soviet times (Russia was a major market for the oil and meal), but after Kazakhstan

became independent in 1990, soybean production fell off to near zero. The economies of Central Asian countries plunged at about the same time (1989-91). They are now slowly getting back to where they once were.

The second most important country for soybeans (a very distant second, with maybe 300-500 hectares planted to soybeans) is the Republic of Georgia, where the western half is quite moist and the eastern half is very dry. They have a long history of growing soybeans. Walter knows of one company there that is processing soybeans using an extrusion cooker (similar to that made by Insta-Pro).

In third place might be Uzbekistan, followed by Turkmenistan, and Tajikistan—but all with only about several hundred hectares in soybeans.

Walter believes that soybeans could become a valuable double crop in Central Asia, planted after the wheat harvest in June. That would earn farmers more income, improve the soil, and break various insect and disease cycles. They need a legume in the rotation. The government does not help. They seem interested only in short term profit, keeping the status quo, and staying in power, not in innovation or long-term thinking.

In Tajikistan, he met a village farmer, Mr. Mahmaddullo, who had the ability to build machines. He already had a small business making wheat flour using two motor-powered millstones. He worked with Walter to build a revolving soybean drum roaster; the outside was heated by natural-gas flames. After roasting a batch of about 20-25 kg of soybeans, he ground them into roasted soy flour.

In Turkmenistan, Dr. Ashraf spent quite a bit of time working with a Korean community in the town of Dashoguz in making tofu. She also worked a lot with Peace Corps Volunteers (PCVs) in that same town; one of the PCVs was a Korean-American. Walter has not heard of any TVP being made in Central Asia; if its is made, it must be in very small quantity. In Uzbekistan, technologically the most developed, soybeans are being grown—often spread by volunteers. Address: 2804 Trent Drive, Fort Wayne, Indiana 46815. Phone: 260-484-7493.

2019. Archer Daniels Midland Co. 2005. Annual report. P.O. Box 1470, Decatur, IL 62525. 62 p. Oct. 28 cm.

• **Summary:** Net sales and other operating income for 2005 (year ended June 30) were \$33,943.8 million, down 2.0% from 2004. Net earnings for 2004 were \$1,044.4 million, up 211% (more than double) from 2004 and an all-time record. Shareholders' equity (net worth) is \$8,433 million, up 9.5% from 2004. Net earnings per common share (basic): \$1.60, up 210.5% from 2004.

The theme of this report is “intellectual capital.” ADM's record earnings of \$1 billion “reflect the application of our intellectual capital to the management of our network of global assets... The foundation of our business is agricultural processing.”

“Net earnings for fiscal 2005 increased principally due to the absence of last year's fructose litigation expense of \$400 million...” (p. 24). Two graphs (p. 24-25) give analyses by segment in 2005. Oilseeds processing had the highest net sales (\$11,803 million) and the highest operating profit (\$345 million). On pages 56-57 is ten year summary (a table, 1996-2005) of operating, financial and other data. Sales have more than doubled. Total assets are up 78%. Number of employees is up 80%. A photo (p. 2) shows G. Allen Andreas, chairman and chief executive.

Accompanying the annual report is a “Notice of Annual Meeting.” G. Allen Andreas, age 60, Chairman of the Board and CEO, had a 2004 salary of \$2,960,005 plus \$105,907 other annual compensation. Address: Decatur, Illinois.

2020. Bullard, Everett; Summers, David. 2005. History of the soybean crushing plant at Cameron, South Carolina (Interview). *SoyaScan Notes*. Nov. 29. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** David recalls that in about 1956-1957, when he was age 16, he and his girlfriend were given a ride up in the elevator to the top of about 12 connected towering concrete storage bins at Cameron; they could see for many miles in every direction. He is sure there was no soybean processing plant there at the time; only the storage tanks—used to store soybeans and many other grains such as oats, wheat, etc. The property was owned by Mr. Harper and Mr. Bowers, owners of Southern Soya Corp. in Estill, South Carolina.

Everett had a long background in soybean processing before he arrived in Cameron, South Carolina. In 1947 he started at Wilson, Arkansas, with Lee Wilson & Co., Soybean Division (subsidiary of Lee Wilson & Co.); it was a solvent extraction plant. In 1948 he was at Osceola, Arkansas with Osceola Products Co. (a hexane solvent plant, which was in operation when he arrived). In 1958 he was present in Selma, North Carolina, where he helped to build and start the Selma Soybean Corp. He was plant superintendent at the time he moved to Cameron. He arrived in Cameron in Aug. 1965 and went to work at the Southern Soya Corp. of Cameron, of which Stiles M. Harper was president. The solvent plant at Cameron had started operation in about 1963. Cameron, located in the center of South Carolina, was not a very good site for a soybean processing plant; since it was not near any river or ocean, the soybeans had to be brought in and the oil and meal taken out by rail or truck—which was quite expensive.

In about Aug. 1972 there was a hexane solvent explosion at the plant; Everett was plant manager at the time. He lived about a mile out of town and he heard the explosion from his home at about midnight. An article about the explosion was probably published in a local newspaper, *Orangeburg Times and Democrat* or the *Calhoun Times*. He called two local fire departments but they couldn't get through the chain link fence around the plant. Everett was extremely worried.

If the fire reached the hexane in the bottom of the Rotocel extractor, it could cause a huge explosion and widespread damage. So he called Shaw Air Force Base near the town of Sumpter and they sent a big fire truck carrying foam. The truck backed over the chain link fence, then quickly smothered the fire with its foam. “They saved the day—and the town—recalls Everett.”

David recalls that the hexane gas explosion was in early Aug. 1972. A man named Mr. Ed Polin [Charles Edward Polin, age 53] died from the explosion, about 10-14 days later, after being treated for several days in a burn center—probably at Augusta or Columbia. A black workman, named Bubba, picked him up, carried him to a place with water, and tried to help him. Mr. Polin’s son says that he was buried on Aug. 28 or 29 [sic, Polin died on Aug. 29].

Southern Soya rebuilt the plant promptly and enlarged it.

Continental Grain Co. purchased the mill at Cameron from Harper and Bowers in about 1973. Initially Continental had its own letterhead on the stationery for the Cameron plant. Then they were notified to change the letterhead from “Continental Grain Co.” to “Allied Mills.” But after less than a year they were told to change it back to “Continental Grain Co.” He never understood what that was all about. Initially he traveled to Continental’s head office high in a sky scraper in New York City (He recalls couches made of unborn calf leather, and staying the night at the Waldorf Astoria), then later to Chicago [Illinois], then still later back to New York. “Continental was always very secretive—even with the people who ran their own plants! They always had to have their man, out of their main office, down here at Cameron as “manager.” One was a young man named Gene Gawthorp, and he knew almost nothing about running a soybean processing plant.” Everett, who actually ran the plant, was called “production manager.” Few Whites were willing to work in a soybean plant in South; the dust was terrible, the soybeans smelled awful when wet, and the work was hazardous.

Everett continued working at the Cameron plant until 1983, when he retired. He thinks Continental sold the plant (located at Highway 33 & Cemetery Rd.) to ADM in late 1987. ADM, which operated a plant in Kershaw, South Carolina, never operated their plant in Cameron; Everett thinks they bought it in order to shut it down and thus to get rid of excess processing capacity in South Carolina. Also, he thinks anti-trust law prevented them from operating it. ADM shipped out the machinery they needed at other plants, but they continued to use the concrete storage bins for storing soybeans and other grains. ADM cut up the steel storage tanks and sold them as scrap.

David recalls that in about Dec. 2000, ADM asked David if he wanted to buy the land—before the year’s end. He did and now he owns it. The concrete bins are presently used to store peanuts.

David also recalls that shortly after the soybean plant

began operating, his 35 acres of pecan trees stopped bearing fruit; he never understood why, until the 1980s, when ADM shut down the plant. The next year they started producing pecans again. He now believes that the dust from the soybean plant got on the little sticky part of the flower and prevented the pecan pollen from adhering to it, and thus prevented the pecans from pollinating. Address: South Carolina.

2021. Lamp, Greg. comp. 2005. News: ADM builds new biodiesel plant. *Corn and Soybean Digest*. Nov. p. 10.

• **Summary:** ADM, the leading U.S. ethanol maker, plans to construct its first wholly owned biodiesel manufacturing plant in America. The facility, with a capacity of 50 million gallons, will be built in Velva, North Dakota, near the existing ADM crushing facility there, and will use canola oil (not soy oil) as its primary feedstock. Address: Editor.

2022. Messina, Mark J. 2005. Update on the 6th international symposium and on research on the health benefits and risks of soy (Interview). *SoyaScan Notes*. Dec. 21. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Mark is age 53. The 6th International Scientific Symposium on the Role of Soy in Preventing and Treating Chronic Disease was held in Chicago, Illinois, from 29 Oct. to 2 Nov. 2005. About 225 people attended, of whom 115-20 paid in full and another 15-20 paid in part. They have decided not to publish the proceedings in a professional journal. Mark feels that this was one of the best symposia ever. It was divided into 3 parts. (1) A Soy and Development Workshop, before the symposium, and open to the public. It was mostly about soy formula fed to infants, and its safety. Kaayla Daniel was at all the meetings and tried to get in for free on a media pass; Mark was upset. Daniel Sheehan was also there. The proceedings will be published on the Web. Solait sells almost all of the isolate used in soy infant formulas. (2) The basic symposium. (3) A post symposium meeting on soy and breast cancer. John Millner at the National Cancer Institute is thinking of doing a study on this subject to see if soy is beneficial, neutral, or harmful. It could cost about \$4.9 million.

The most important paper, a breakthrough in Mark’s opinion, is about the effects of supplements on hot flashes. ADM will use this to promote their isoflavones for hot flashes.

Steve Demos was given an award at the conference; he gave a heartfelt and very elegant reply.

The 7th international soy symposium will be held in Bangkok, Thailand from 7-9 March 2007—in conjunction with the 5th Southeast Asia Soyfood Seminar & Trade Show. Part of the reason for the choice of Thailand is a remarkable lady named Teeranard Chokwatana, who was present at the 6th symposium. She and her husband run a superb soyfoods company there named Nutrition House Company, Ltd. ([www.nutritionhouse.co.th](http://www.nutritionhouse.co.th)). Starting operations in 1991 with

a vegetarian restaurant, they have 5 vegetarian restaurants and a line of vegetarian meat-alternative products. They have a royal pedigree and are very wealthy—and very nice and widely admired.

Dr. James Anderson has done another meta-analysis showing that baking soy protein isolates significantly reduces their cholesterol-lowering ability. Address: PhD, 439 Calhoun St., Port Townsend, Washington 98368. Phone: 360-379-9544.

2023. Bennett, Beverly Lynn; Sammartano, Ray. 2005. *The complete idiot's guide to vegan living*. New York, NY: Alpha. 360 p.

• **Summary:** “It’s not a diet—it’s a lifestyle.” The vegan lifestyle means compassion for all living things. It means eliminating animal foods and animal products from one’s diet. True vegans avoid the use of honey, and don’t wear animal skin (leather, suede) or fur. Many avoid silk, made by suffocating silkworms inside their cocoons.

Contents: Part 1: Compassion for all. 1. Why be vegan? 2. Vegan 101 (incl. famous vegetarians and vegans, the Vegetarian Society of the UK, the Vegan Society emerges, Donald Watson, coming to America—Dr. Catherine Nimmo and Rubin Abramowitz, Jay Dinshah, ahimsa). 3. Key to good health. 4. Starting your vegan transition. Part 2: Clearing up misconceptions. 5. But you need meat for protein. 6. But you need dairy for calcium. 7. But carbohydrates make you fat. 8. Vegans are all weak and sickly.

Part 3: A vegan survival guide. 9. Nourishing yourself. 10. Seeking supplementation. 11. Raw foodists: Raw and uncut. 12. Oh baby! Bringing up baby. Part 4: Veggin’ it; Tips for maintaining a vegan lifestyle. 13. Handling family and friends. 14. Dining, vegan style. 15. Supporting your ideals. 16. Buying your vegan eats.

Part 5: Substitution is the mother of invention. 17. Using protein alternatives (incl. Demystifying soy products: soy sauce, the incredible tofu, tempting with tempeh, playing tricks with TVP). 18. Doing without dairy and cheese. 19. Vegan baking substitutions. Part 6: Vegan food for the soul. 20. Breakfast ideas. 21. Lunch and lighter fare. 22. Main and side dishes. 23. Baked goods and desserts.

Part 7: Vegan lifestyle choices. 24. Body care and personal items. 25. Dressing to impress. 26. Other things to consider. Appendixes: Glossary, resources.

The index contains 17 entries for tofu, 16 for soybeans, 7 for tempeh, 3 for seitan, 2 for TVP, and 1 each for edamame, nondairy milk substitutes, shoyu, soy milk, tahini, tamari, and tofurky.

“This book offers a vegan food pyramid, fifty vegan recipes, tips on finding animal-free products and hints for reading ingredient lists and other labels to find ‘hidden’ animal ingredients or byproducts” (publisher’s statement). Address: 1. Vegan chef and author, Eugene, Oregon; 2.

Musician, web developer, and Beverly’s life partner.

2024. Fischer, Juergen. 2005. *Biodiesel quality management: The AGQM story*. In: G. Knothe, J. Van Gerpen and J. Krahl, eds. 2005. *The Biodiesel Handbook*. Champaign, Illinois: AOCS Press. ix + 302 p. See p. 204-10.

• **Summary:** Contents: Introduction: Standardization, quality management and quality control, quality surveys, fuel additives, research and development. Summary.

AGQM is an abbreviation for ArbeitsGemeinschaft Qualitaets Management Biodiesel. e.V., the Association for the Quality Management of Biodiesel, which was founded in Dec. 1999. What is the need for such an organization? The German biodiesel market differs from that of other countries, where biodiesel is generally sold as a blend with petrodiesel in varying concentrations. “Germany is the only country in which biodiesel is sold as a pure fuel, available a public filling stations and with a growing market share.” The largest plants now have a capacity of 150,000 metric tons per year, yet there are also many small plants, but the quality must meet exacting standards so that it does not damage diesel engines. Fig. 1 (p. 204) shows the German biodiesel market, where both sales and production began to take off in about 1999-2000. Address: ADM / Oelmuehle Hamburg, Hamburg, Germany.

2025. Moskowitz, Isa Chandra. 2005. *Vegan with a vengeance: Over 150 delicious, cheap, animal-free recipes that rock*. New York, NY: Marlowe & Co. 258 p. Illust. (color photos). Index. 23 x 18 cm.

• **Summary:** The praise for this innovative book is almost as interesting to read as the book itself. The book is great fun to read—a really fine writer. The index contains 1 entry for edamame (in samosas with coconut-mint chutney), 1 entry for miso (Stewed tofu and potatoes in miso gravy), 6 entries for seitan (incl. homemade), 8 entries for tempeh, 22 entries for firm tofu and 7 for silken tofu, and 3 entries for textured vegetable protein (TVP).

The section titled “Get rid of eggs—Veganize it!” (p. 195-97) begins: “Replacing eggs is the most challenging aspect of vegan baking. Those suckers bind, they leaven, and they give structure to our baked goods. However, like a bad boyfriend, they can be replaced, and with pleasing results.” The first replacer discussed is flaxseeds. Second is silken tofu. “How to use it. ¼ cup blended silken tofu = 1 egg. Whiz in a blender until completely smooth and creamy, leaving no graininess or chunks. You will want to add other wet ingredients, to this mixture to get it to blend properly. I recommend... extra-firm silken tofu, such as Mori-Nu.” Another egg replacer is soy yogurt. ¼ cup soy yogurt = 1 egg. “Soy yogurt works a lot like whizzed tofu as an egg replacer. It makes things moist and yummy.”

She uses the creative word “sammiches” instead of “sandwiches.” Address: Co-host of The Post Punk Kitchen,

New York City.

2026. ADM. 2006. ADM to process Monsanto's Vistive™ low linolenic soybeans at Indiana facility: agreement expands growing area for soybeans, which provide a trans fat solution to the food industry (News release). St. Louis, Missouri. 2 p. Jan. 12.

• **Summary:** St. Louis, January 12, 2006—Monsanto and Archer Daniels Midland Company (ADM) announced today that ADM will process Monsanto's VISTIVE™ low-linolenic soybeans in 2006 at its facility in Frankfort, Indiana, and will market the low-linolenic soybean oil for use by the food industry. VISTIVE low-linolenic soybeans will reduce the need for partial hydrogenation of soybean oil, helping food companies reduce the presence of trans fatty acids (trans fats) in their products.

“For the 2006 growing season, ADM will be contracting with growers in Indiana for up to 40,000 acres of VISTIVE soybean production. ADM will pay a premium to producers who grow VISTIVE soybeans under contract. Then it will crush and sell the processed soybean oil to food companies.

“VISTIVE soybeans, developed through conventional breeding, contain less than three percent linolenic acid as compared to the typical eight percent level found in traditional soybeans. The result is a more stable soybean oil, with less need for hydrogenation. Because soybeans with a lower linolenic acid level reduce the need for partial hydrogenation, their application in processed soybean oils will reduce the presence of trans fats in processed soybean oil.

“The development of VISTIVE is significant because, as of January 1, 2006, all food products and dietary supplements bearing a nutritional facts panel that are regulated by the U.S. Food and Drug Administration and sold in the United States are required to list trans fat content. Kellogg Company, for instance, recently announced that it will use oil from VISTIVE low-linolenic soybeans as part of a major initiative to reduce or eliminate trans fats in a number of its products.

“Low-linolenic soybean oil developed from VISTIVE soybeans will be a valuable addition to ADM's NovaLipid™ portfolio of zero/low trans fat products,” stated Tedd Kruse, ADM Vice President-North American Food Oils. ‘As the essential link between farmers and food manufacturers, ADM is pleased to work with American farmers to create additional value for their products while at the same time providing food manufacturers with healthier ingredients.’

“NovaLipid products are ADM's line of zero/low trans fat shortenings, margarines and oils. The NovaLipid portfolio includes naturally stable oils, tropical fats and oils, blended oils, and enzyme interesterified shortenings and margarines to provide alternatives in various food applications, including baking, confectionery, snack, frying and cereal products. The line was developed in 2003 in response to customer and

consumer demand for healthier fats and oils.

“We contracted all available VISTIVE soybeans in 2005, so we know that this product is in demand. We are very pleased to partner with an industry leader like ADM to ensure a successful expansion of VISTIVE soybeans in 2006,” said Ernesto Fajardo, Vice President of U.S. Crop Production for Monsanto. ‘VISTIVE not only supports growing consumer demand for healthier foods, but also represents an important investment in the future success of the U.S. soybean industry. In addition, this agreement expands the growing area for VISTIVE, giving more farmers the opportunity to grow this value-added soybean.’

“Monsanto expects that VISTIVE soybeans will be grown on nearly 500,000 acres in 2006. VISTIVE soybeans have the Roundup Ready® trait and maintain performance parity with other commercial soybean varieties. For 2006, VISTIVE will be available in Monsanto's Asgrow® brand, as well as Stiner, Prairie™ Brand Seed, Latham® Seed, Kruger™ Seed Company, CROPLAN Genetics®, FS HiSOY®, LG® Seeds, Producers Hybrids®, Midwest Seed Genetics®, Crow's® and NC+® seed brands.

“Specific information regarding grower opportunities and contract details will be available from ADM in the near future.

“Archer Daniels Midland Company (ADM) is a world leader in agricultural processing. ADM is one of the world's largest processors of soybeans, corn, wheat and cocoa. ADM is also a leader in the production of soy meal and oil, ethanol, corn sweeteners and flour. In addition, ADM produces value-added food and feed ingredients. Headquartered in Decatur, Illinois, ADM has over 25,000 employees, more than 250 processing plants and net sales for the fiscal year ended June 30, 2005 of \$35.9 billion. Additional information can be found on ADM's Web site at <http://www.admworld.com>.

“Monsanto Company is a leading global provider of technology-based solutions and agricultural products that improve farm productivity and food quality. For more information on Monsanto, see [www.monsanto.com](http://www.monsanto.com).”  
Address: St. Louis, Missouri.

2027. Global Industry Analysts, Inc. (GIA). 2006. Soy foods—Global strategic business report. 5645 Silver Creek Valley Rd., San Jose, California. 302 p. Jan. \*

• **Summary:** Publisher description: This report analyzes the worldwide markets for Soy Foods in millions of US\$. The specific product segments analyzed are Soy Ingredients, and Soy Oil. The report provides separate comprehensive analytics for the US, Canada, Japan, Europe, Asia-Pacific (excluding Japan), Latin America, and Rest of World. Annual forecasts are provided for each region for the period of 2000 through 2010. The report profiles 151 companies including many key and niche players worldwide such as Archer Daniels Midland Company, Dean Foods Company, White Wave, Eden Foods, Inc., Galaxy Nutritional Foods,

Inc., Gardenburger, General Mills, Glenn Foods, Greet Spot (Thailand), Griffith Laboratories (UK), H.J. Heinz Co. Hain Celestial Group, Hartz International (Australia), Hazlewood Grocery (UK), Heartland Fields (USA), Hermans Foods (Australia), High Mark Foods (New Zealand), Imagine Foods, Inc., Kerry Group PLC (Ireland), Kerry Ingredients (Australia), Kikkoman (Japan, Australia, USA, Singapore), Kimlan Foods Co. (Taiwan), Kuhne Nederland BV (Netherlands), SoyaWorld, Inc., Turtle Island Foods, Inc., and Vitasoy USA, Inc.

Price: Electronic or hard copy 3,496 euros. Please note: Reports are sold as single-site single-user licenses. The delivery time for hard copies is between 3-5 business days, as each hard copy is custom printed for the organization ordering it. Electronic versions require 24-48 hours as each copy is customized to the client with digital controls and custom watermarks. Address: San Jose, California. Phone: 408-528-9966.

**2028. Product Name:** Re: Ethnic Koreans growing soybeans in Tajikistan or Turkmenistan, and her work introducing soyfoods to these countries.

**Manufacturer's Address:** Letter (e-mail) to William Shurtleff at Soyfoods Center, Feb. 18.

**Date of Introduction:** 2006 February.

**New Product–Documentation:** In Tajikistan she met a couple who lived near Dushanbe. The husband, Victor, was planning to grow soybeans. She gave him some seed grade soybeans to grow, although she had the impression that he hadn't grown soybeans before. She sensed that he wanted to grow them because of increased interest in soybeans—for reasons she does not understand. She gave him the seeds that Walter Barrett had given her, because the soybeans she had found in Tajikistan were not of good quality.

Victor led her to a Korean tofu maker, a woman who didn't speak Korean. She supplied tofu to a Chinese restaurant in Dushanbe. She told Helen that she bought her soybeans from Uzbekistan, and said they were expensive. Helen did not ask the woman when she had started to make tofu commercially or what the name of her small business was. Helen does not recall exactly where it was located.

Vera, Victor's wife, sold Korean salads at a green bazaar in Dushanbe. She and other Korean salad vendors at the green markets sold a type of dish made from Chinese TVP, which is white in color and imported from China.

At an import supermarket called Holland Market in Dushanbe, Helen found several Russian-made TVP products and soymilk powder. She also saw soymilk sold in Tetra Pak cartons.

In Ashgabat, Turkmenistan, two Korean men came to talk with Helen at the Winrock office about a soymilk machine.

In the Dashoguz region of Turkmenistan, Helen met two different groups of Koreans (a least 30 people total) who

wanted to see her presentation and demonstration of soymilk and tofu production using a SoyJoy machine, along with a display of soy products such as tofu (in a Tetra Pak carton), TVP, soynuts, soy flour, soy protein isolates, energy bars, soy sauce, etc. In some presentations at farms or for women's groups (including the Korean groups), she also prepared soyfoods or Turkmen foods that included whole soybeans.

In Tajikistan, she gave 3 presentations / demonstrations: One at "Salsa Restaurant" in downtown Dushanbe, and two at a cafeteria and at the meat processing lab of the Khujand branch of the Technical College of Tajikistan. She usually ended her presentations with a meal with the participants. Her menu included Pulov [pilaf] (rice with some meat, soybeans, carrots, and onions), soup, salad, and a crepe (using a mixture of wheat flour, soy flour, and some type of local jam).

At the Agricultural University of Tajikistan in Dushanbe, and at the Khujand branch of the Technical College of Tajikistan, she gave technical presentations using an overhead projector with PowerPoint slides showing the nutritional composition of soybeans, and techniques for the preparation of traditional soyfoods and commercial products such as soy oil, soy protein, lecithin, etc.

In Turkmenistan: She gave food preparation presentations: (1) At a farm in the Mary district. (2) At apartment style homes in the cities (Mary district, and Dashoguz). (3) At the Winrock office in Dashoguz for different groups of women. (4) For 2 groups of Peace Corps volunteers in Dashoguz. "Peace Corps was interested in soyfoods because it was suspected that the protein intake of PCVs in that country was not sufficient."

While in Tajikistan and Turkmenistan, Helen did not see any soybeans being cultivated, nor any bundles of soybean plants harvested for green vegetable soybeans.

After her visit: (1) Her soy recipes were translated into the Turkmen language by Winrock staff, but (as far as she knows) they were not printed or reproduced. (2) A 30-page Russian-language brochure on soybeans was created (using desktop publishing) by a group of Peace Corps volunteers in the Dashoguz area. It included planting information and recipes, with colorful pictures and diagrams; about 200 to 300 copies were printed. The produced was funded by the Peace Corps and Helen, however Helen does not have a copy with her in Mexico. (3) Helen prepared a trip report, which is now the property of Winrock International. She did not write much about Koreans in that report.

She includes a Russian-language article on soya from the newspaper *Asia-Plus* (23 Sept. 2004, p. 4).

Note: This document mentions the earliest known commercial soy products in both Tajikistan and Turkmenistan.

2029. Truth in Labeling Campaign. 2006. Who runs the MSG industry? These are the people who run the fiction that

MSG is “safe” (Website printout–part). [www.truthinlabeling.org/WhoRuns.html](http://www.truthinlabeling.org/WhoRuns.html) 2 p. Retrieved March 8.

• **Summary:** “In the United States, the glutamate industry has two arms. Both work to keep MSG hidden in food. One is the International Hydrolyzed Protein Council [a trade association], which counts as members those who profit from the sale of hydrolyzed protein products (which all contain MSG). Members include, or at one time included, Ajinomoto USA, Inc.; Arancia Ingredientes Especiales, S.A. De C.V.; Basic Food Flavors, Inc., Campbell Soup Company; Champlain Industries, Inc.; CPC International, Inc.; Deltown Specialties; Fidco, Inc.; Etablissements Bio-Springer; Gist-Brocades Food Ingredients, Inc.; Griffith Laboratories; Haco Ltd., Integrated Ingredients; Franceresco S.A.; Quest International; A.E. Staley Manufacturing Co.; Sugemasa; Takeda U.S.A.; Red Star Specialty Products; Provesta Corporation.

“The second arm consists of the International Glutamate Technical Committee (IGTC) and its American subsidiary, The Glutamate Association, whose members include (or used to include), Ajinomoto, Archer Daniels Midland, Campbell, Corn Products Corporation, McCormick & Company, Pet Foods, Pfizer Laboratories, and Takeda. Both organizations are (or were) accommodated under the umbrella of The Robert H. Kellen Company of Atlanta, Georgia and Washington, DC, a trade organization and association management firm. In recent years the International Glutamate Information Service was added to their ranks.

“In the United States, hiding MSG appears to be spearheaded by Ajinomoto, Co., Inc.” The Glutamate Association was established in 1977.

“If MSG isn’t harmful, why is it hidden?” Address: Chicago, Illinois.

2030. Bell, David E.; Shelman, Mary. 2006. Bunge: Poised for growth. *Harvard Business School Case Study* N9-506-036. 36 p. Revised March 9, 2006. [9 endnotes]

• **Summary:** Original copyright: 2005. [www.hbsp.harvard.edu](http://www.hbsp.harvard.edu). Contents: Introduction. The oilseed industry: Farm-to-consumer chain, soybean pricing, genetically modified soybeans, other feeds, other oils. Bunge Limited: Company background, building an oilseed giant. Bunge 2005: Agribusiness, fertilizer, food products. Bunge-DuPont alliance (2003): Technology access, production agriculture, The Solae Company (launched in April 2003, it is a soy ingredients company). The Bunge difference: Focused, efficient and global, integration unlocks value, commitment to partnering. The “Bunge Style.” Managing change: Changes in demand and world trade, greater market volatility, greater traceability and integration (Nutrim Low Lin). Filling in the global mosaic.

Exhibits.

(1) World supply of major oilseeds, 2000/2001 to 2005/2006 (million metric tons). Soybean (by far the

largest), rapeseed, cottonseed, peanut, sun seed, palm kernel, copra.

(2a) Soybeans: World supply and distribution (thousand metric tons), 2000/01 to 2005/06.

(2b) Soybeans: Harvested area and yield by country, 1999-2005.

(3) Oilseed supply chain.

(4) Soybean pricing by major producing country, 1985-2005 (in US\$ per metric ton).

(5a) Adoption of genetically modified soybeans in USA, Brazil, Argentina, 1997-2004. The USA has adopted the most and the fastest.

(5b) Graph: Global area of biotech crops, 1996 to 2004, by crop. Soybean, maize, cotton, canola.

(6) Pie chart (%): Share of global soymeal consumption by region, 1998 and 2005: The big change is in China, which has grown from 9% to 18%.

(7) World vegetable oil supply and distribution, 2000-2005 (million metric tons).

(8) Bunge stock price, Aug. 2001 to Nov. 2005. It has risen steadily and much faster than the S&P 500.

(9) Map of Bunge facilities in Eastern Europe.

(10) Map of trade flows and Bunge’s global footprint. Soy products, corn, wheat. Shows each Bunge facility.

(11) Bunge Ltd. financial summary (in US\$ million except share data).

(12a) Bunge operating segment information, 2002-2004—Agribusiness, fertilizer, edible oil products, milling products, other, unallocated.

(12b) Bunge net sales by geographical area, in US\$ millions, 2002-2004. Net assets by geographical area.

(13) Graph: Growth of Bunge’s Brazilian fertilizer business (8.6% a year). Bunge-DuPont biotech alliance. Treats DuPont/Pioneer as one company. “An effective development and delivery system for soy products.”

(15) Comparison of Bunge, Cargill and ADM results, 2000-2005, Cargill has the largest revenue and no. of employees, followed by ADM, with Bunge last. But Bunge has grown the fastest.

(16) The Bunge operating model.

(17a) Projected population growth, 2004-2050 by world, high income, low income, Africa, Asia. Source: U.S. Bureau of Census.

(17b) Population growth and income growth, 1986-2010. “World food needs continue to grow.” World population is growing at 1.35% per year average. World per capita income is growing at 1.4% per year adjusted for inflation: Source: World Bank.

(18) Graph: Areas with growing meat consumption. “Fastest growth in meat consumption occurs when income is less than \$5,000 per year.” Annual income per capita in 1995 US\$.

(19) Projection of grain (corn and wheat) and soy consumption in principle markets, 2004/05 to 2010.

(20) Projection of grain and soy production in principle origin markets, 2004/05 to 2010.

(21) Production potential of agriculture in Brazil. Address: 1. Prof.; 2. Senior Researcher. Both: Agribusiness Program, Global Research Group [Cambridge, Massachusetts?].

2031. Illinois Center for Soy Foods. 2006. U of I center sponsors events to celebrate Soy Foods Month (News release). Urbana, Illinois. 1 p. March 22.

• **Summary:** “The Illinois Center for Soy Foods at the University of Illinois has scheduled several events to help celebrate National Soy Foods Month this April. A free cooking demonstration and taste test to help consumers become familiar with tofu, soy flour, soy milk, and textured vegetable protein (TVP) will be held on Saturday, April 22, from 9 to 11 a.m. in the test kitchen at the National Soybean Research Center [NSRC] in Urbana.” Participants “will return home with recipes that they can try in their own kitchens.” Space is limited and pre-registration is required.

“The center will also provide free soy-enhanced cookies on campus during the lunch hour each Tuesday in April. The cookies will be available at” 4 convenient locations on campus. The 5 soyfoods cookbooks published by the center will also be on sale for 50% off.

“In addition, the Center will host a soy-tasting event with the theme “Around the World with Soy” on Wednesday, April 19. The tasting will feature international cuisine with a soy twist.” Address: Urbana, Illinois.

2032. Archer Daniels Midland Co. 2006. Renewable energy. Television broadcast. Newshour with Jim Lehrer. PBS. March 6.

• **Summary:** The following new ADM ad began to be aired on the Newshour on 6 March 2006: “The world’s demand for energy will never stop. Which is why a farmer is growing corn and a farmer is growing soy and why ADM is turning these crops into biofuels. The world’s demand for energy will never stop. Which is why ADM will never stop. We’re only getting started. ADM—Resourceful by nature.”

2033. INTSOY. 2006. Processing and marketing soybeans: Meat, dairy and baking applications, May 1-5, 2006 (Leaflet). Urbana, Illinois. 4 panels each side. Each panel: 22 x 9 cm.

• **Summary:** This glossy leaflet (green and black on white) announces a 5-day course (\$1,800) plus the course and an extended workshop schedule (\$2,400). The program now has 15 corporate sponsors: The Solae Co., Staeta, Insta-Pro, Proviant, BAR, N.A., Inc., SOI, ADM, Assoy, Wenger, Microsoy Corporation, US Soy, Silk, Kikkoman, Cargill, and Buehler. Course schedule: Welcome, international soymilk processing, success stories, soymilk, and soy products, marketing, soy flour, soy and meat, hot topics (soy infant

formula, soy and reduction of chronic disease, soy allergies, quality and stability of soybean oil, specialty soybean varieties, biotechnology of soybeans). A list of featured speakers are given; many are from the corporate sponsors!

Talk with INTSOY employee. 2005. The “short course” has been discontinued; it was established through a grant, has come to an end. The course is now under the aegis of NSRL. In the year 2000 the 4-day course attracted 28-30 people. Address: National Soybean Research Lab. (NSRL), 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 244-1706.

2034. Messina, Mark J. 2006. Origin of the Soy Nutrition Institute (Interview). *SoyaScan Notes*. May 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The following companies have paid \$10,000 to join the Institute: Revival, White Wave, ADM, Cargill, Solae, Monsanto, SANA, and the Soyfoods Council (Linda Funk, Iowa). The first meeting will be held on May 15 and 16 in (Monday and Tuesday) at the Sheridan-Clayton Hotel in St. Louis, Missouri. It could be the beginning of something important. Mark will be sending out official notes.

Mark has started to play the mandolin for fun. Also, he thinks that some of the recent not-so-exciting research findings on soy and human nutrition look bad because of the great expectations that so many people now have about soy. If we put things back into a more normal perspective, it still looks good, its just not going to make the food and ingredient manufacturing companies as rich as they hoped—except probably White Wave. Address: PhD, 439 Calhoun St., Port Townsend, Washington 98368. Phone: 360-379-9544.

2035. Soyatech. 2006. Soya Summit 2006: Food & Energy for the 21st Century (Leaflet). Bar Harbor, Maine. 1 p. Front and back. 28 cm.

• **Summary:** This conference will be held on 18-20 Sept. 2006 in St. Louis, Missouri, at the Chase Park Plaza Hotel. Sponsored by The Solae Company. There will be two parallel tracks. The soyfoods track speakers will include representatives from: The Solae Co., Monsanto, ADM, USDA, Kerry Foods, ProSoya, Tivall Corp., Natural Products Consulting, Soyatech, SunRich, and WISHH.

The energy track speakers will include representatives from: National Biodiesel Board, Toyota, DuPont, The ProExporter Network, Delta-T, New Energy Finance, Sigma Capital, Energy Management Institute, Rocky Mountain Biodiesel Consulting.

A third day of workshops on Sept. 20 will include: Taste of Soy: Beyond ingredients—Bring on the food! Address: Bar Harbor, Maine. Phone: 1-800-882-8684.

2036. Jackson, Harry. 2006. Re: Nomination of Irving J. Rosen to Quincy Business Hall of Fame. Letter sponsored by Quincy Chamber of Commerce, July 13. 2 p. Typed.

• **Summary:** Contents: Who. Why, How. Where / when.

What. Conclusion. Irving Rosen, lived 8 July 1898 to 18 April 1964, was born in Chicago, Illinois, and had a 5th grade education. He founded Quincy Soybean Products Co. in 1939 during the depths of the Great Depression, with the help of in-laws and a loan from Harvey Sprick, President, State Street Bank and Trust Co. of Quincy.

From 1939-1941, the original expeller soybean processing plant at 111 S. Front St. in Quincy processed about 500,000 bushels per year, had annual sales of about \$300,000 with 12 employees.

From 1950-51, the solvent plant at 1900 Front St., just south of Quincy, processed about 5 million bushels per year, and had annual sales of about \$15 million with 30 employees.

From 1956-57, the expanded solvent plant at 1900 Front St. processed about 7 million bushels per year, and had annual sales of about \$21 million with 35 employees.

Note: Harry is Irving's son-in-law. Talk with Harry Jackson of Quincy. 2008. Jan. 9. Irving will be inducted into the Quincy Chamber of Commerce Hall of Fame on 16 Jan. 2008. Sixteen family members will be present. He will send Soyinfo Center a packet of information about the induction. Address: Quincy, Illinois.

2037. Dow Jones Commodities News Select. 2006. Brazil's major soy crushers, exporters to stop buying beans from recently deforested Amazon land (News release). Sao Paulo, Brazil. 2 p. July 25.

• **Summary:** Carlo Lovatelli, president of the Brazilian Vegetable Oils Industry Association (*Abiove*) announced a new industry-wide initiative by major soybean crushing and exporting firms in Brazil. These include Archer Daniels Midland (ADM), Bunge, and Cargill. The companies have agreed to stop buying soybeans from recently deforested land in nine states in Brazil—to help prevent deforestation of the Amazon basin by soy farmers.

Lovatelli said the initiative is effective immediately, but only for newly planted soybean land. In October, soybeans start to be planted in October. Soybeans already planted on deforested land in the states of Para, northern Mato Grosso, Maranhao, etc. are not covered by the initiative.

Lovatelli added that his members take their social and environmental responsibilities seriously. Any farmers who want to deforest the Amazon Basin to plant soybeans “won't have access to our markets.” It will take about 2 years to see if the program has any impact on deforestation. Note: The Amazon basin is huge, occupying about half the land in Brazil.

2038. McKee, David. 2006. South Asia: Oilseeds and feed. Regional review. Region is second largest market for imported vegetable oil behind the E.U.; India could become a driving force in global soybean demand. *World Grain* 24(8):27-30. Aug.

• **Summary:** “The future of India's oilseed crushing industry is closely tied to development of the feed sector and demand for protein meals.”

In about 1990 China ceased to be self-sufficient in oilseeds. Shortly thereafter, China created a new and very successful model; it eliminated the tariffs on both imported oilseeds and vegetable oil, then encouraged the oilseed processing sector to build new plants in port cities. This caused cooking oil prices to fall, which stimulated demand. It also led to the production of large amounts of high-protein oilseed meals, especially soybean meal.

A graph shows production and consumption of wheat, rice, and oilseeds in India, Pakistan, and Bangladesh in 2005/06. India, mostly because of its large population, is by far the leader in production and consumption of oilseeds in South Asia.

The major global players in the oilseed industry are Bunge, Cargill, and ADM (through its Singapore-based subsidiary, Wilmar Holdings Pte.). They have all bought into or constructed vegetable oil refineries in South Asia, starting in 2003, when Bunge acquired the vegetable oil business of Hindustan Lever. In 2004 Cargill entered a joint venture with a local company and gained control of four refineries. Wilmar, already a leader in soybean crushing in China and palm oil production in Indonesia, has partnered with the Adani Group, one of India's largest companies, to build a refinery in the state of Gujarat (in west India) at Adani's wholly owned port facility at Mundra (near Mumbai, formerly Bombay).

None of these multinationals have invested in oilseed crushing in the region—for three main regions. (1) They refine crude palm oil imported from their own operations in Southeast Asia, and soybean oil from their crushing plants in South America. (2) Indian government policy protects domestic oilseed growers and processors through high import tariffs on oilseeds (30% on soybeans) and vegetable oils (45% on soybean oil and 80% on refined palm oil). (3) They have restrictions on imports of genetically engineered soybeans.

By far the largest oilseed crusher in India or South Asia is Ruchi Soya Industries, Ltd., headquartered in the city of Indore in Madhya Pradesh state. Ruchi is said to have 25% of India's total soybean crush, and its brands are well known nationwide.

Ruchi Soya originated in the 1960s, when its charismatic founder, Mahadev Shahra, visited farmers throughout Madhya Pradesh hoping to convince them to start planting soybeans. This state is now the leading soybean producer in India, accounting for about 70% of the nation's crop. Ruchi Soya now owns and operates nine oilseed crushing plants in India, both at ports and inland. Its crushing plant at Indore is the largest in India, with a capacity of 2,500 tonnes/day. Ruchi's total soybean crushing capacity is 7,500 tonnes/day. Address: Grain industry consultant.

2039. Soyatech, Inc. 2006. *Soya & Oilseed Bluebook 2007*: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 448 p. Sept. Comprehensive index. Brand name index. Advertiser index. Statistical conversions. 28 cm.

• **Summary:** This is the first year in recent decades that the Bluebook (a \$95 value) has been sent free of charge to qualified industry members. On the stylish cover is color photo of a lovely Asian woman holding the nozzle while fueling a vehicle with ethanol fuel (as the lid to the gas tank specifies) within an oval outline. Behind her is a large glass of soymilk base against a background of yellow soybeans.

On the inside front cover is a color ad from Natural Products Inc. (Grinnell, Iowa) titled “Always unique, always innovative, always natural.” On the first page is a full page color ad from Bunge North America (St. Louis, Missouri) titled “The shortest distance from harvest to market.” On the back cover is a full page color ADM ad titled “Trailblazing” showing a young man riding his mountain bike through deep muddy water. The tag line is “Resourceful by nature” and the NutriSoy logo is shown. The oilseeds covered in this book are (alphabetically): Canola / rapeseed, coconut, corn, cottonseed, palm, peanut, soya, and sunflowerseed. Note: This list is unchanged from the previous year.

There is no longer a self-adhesive label containing “Your access code” on the title page.

The Introduction states that 3,400 companies offering 450 specific products or services are listed in this book. In the Foreword, Peter Golbitz writes: “What a difference one year can make. During the past 12 months, the commodities market, including soybeans, oilseeds and corn, has been pulled into the limelight and asked to play a new leading role in the world’s energy industry... Enter biofuels. Renewable energy created from vegetable oils (for biodiesel) and for carbohydrate-based crops such as corn or sugar cane (for ethanol)...” Are these “perhaps, a gateway to a broader realization of the need to create sustainable solutions for humankind?”

Page 196. In column 1 is an entry for “The Scoular Company, Commodity Marketing.” It states: “EP [Edible Products]–Non-GMO soy products; organic soy products; full fat soy flakes; organic corn products. SS [Seed Supplier / Broker / Breeder]–Broker services; soybean seed–for planting; food grade soybeans; identity preserved soybeans; organic soybeans; non-GMO soybeans; whole dry soybeans; food grade corn; organic corn; identity preserved corn; non-GMO corn; whole dry corn; organic feed and meal soybeans; organic feed corn.”

Note the use of the term “food grade soybeans.”

Note 1. CanAmera is not listed in the comprehensive index of this book. Address: 1369 State Hwy 102, P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

2040. Thompson, James. 2006. McVictory. *Corn and Soybean Digest*. Sept. p. 38.

• **Summary:** Activists dressed like huge chickens demonstrated in front of McDonald’s restaurants in Europe. Their website and signs said that every bite out of a Chicken McNugget was a bite out of the rainforest. Their slogan: “The Amazon: We’re trashing it.”

The activists said the problem was caused by soybeans. “People cleared the rainforest to grow soybeans to sell to crushers. The crushers sold soybean meal to feed manufacturers, who sold the feed, in turn, to poultry producers. And companies like KFC and McDonald’s served up rainforest destruction to unwitting European customers.”

First McDonald’s Europe told its suppliers not to feed its chickens soybeans grown in the Amazon area. Then ADM, Cargill, Bunge, etc. negotiated a deal with Greenpeace and soybean crushers not to crush soybeans grown in the Amazon ecosystem for two years. The deal only bans soybeans from fields first planted after the agreement was signed. But how will it be policed.

A large color photos shows the activists dressed like huge chickens demonstrating in front of a McDonald’s restaurant in Europe. One is holding a sign. Two are reading a newspaper (Poultry Gazette) with the bold headline: “Fowl play at McDonalds! Hundreds of stores invaded by eco-chickens.”

Note: Greenpeace has become very skilled at getting media coverage for its low-budget campaigns.

2041. Archer Daniels Midland Co. 2006. Annual report: We see opportunity. P.O. Box 1470, Decatur, IL 62525. 64 p. Oct. 28 cm.

• **Summary:** Net sales and other operating income for 2006 (year ended June 30) were \$36,596.1 million, up 1.8% from 2005. Net earnings for 2006 were \$1,312,070 million, up 25% from 2005, and the company’s second consecutive year of record earnings.

On the inside front cover is a tribute to G. Allen Andreas, who joined ADM in 1973 and retired as CEO earlier this year. He presided over the globalization of ADM. The company is much stronger now than when he became CEO. he is now chairman of the board. On 1 May 2006 Patricia A. Woertz, age 53, became CEO and president, and serves on the Executive Committee. She says:

“Two major world developments are before us: the growing demand for food to feed a rising world population and the quest for alternative fuel sources to supply expanding energy needs. ADM is uniquely positioned in the intersection of these two developments, with expertise and capacity to address both.”

Operating profit in oilseeds processing (p. 27, in millions) was \$598.41, up 73.6% from \$344.65 in 2005.

Accompanying the annual report is a “Notice of Annual Meeting” (25 p.). G.A. Andreas, Chairman of the Board and

CEO, had a 2006 salary of \$3,051,667 plus \$396,715 other annual compensation. Patricia Woertz received a bonus of \$750,000 with other compensation of \$213,814. Address: Decatur, Illinois.

2042. Williamson-Hughes, Patricia S.; Flickinger, B.D.; Messina, M.J.; Empie, M.W. 2006. Isoflavone supplements containing predominantly genistein reduce hot flash symptoms: a critical review of published studies. *Menopause* 13(5):831-39. Sept/Oct. [55 ref]

• **Summary:** “Conclusion: Reports concluding that isoflavone supplements do not significantly reduce hot flash symptoms may be incorrect. The lack of discrimination between individual isoflavones contained in heterogeneous isoflavone mixtures from differing sources can be misleading when designing studies, interpreting results, and conducting reviews. In light of these observations, evaluation of isoflavone effects should focus greater attention to the specific composition within supplements in future studies.”

Note 1. Concerning menopause: “... about 10 to 15% of women who have hot flashes have them very frequently and severely. The period of time over which most women experience hot flashes is 6 months to 2 years, but substantial numbers of women report having hot flashes up to 20 years after menopause” (p. 832).

Note 2. Three of the four authors are employees of the Archer Daniels Midland Co. (ADM) which makes the isoflavone supplement. Address: 1-2, 4. James R. Randall Research Center, 1001 North Brush College Road, Decatur, Illinois.

2043. Ruchi Soya Industries Ltd. 2006. Ruchi Soya Industries: The No. 1 processed food company (Website printout-part). www.ruchisoua.com Retrieved Dec. 24.

• **Summary:** Contents: Home. Profile. News. Products. Investors. Exports. CSR. Careers. Contact.

Ticker tape across top of home page: “Ruchi Soya has been ranked No. 124 out of the top 500 companies in India by Financial Express for the year 2005.” A photo on the banner header shows an Indian woman looking at her daughter. Home: “The 20 year old Ruchi Soya Industries Limited is the flagship company of the Ruchi Group of Industries with an annual turnover of Rs. 4,941.57 Crores (2005-06). It is ranked as one of the largest FMCG companies in India with sustained growth in profits and turnover...”

Besides being a leading manufacturer of high quality edible oils, vanaspati, bakery fats and soya foods, Ruchi Soya is also the highest exporter of soya meal and lecithin from India. Nutrela (soya chunks, granules, soya flour) is the largest selling soya foods brand in the country today.

“Ruchi Soya is the undisputed leader in the branded edible oil category with brands like Nutrela Soyumm (Soyabean Oil), Ruchi Gold (Palmoline Oil) [Palm Olein],...”

Profile: The soya revolution. “In the early 1960s, when Mr. Mahadev Shahra went about convincing farmers in M.P. [Madhya Pradesh] about the potential of Soya, he would not have imagined that he will be instrumental in bringing up a small green revolution in the State, by introducing and encouraging Soya bean cultivation on a commercial scale. The family was in the business of commodities trading and subsequently they entered the business of ginning and oil milling. The family’s efforts, along with others, resulted in Soya revolution in M.P. Today M.P. is considered the Soya bowl of the country, and contributes 70% of its production. Despite all odds, Ruchi Soya is now the largest player in the country in edible oils, Soya foods and processed foods categories.”

Ruchi’s exports: Ruchi Soya began operating in 1972-73; it was the first exporter of Soyabean Meal from India. Ruchi is one of the largest crushers of Soya beans in India, and has installed a crushing capacity of 2,500 tonnes/day in Indore, which is the largest crushing capacity at a single location. On a yearly basis, Ruchi crushes 25% of the soy crop in India. This has led to the export of 30% of India’s Soya bean meal on a yearly basis.

Products: (1) Soya foods: Nutrela Proflo soya flour. Nutrela TVP chunks & granules. Edible oils: Refined soyabean oil. Vanaspati: Nutrela vanaspati. Soaps. Address: 301 Mahakosh House, 7/5 South Tukoganj, Nath Mandir Rd., Indore, Madhya Pradesh 452001, India. Phone: (0731) 251 3281-82-83.

2044. *SoyaScan Notes*. 2006. Chronology of major soy-related events and trends during 2006 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Jan. 17–Soyatech (founded and owned by Peter Golbitz) is sold to HighQuest Partners, a management consulting firm headquartered in Boston, Massachusetts.

March 15-17–CERHR (Center for the Evaluation of Risks to Human Reproduction) expert panel meets in Virginia to discuss soy-based infant formula safety. They issue an important report.

May–The Soy Nutrition Institute is founded. Mark Messina is executive director. The founding members (each of whom paid \$10,000 to join) are: ADM, Solae, Cargill, White Wave, Revival, Monsanto, SANA, and the Soyfoods Council (Linda Funk, Iowa).

June 23. Vandemoortele Group, a large oilseed crusher of Ghent and the parent company of Alpro, Belgium, acquires SoFine Foods, a subsidiary of Heuschen & Schrouff and the largest tofu manufacturer in Europe.

July 15–The National Nutritional Foods Association (NNFA) changes its name to the Natural Products Association (NPA); it hopes to attract more members from the natural foods industry which is not represented by a trade association.

Sept.–*The Soya and Oilseed Bluebook*, published by

Soyatech, migrates to the Web. Some bound paper copies will still be published. For the first time in decades, copies are sent free of charge to qualified industry members.

Oct.–House Foods (which owns and operates America’s largest tofu plant in Garden Grove, California), opens a huge, brand new tofu manufacturing facility in Somerset, New Jersey. This enables them to deliver fresh, high quality, low cost tofu to the East Coast, Midwest, and Southeast markets.

Dec. 11–Hain Celestial Group (Melville, New York) acquires the assets of Haldane Foods Ltd. (Newport Pagnell, Bucks., UK) and its meat-free and non-dairy beverage business from Archer Daniels Midland Co. (ADM).

This year biofuels, including soy biodiesel, get new recognition for the important part that they can play in the U.S. energy economy.

2045. Schwarz, Richard W. 2006. John Harvey Kellogg, M.D.: Pioneering health reformer. Hagerstown, Maryland: Review & Herald Publishing. 240 p. Illust. Index. 24 cm. \*  
 • **Summary:** This is a new revised and updated edition of the original classic 1970 edition. Address: Andrews Univ., Berrien Springs, Michigan.

2046. Lester, Bill. 2007. Jim Lindsay and the Supersweet Feeds deal (Interview). *SoyaScan Notes*. Feb. 16. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** Jim Lindsay was an excellent CEO, very innovative and good with people. If there was any mistake he made during his tenure was going outside the core business when (on 1 Dec. 1991) he entered into a partnership agreement with Archer Daniels Midland [ADM] to purchase International Multifoods’ North American Ag Operations which included Supersweet Feeds, etc. Jim later wished he hadn’t done it—even though the board of directors made the final decision. He said, “I guess I was entitled to one mistake.” Within 6 months of that Supersweet purchase, you had a transition that took place in the feed business of almost 180 degrees. Let’s face it, the midwest is primarily hogs. You had the centralization and consolidation of that hog industry that took place almost overnight. There was vertical integration from breeding the hogs to feeding them, although slaughtering was usually done by a different company. Supersweet and a lot of the smaller feed companies serviced all of the mom and pop operations. But in 1990-91 those mom and pop operations, almost overnight, faded from the picture. After the consolidation, hog prices dropped. Today, Smithfield is one of the big consolidated hog companies, but they are also a packer. They came into the Midwest and acquired Farmland Foods. Many of these big consolidated companies are private LLCs that operate regionally; Bill does not know their names. Today, a lot of big, integrated producers supply the breeding stock and/or the pigs. And you have a lot of pigs that are fed and cared for on almost a consignment business, by contract. If the death losses

are below a certain level, and contractor does a good management job, there is a bonus or incentive. AGP at one time owned the sows and everything else, but the return on investment was too small, so they’ve gotten out of all of it.”

Bill has visited with a lot of people he knows who are feeding hogs. He has been told that DDG (dried distiller’s grain, a by-product of the process for making alcohol) only works as a feed in very, very small amounts—because most of the carbohydrate (energy) has been removed and it lacks the right balance of amino acids. Most hog rations, from starter to finishing rations, will range from 18-12% protein. Starter rations contain the most protein (16-18%). DDG is fed to cattle wet; they just slop it in to eliminate the drying cost.

For big hog operations, the smell and pollution are big problems that will be hard to fix. “Basically, it’s the protein in the manure that creates all the problems. It putrefies.” One promising approach is to use the manure from big dairy operations to produce methane gas.

Marty Reagan has also been a good CEO. He has spent capital year after year to upgrade or expand processing plants and refineries. AGP is spending \$100 million to upgrade the plant in St. Joseph, Missouri, and double the capacity. “Marty Reagan is probably doing a better job with the membership today that Jim Lindsay was doing when he retired—communicating and meeting with the members, keeping them informed. About 15-20 times a year Marty and man who took Bill Lester’s place will travel to have breakfast, lunch, and dinner meetings with six managers, face to face.” Still, membership has continued to drop, mostly through mergers (of two or more cooperatives) and consolidation. When Bill left in 1993, there were about 310 member shareholder cooperatives in AGP; today its dropped to 210 member shareholders. The number of farmers in the member cooperatives is also dropping. The farms are getting bigger. If anyone is losing ground, its the local cooperatives.

Plants at Volga (South Dakota) and Brewster (Minnesota), are farmer owned processing plants that that changed from being cooperatives to private LLCs. They were losing money, and in a cooperative it is very difficult to pass losses back to your members. But under an LLC they are simply tax write-offs.

Its unbelievable the effect all these new ethanol plants are having on the Midwest. They are driving corn prices up, which in turn are driving land prices up. It will eventually reach a saturation point, but nobody knows when that will happen. Land values should be \$6-8,000 an acre, which seems ridiculously high to Bill.

Back to AGP: Jim Lindsay left AGP on very good terms, greatly admired. Marty Reagan is doing an outstanding job. AGP has been fortunate to have had very good boards of directors. Bill has never missed an AGP annual meeting; they’re usually in Omaha and he enjoys going. Cooperatives force the private soybean processors to offer farmers more money for their soybeans, because at even money, the farmer

will always sell the to co-op of which he is a member, since there will be additional income down the line in the form of patronage payments and equity ownership. But all is not rosy within the cooperative system. Ask yourself: Why did the soybean processing plants at Volga and Brewster come into being? As farmers get bigger, they look for an investment (as in an ethanol or biodiesel plant) that will (1) create an additional product for their crops, (2) add value to the cash basis at which they sell, and (3) receive some income in the form of dividends; co-ops pay patronage to their member co-ops but many individual farmers see little or none of that money. (4) see his income increase in value, or, if things do not go well (5) serve as a tax write-off.

One of the unwritten rules of the game, in terms of locating new soybean processing plants, is that you don't build too near an existing plant. If you don't come onto our turf, we won't come onto yours. This rule is enforced by the threat of retaliation. Address: Omaha, Nebraska.

2047. Mulligan, A.A.; Welch, A.A.; McTaggart, A.A.; Bhaniani, A.; Bingham, S.A. 2007. Intakes and sources of soya foods and isoflavones in a UK population cohort study (EPIC-Norfolk). *European J. of Clinical Nutrition* 61(2):248-54. Feb. [38 ref]

• **Summary:** "Background: It has been suggested that the consumption of a diet rich in phytoestrogens might protect against a variety of diseases common in Western societies. However, there are little available data on the food sources or distribution of intake in the UK diet."

The subjects were 11,843 men and women "from the Norfolk arm of the European Prospective Investigation into Cancer and Nutrition (EPIC).

"Methods: Dietary daidzein and genistein intakes were obtained from 7-day food diaries, completed by participants between 1993 and 1998 and calculated from an in-house food composition database."

Results: There was a large difference in isoflavone intake between soya-consumers and others. "Average daily isoflavone intakes for both men and women were less than 1 mg... However, in soya-consumers, average daily intakes were higher: 8.6 mg in women (IQR [interquartile range]: 2.28-10.72 mg) and 7.5 mg in men (IQR: 2.22-9.17 mg). In both men and women, bread and bread rolls made the highest contribution to isoflavone intake—62.5 and 53.0%, respectively. In soya-consuming men and women, vegetable dishes and milks were the main contributors—25.0 and 38.5% in men and 38.5% and 26.0% in women, respectively.

"Conclusions: Isoflavone intake is low in the UK but may be an underestimate due to soya added to commercial products. Future analyses of the isoflavone and lignan content of basic ingredient foods and commercial items commonly consumed in the UK diet will enable more accurate estimates of phytoestrogen intake to be made. The ability to estimate isoflavone intake in Western populations

more accurately will enable investigations to be conducted into the suggested beneficial effects of phytoestrogens on health."

Introduction: "Traditional soya foods rich in isoflavones, such as tofu, tempeh and miso, are seldom consumed in the UK, but instead soya dairy alternatives, such as milk, cheese and yogurts, and TVP/tofu burgers are more commonly eaten. However, a number of commercial products, such as bread, biscuits and breakfast cereals, contain soya ingredients as food additives and these also contribute to isoflavone intake (ENDS, 1996; Horn-Ross et al., 2000)." Address: EPIC, Dep. of Public Health and Primary Care, Inst. of Public Health, Univ. of Cambridge, Worts Causeway, Cambridge, UK.

2048. Barrionuevo, Alexei. 2007. To fortify China, soybean harvest grows in Brazil. *New York Times*. April 6. p. A1, C7.

• **Summary:** An excellent article on the major changes taking place in world soybean production and trade. For about 3,000 years, China has produced enough soybeans for its own needs. But since about 1995, China has emerged into the world's largest net soybean importer—by far. Three main forces have driven this change: (1) As Chinese workers become more affluent, their appetite for meat increases; therefore more soybeans are needed as animal feed. (2) Fresh water in China has become increasingly scarce. In northern China, where soybeans have traditionally been produced, water tables are dropping at a rate of 3-10 feet/year. "It takes a thousand tons of water to produce one ton of grain," says Lester Brown, president of the Earth Policy Institute, a U.S. environmental research and advocacy group. "So the most efficient way to import water is in the form of grain." (3) China's population, the largest in the world at 1.3 billion people, continues to grow.

Since 2001/02, the USA has been the largest soybean exporter to China. But last year (2005/06), Brazil became China's largest supplier of soybeans; the trade grew 50% over the year before and nearly doubled since 2004. China seeks a long-term, low cost supplier. Brazil still has large amounts of land that could be planted to soybeans, and China hopes to export soybeans directly from Brazil, in its own ships, thereby bypassing the international grain traders such as Cargill, Bunge, and ADM.

But Brazil has drawbacks as a soybean supplier: (1) It has a transportation bottleneck; its infrastructure for transporting the soybeans from field to port in trucks over long (up to 1,000 miles), bumpy, dirt roads, and its congested ports where some ships must wait for up to a month before loading soybeans. (2) Brazil would strongly prefer to export value-added soybean products such as oil and meal rather than raw, unprocessed soybeans. (3) Soybean farmers in Mato Grosso, though producing huge amounts of soybeans, are deeply in debt and losing money, as they become slaves to the big trading companies. (4) The strong Brazilian

currency keeps prices high.

Graphs show: (1) The world's net soybean importers (in descending order): China (by far), European Union, rest of the world, Japan, Taiwan, South Korea. (2) World's net soybean exporters (incl. projections to 2007/08): Brazil, USA, Argentina, rest of world. A map shows world soybean trade. China is the leading destination for both U.S. and Brazilian soybeans. A large color photo shows a truck loaded with soybeans near Rondonopolis, Mato Grosso, Brazil.

2049. Sams, Gregory. 2007. History of work with natural foods and macrobiotics in London (Interview) (Continued—Document part II). *SoyaScan Notes*. April 12. Conducted by William Shurtleff of Soyinfo Center. [Eng]

• **Summary:** (Continued): From 1970 to 1982 Greg was deeply involved in Harmony Foods. Within Harmony Foods (at the same location at Cobbold Road but sectioned off) he opened a 5,000 square foot wholesale business named Whole Earth Cash and Carry. It enabled customers to come in without placing an order in advance.

In 1980 Greg invited Craig to leave the restaurant business and work with him at Harmony Foods. Craig did so; Craig gave the restaurant to Bill Tara. Craig developed a range of sugar-free jams; they were launched in about 1980-81 and were sold under the Whole Earth label. They did extremely well, even in British supermarkets.

In about 1980 they had to sell 49% of Yin-Yang Ltd. to investors, the two Shone brothers (who were independent flour millers) in Liverpool to raise capital. That influx of money helped to keep Harmony Foods afloat.

1982 was a year of rapidly expanding product range, several expansions of premises (he has copies of all old price lists, recipe leaflets, new product announcements, and many photos too). Sales were growing but because of rampant inflation the business started to lose money. Harmony Foods had moved into a new warehouse of 55,000 square feet on Cobbold Road and quickly discovered he could not afford.

In 1982 Greg invented the VegeBurger, which was sold under the Whole Earth label and exploded onto the market. He designed it so it could be made completely under contract so that he wouldn't have to hire a staff and would have no overhead. The new company would be named The Realeat Co. Eventually the entire Whole Earth line became organic. Greg now left the other companies and focused all his energies on VegeBurger. He commissioned Gallup to do the first survey ever on people's attitudes to eating meat in the UK. The first Realeat survey, in 1983, surveyed 1,000 people. The next year he had Gallup expand the sample size to 5,000 people and he developed more refined, standardized questions. These surveys were done entirely for the publicity the results would generate. The news was that a high percentage of young Brits were vegetarian, but also that the number was increasing rapidly every year. So Greg used these statistics in regional new releases which brought

excellent media coverage for VegeBurger all over Britain. At the time he had no idea that anyone else had used that word previously. He did lots of publicity, then and thereafter.

In 1983 he launched the VegeBanger (a meatless sausage)—but an ingredient problem happened which permanently damaged the product.

In 1988, on Aug. 8 (8/8/88), The Realeat Company (located at 2 Trevelyan Gardens) was purchased by British Arkady-Haldane Foods. In about 1990, Greg got completely out of the food business. However he did have an agreement to serve as a consultant and to receive a royalty stream on the products for 10 years. Half of the sale price of Realeat Co. was paid up front and the rest was to be paid as royalties. ADM took Realeat's VegeBurger to Moscow and people loved it. Greg has a photo of Gorbachev holding a VegeBurger. Based on Greg's VegeBurger, ADM created its first retail product ever, which was sold frozen by Pillsbury as the Green Giant Harvest Burger.

For about 2 years Greg looked for his next project. Then in early 1990 he read James Gleick's 1987 book *Chaos: Making a New Science*. This remarkable book introduced the principles and early development of the chaos theory to the public. It was a finalist for the National Book Award and the Pulitzer Prize in 1987. Greg decided to start Chaos Works and [www.chaos-works.com](http://www.chaos-works.com). He and a friend also started to create fractals on his computer and then as a video. He opened a shop named Strange Attractions devoted to chaos theory and getting it into the public consciousness. He developed and sold posters, post cards, etc. and ended up licensing all of these images. After many years he gave the shop to Thornton Streeter.

Then he started to write and publish books, such as *Uncommon Sense: The State Is Out of Date* (1997) and *Sun of GOD: Consciousness and the Self-Organizing Force that Underlies Everything* (2009). Address: London, England.

2050. Sullivan, Cheryl L.; Nash, Marilyn. 2007. Soy on the menu: Recipes for foodservice. Champaign-Urbana, Illinois: Illinois Center for Soy Foods. 52 p. Illust. No index. 26 cm. Series: Soy in the American Kitchen.

• **Summary:** This book has a creative format: (1) An outer color cover folds over the white spiral binding. (2) The pages are spiral bound across the top. (3) The bottom unfolds like a gusset so the book stands up by itself on a table with the pages angled slightly back on a table. (4) A CD-ROM comes with the book. Remarkably, the whole package sells for only \$3.00!

Contents: Bringing soy foods to the American table: Soy in foodservice, why choose soy?, soy foods, vegetarian and vegan recipes [in this book], recipe information, nutrient information, acknowledgements. Recipes: Appetizers. Breakfast. Breads. Salads. Soups. Side dishes. Main dishes. Desserts.

The recipes in this book use: Soy flour, soymilk,

tofu, textured vegetable protein / TVP [texture soy flour], edamame, black soybeans, soy analogs [meat and dairy analogs].

Sidebars include: Biodiesel (p. 10). Research shows kids like soy in school lunches (p. 11). Uncommon soy foods: Tempeh, miso, okara, natto. Are you soy savvy?: Why is soy flour added to baked goods? (p. 14). U.S. soybean production, yield, exports, and domestic usage (1979 vs. 2004) (p. 16). Industrial uses of soybeans: Soy candles, ink, biodiesel, soy cleaners, waterproofing sealants, soy silk (fabric). Are you soy savvy? Edamame (p. 19). INTSOY (p. 22). NSRL (p. 24). What is the soybean checkoff? (p. 27). WISHH initiative for soy in human health (p. 29, 30). Illinois Soybean Association (p. 34). What is okara? Why should you shake up a carton of soymilk? (p. 39). Make your own tofu (p. 47). Address: 1. M.A., R.D., Research Dietitian; 2. Ph.D., Project coordinator. Both: 170 National Soybean Research Center, 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 244-1706 or www.soyfoodsillinois.uiuc.edu.

2051. McKee, David. 2007. Focus on Paraguay: Soy complex accounts for 10% of nation's gross domestic product and the biggest share of its exports. *World Grain* 25(6):32, 34-36. June.

• **Summary:** Paraguay is a land-locked nation between Brazil and Argentina; it is relatively poor, lightly populated, and pastoral. The expansion in soybean acreage during the past 10 years has been rapid and is still accelerating. In 2007 the country planted 2.4 million hectares of soybeans.

ADM, Bunge, Cargill and Louis Dreyfus each has a major presence in the country, but Cargill is the most important. "Relying on its own network of 40 country elevators and port facilities, the Paraguayan subsidiary Cargill Agropecuaria S.A. originates 1.3 million tonnes of soybeans and grain per year." Although Cargill crushes 65% of the soybeans it originates, most of the beans are exported on barges down the Ria de la Plata to Uruguay, Argentina, or Brazil for "transshipping in ocean vessels."

A bar chart shows Paraguay's soy complex exports (in 1,000 metric tons) from 2000-01 to 2006-07. Soybeans are by far the biggest item exported, followed by soybean meal and soybean oil. Address: Grain industry consultant.

2052. Archer Daniels Midland Co. 2007. Annual report: Growing opportunity. P.O. Box 1470, Decatur, IL 62525. 6 + 84 p. Oct. 28 cm.

• **Summary:** Net sales and other operating income for 2007 (year ended June 30) were \$44,018 million, up 20.3% from 2006. Net earnings for 2007 were \$2,162 million, up 64.8% from 2006, and the company's third consecutive year of record earnings. Earnings per share have risen each year, from about \$0.60 in 2003 to \$3.30 in 2007. Cash dividends and shareholders equity have also increased steadily.

On pages 2-3 is a color photo of and message from

Patricia A. Woertz, Chairman, CEO, and President of ADM. "By almost any measure, 2007 was an excellent year for ADM." In a first for ADM, the company bought back 15.4 million shares of ADM stock. ADM opened two new biodiesel plants in the U.S., and one in Brazil, and expanded its oilseed crushing capacity at five North American plants.

On the outside front cover is a color illustration showing how "ADM is uniquely positioned at the intersection of three global trends: growing demand for food to feed the growing and more prosperous global population; increasing demand for energy agriculture and, in particular, transportation fuels from renewable resources; and growing desire for environmental improvement."

ADM's global network, operating in 60 countries, has 240 processing plants and 27,000 employees. "ADM is the global leader in BioEnergy: the largest producer of ethanol in the U.S., and one of the largest producers of biodiesel in Europe." "ADM operates one of the largest and most advanced origination, transportation and logistics networks in the world. Through a fleet of trucks, railcars, barges, and ship charters, the Company is able to take grains from anywhere they are produced in the world, process them into a diverse slate of products, and move these products to any destination in the world."

Accompanying the annual report is a "Notice of Annual Meeting" (39 p.). Patricia A. Woertz (who joined ADM in May 2006 as president and CEO) had a 2007 salary of \$1.2 million, a bonus of \$1.5 million, and various other compensation totaling \$7.6 million (p. 18). Mr. G. Allen Andreas resigned as Chairman and as director of the company effective Feb. 3, 2007. "Pursuant to a Transition Agreement dated as of May 5, 2006 between the company and Mr. Andreas, as amended, Mr. Andreas will remain an employee of the company through June 30, 2008, and will receive a salary of \$1 million per year during the term of his employment" (p. 5). Address: Decatur, Illinois.

2053. NSRL Bulletin (*National Soybean Research Laboratory, Urbana, Illinois*). 2007. Game day chili scores big! 14(3):6. Oct.

• **Summary:** "Cheryl Sullivan and Marilyn Nash, with Illinois Center for Soy Foods (ICSF) and the National Soybean Research Laboratory (NSRL) won top honors for the University of Illinois with their Game Day Chili at the Sixth Annual International Beer and Chili Cook-Off in Urbana, Illinois.

"Over 2,500 attendees sampled 11 different kinds of chili and judges proclaimed the vegetarian chili made with soy to be the best overall. Judging criteria included 5 factors: aroma, consistency, color, taste and aftertaste. The chili was judged on whether it smelled appealing and looked appetizing. It was also assessed based on how well the combination of ingredients melded together, if it tasted good and if after swallowing there was a pleasant aftertaste.

“How good can soy taste? Just ask the judges who gave top honors to Game Day Chili. It was the only entry among all the competitors that included soy. A blind judging format was used, so judges were not aware Game Day Chili was meatless.

“Last year was our first time to enter the contest and participating in 2006 really gave us valuable knowledge for this year’s winning recipe,” said Marilyn Nash, Project Coordinator. Nash commented that one of the recipe’s unique ingredients was chipotle chilies in adobo sauce. ‘It really gave the chili a pleasing smoky flavor.’

“We were the only meatless chili being offered to attendees and many of those who tasted our chili appreciated the fact that it was delicious and vegetarian,” said Cheryl Sullivan, Registered Dietitian.

“Sullivan provided details on the soy component of the recipe. ‘Our recipe incorporates textured vegetable protein, also known as TVPTM, or textured soy protein. It is made from defatted soy flour that has been texturized to resemble meat. TVPTM is a high quality protein and also a good source of fiber. People can substitute it for some or all of the meat in their own favorite chili recipe,’” remarked Sullivan.

“The University of Illinois has a longstanding reputation in the soy area—everything from seed production to processing to nutrition. The recipe was perfected in the Illinois Center for Soy Foods test kitchen located in the National Soybean Research Center on campus at 1101 W. Peabody Drive, Urbana, IL.

“If you’re looking for a crowd pleaser for your next tailgate party or family get together, consider Game Day Chili.”

2054. Soyatech, Inc. 2007. *Soya & Oilseed Bluebook* 2008. Bar Harbor, Maine: Soyatech. 446 p. Nov. Comprehensive index. Brand name index. Advertiser index. Statistical conversions. 28 cm.

• **Summary:** This is the 2nd year in a row that the *Bluebook* (a \$95 value) has been sent free of charge to qualified industry members. On the cover are color photos of seven different crops (mostly growing in fields) covered in this book. The oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed, hempseed, jatropha, linseed, palm, peanut, rapeseed, safflower, soya, sunflowerseed. Note that hempseed, jatropha, linseed, and safflower have been added this year.

On the inside front cover is a color ad from Natural Products Inc. (Grinnell, Iowa) titled “Technology doesn’t have to be complicated to be effective.” Photos show applications of some of the company’s products: soymilk ingredients, tofu ingredients, bakery ingredients, and egg replacers. On the first page is a full page color ad from Bunge North America (St. Louis, Missouri). On the back cover is a full page color ADM ad titled “Where does healthy begin?” showing a mother talking with her young daughter

in the back of a pickup, on a farm. The tag line is “Meeting today’s demands. Envisioning tomorrow’s needs.”

In the Foreword, Peter Golbitz writes: “We no longer determine the price of oilseeds and grains based solely upon their value as a food or feedstock—we now factor in what their value may be as an alternative source of energy. The rise in commodity prices that we have seen over the past year... has been primarily driven by the use of, or the anticipated use of, agricultural crops for energy. Whether or not we can ever grow enough crops to make a substantial contribution to our energy supply is now being debated...” “The continuing removal of trans-fats from food applications has created a boom market for oils, other than those that are hydrogenated,....”

“Soyatech’s role in all of this has been to provide as much information as possible to the players throughout the value chain... Soyatech’s seminal reference, the *Soya & Oilseed Bluebook*, will continue to evolve... and provide the best information available on the industry.” Address: 1369 State Hwy 102, P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

2055. Lester, Bill. 2007. Biodiesel plants being built in the USA (Interview). *SoyaScan Notes*. Nov. 6. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** Many biodiesel ventures have failed for lack of a source of soybean oil. “Most of the biodiesel plants that are being built today are being built by people who have direct ties to a soybean crusher, which becomes a reliable source of crude / unrefined soy oil.” For example, ADM is a partner in the biodiesel plant being built in Missouri. AGP has been big in biodiesel since it is a big soybean crusher that can supply the crude soybean oil. Address: Omaha, Nebraska.

2056. *SoyaScan Notes*. 2007. Chronology of major soy-related events and trends during 2007 (Overview). Dec. 31. Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** Jan. 1—Soyfoods Center changes its name to Soyinfo Center.

Feb.—The Soy Connection for the Food Industry (Vol. 1, No. 1) starts to be published by United Soybean Board as a free e-newsletter. The subject of the first issue is Qualisoy soy oil.

March 6-8 International Soy Utilization conference held in Bangkok, Thailand. It is organized by: The Institute of Nutrition, Mahidol University (INMU), ASA International Marketing (ASA IM), and the Soy Food Forum Southeast Asia (SFF).

April 4—Organizations listed in the *Soya & Oilseed Bluebook* are invited and enabled to update their own listings online. The update listing will appear as soon as the *Bluebook* editors review it and in the print edition in the fall. The *Bluebook* will continue to be printed as a bound book. Preferred customers will receive a free copy. Qualified

people or organizations in the industry who request a copy pay shipping and handling. Those outside the industry must pay for shipping and handling plus a \$95 fee.

June 11—The Hain Celestial Group completes its acquisition of the tofu and meat-alternatives business of WhiteWave Foods Co., a subsidiary of Dean Foods. The product line includes grilled and baked tofu, seitan, tempeh, etc. These products are expected to complement Hain Celestial's existing meat alternatives under the Yves brand in Canada and the United States. The White Wave tofu business generated sales of approximately \$8 million in the last financial year. Dean Foods keeps Silk soymilk.

July 11—Solae announces that it has completed its purchase of Cargill's Prolisse line of isolated soy proteins (ISP; soy protein isolates), including the patented membrane technology for processing ISP.

Aug. 7—SunOpta (incl. SunRich), headquartered in Canada, announces that it has acquired a soymilk plant in Heuvelton, New York, from ProSoya Corporation (Ottawa, Ontario). Allan Routh is president of the SunOpta Grains and Foods Group.

Aug. 16—CPM (Waterloo, Iowa) acquires Crown Iron Works (Minneapolis, Minnesota). CPM is owned by Golbert Global, a private equity group. The acquisition doubles the size of CPM.

Sept. 11—Hain Celestial Group announces it will delay filing its annual report with the U.S. Securities and Exchange Commission (SEC) pending a review of its practices in granting stock options. Thus, the annual report was received by shareholders in April 2008, rather than the typical Nov. 2007.

Nov. 5—Symington's, a major U.K. food manufacturer, has acquired the dry-mix products from Hain Celestial (formerly known as Haldane Foods) for an undisclosed sum. In the purchase of Hain Celestial's dry mix operation, Symington will take over the Barrow based production centre from Hain Celestial and will enable the company to increase its stake in the growing health food and vegetarian sector. Main products in the acquisition are couscous, sport nutrition, snack pots and vegetarian meals. Brands acquired include Granose, Realeat, Direct Foods, Organic and Amazing Grains. Granose was owned by Haldane Foods which also owned Direct Foods and Realeat. So you will also find Sosmix and Burgamix have disappeared as well—but they have returned under the Granose brand. We now have the Granose Sausage Mix, Burger Mix and others that have replaced the Realeat and Direct Foods Sosmix and Banger Mix as well as the Burgamix. Popular products like Nut Roast, Cashew Nut Roast and Chicken Style Bake were discontinued following the sale of the Realeat, Granose and Direct Foods brands.

2057. Hain Celestial Group, Inc. (The). 2008. Annual report 2007. Melville, New York. 8 + 69 + 3 p. April. 28 cm.

• **Summary:** Net sales for the year ended 30 June 2007 were \$900.4 million, up 21.9% from 2006. Net income in 2007 was \$47.5 million, up 22.1% from 2006.

Acquisitions and divestitures: On 8 Dec. 2006 Hain acquired Haldane Foods Ltd., a UK-based producer of meat-free food and non-dairy beverage products, from the Archer Daniels Midland Co. (ADM). Haldane's brands include Realeat frozen foods, Granose, Direct Foods and Realeat dry mixes, and Granose non-dairy beverages. Price: About \$10.1 million.

On 11 Jan. 2007 Hain acquired Avalon Organics, a leader in body care, for approximately \$126.1 million in cash. This includes the brands Avalon Organics, Alba Botanica, and Alba Organics. On 7 Dec. 2007 Hain acquired Tender Care International, Inc., a marketer and distributor of chlorine-free and gel-free natural diapers and baby wipes under the Tender Care and Tushies brand names for \$3.9 million in cash (see 2008 Annual Report, p. 37).

Most of the report is Form 10-K/A. A table of the company's common stock prices, as listed on the NASDAQ Global Select Market under the ticker symbol Hain, shows the highs for FY 2006 ranged from \$20.59 to \$27.94. The highs for FY 2008 ranged from \$32.33 to a record high of \$35.14.

Page F-2: "On June 15, 2007, we announced that the company had received an informal inquiry from the SEC [Security and Exchange Commission] concerning the company's stock option granting practices and the related accounting and disclosures." An independent investigation was conducted. The numerous problems found in the dating and documentation of stock options are discussed. For example: "Approximately one-third of all options granted were priced at quarterly or annual lows." "Some grant dates in earlier periods appear to have been selected in hindsight." Tables on page F-8 and F-9 show that the above problems resulted in \$6.5 million of additional income taxes and a total loss to the company of \$11.7 million. For example, net income for FY 2006, previously reported as \$37.067 million, is now restated as \$36.367 million, a decrease of about 1.9%.

Accompanying the annual report is a "Notice of Annual Meeting of Stockholders and Proxy Statement" (34 p.). Irwin Simon, the founder and CEO, age 49, had the following annual compensation: Salary: \$1.25 million. Total compensation: \$3.851 million. Address: 58 South Service Road, Melville, New York 11747-2342. Phone: 631-730-2200.

2058. Messina, Mark J. 2008. Update on research on the health benefits and risks of soy (Interview). *SoyaScan Notes*. July 26. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** Analysis of the strengths and weaknesses of the Harvard study showing an association between isoflavone intake and sperm counts, by Cavarro et al., and of the Indonesian study showing an association between

tofu consumption (but not tempeh consumption) and mental function. In the latter study formaldehyde used as a preservative in tofu may have caused the problem.

Different basic types of scientific studies involving humans: Epidemiologic studies, case control, cross sectional, prospective (Framingham), intervention, in vitro, in vivo, food frequency questionnaires. Pilot studies vs. full studies.

Second incarnation of the Harvard study. Biological basis for the Harvard study. Effect more pronounced on overweight people. Four biggest weaknesses in the Harvard study: (1) Only looked at 15 different soyfoods but not at other foods consumed, nor at exercise. (2) Four quartiles based on soy intake did not show a dose response. (3) In the 2nd group soy intake was too low to be significant. (4) Ejaculate volume increased.

Another very important study by J.H. Mitchell in 2001 was titled "Effect of a phytoestrogen food supplement on reproductive health in normal males" (Clinical Science {London}). Involved 12 men

Vittorio Unfer has done important research and a case study on use of soy isoflavones to increase sperm count and fertility. A five-year study on endometrial hyperplasia is of long-term concern.

Feminizing effect is a big unknown. What kind of study could be designed. Two cups of Silk soymilk contains 50 mg of phytoestrogens.

Mark is organizing a soy symposium in Japan in November. At least 12 of the papers are good enough to be the subject of news coverage.

The scientific health evidence in favor of a vegetarian diet over a prudent diet that contains meat is no longer impressive. The evidence in favor of fruits and vegetables has grown weaker.

The evidence that soy is good for health is stronger now than 5-10 years ago, but in a more modest way. But the industry has gotten so small: ADM, Solait, and Silk (\$400 million retail sales). Revival Soy has reformulated many of its products so that they no longer contain soy. Address: PhD, 439 Calhoun St., Port Townsend, Washington 98368. Phone: 360-379-9544.

2059. Archer Daniels Midland Co. 2008. Annual report: Vital to the world. P.O. Box 1470, Decatur, IL 62525. 12 + 84 p. Oct. 28 cm.

• **Summary:** This annual report is mainly Form 10-K with 12 pages of color front matter. Net sales and other operating income for 2008 (year ended June 30) were \$69,816 million, up 58.6% from 2007. Net earnings for 2008 were \$1,802 million, down 16.7% from 2007. Earnings per share were down, but cash dividends per common share were \$0.49, up 14% from 2007, and shareholders equity was \$13,490 million, up 19.9% from 2007. ADM extended its record of uninterrupted dividend payments for 76 years. On pages 2-4 is a color photo of and message from Patricia A.

Woertz, Chairman, CEO, and President of ADM.

Accompanying the annual report is a "Notice of Annual Meeting" (41 p.). For calculating performance-based annual cash incentives, ADM uses three criteria (p. 13): (1) The company's return on net assets (RONA) for fiscal year 2008 (60% weighting). (2) The company's achievement of workplace safety objectives (20% weighting), and (3) the company's achievement of personal development objectives (20% weighting). Address: Decatur, Illinois.

2060. Soyatech, LLC. 2008. Soya & Oilseed Bluebook 2009: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 426 p. Dec. Comprehensive index. Advertiser index. Statistical conversions. 28 cm.

• **Summary:** This is the 3rd year in a row that the *Bluebook* (a \$95 value) has been sent free of charge to qualified industry members. On the cover is a farmer, wearing blue jeans, a red short and red cap, standing in a field of soybeans, with a cloudy blue sky overhead. The oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed, hempseed, jatropha, linseed, palm, peanut, rapeseed, safflower, soya, sunflowerseed—the same as last year.

Soybean statistics are given as follows:

Production (pages 349-54):

U.S. Soybean: Planting & Harvesting Dates

U.S. Soybean: Acreage, Yield & Production

U.S. Soybean: Harvested Acreage by State

U.S. Soybean: Planted Acreage by State

U.S. Soybean: Yield by State

U.S. Soybean: Production by State

Argentina Soybean: Production & Yield by Province

Brazil Soybean: Production & Yield by State

Canada Soybean: Production, Yield & Value

Canada Soybean: Production, Supply & Utilization

World Soybean: Production & Area Harvested

Crop Marketing & Value (p. 355-56):

U.S. Soybean: Crop Value, U.S. and Major Producing States

U.S. Soybean: Prices Received by Farmers

U.S. Soybean: Prices of No. 1 Yellow

U.S. Soybean: Price Support Operations

Processing & Products (p. 357-61):

U.S. Soybean: Supply, Disposition, Acreage, Yield & Price

U.S. Soybean Products: Value & Crush Margin Per Bushel

U.S. Soybean Meal & Oil: Supply & Disposition

U.S. Soybean Meal: Average Wholesale Price

U.S. Soybean Meal: Stocks, Production &

Disappearance By Month

U.S. Soybean Oil: Utilization

U.S. Soybean Oil: Prices

U.S. Soybean Oil: Supply, Distribution & Price

Argentina Soybeans & Products: Supply & Distribution  
Brazil Soybeans & Products: Supply & Distribution  
Export (p. 362-66):

U.S. Soybean Exports: By Region, Country & Total Value

U.S. Soybean Cake & Meal Exports: By Region, Country and Total Value

U.S. Soybean Oil Exports: By Region, Country & Total Value

U.S. Soybean Exports: By Port & Destination

Brazil Soybean & Product Exports: By Country

U.S. Soybean Exports: By Month

On the inside front cover is a color ad from Tramco—"the world's most complete line of chain and enclosed belt conveyors." On the first page is a full page color ad from Bunge North America (St. Louis, Missouri); on the next page a full page color ad from desmet ballestra—which supplies healthy technologies for oils containing zero trans fat. SunOpta has a full-page ad on page 4.

On the back cover is a full page color ad from ADM titled "Breathtaking" showing a man leaping off a cliff high above a green valley. The text: "ADM breaths new life into functional foods with its all-natural NutriSoy soy isolates. Water washed to leave many nutrients intact."

In the Foreword, Joe Jordan (General manager and Bluebook content director) writes about feeding the world's population of 6 billion 700 million. Peter Golbitz is no longer with the company he founded (see 2008 interview). Address: 1369 State Hwy 102, P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

2061. Bennett, Beverly Lynn; Sammartano, Ray. 2008. The complete idiot's guide to vegan cooking. New York, NY: Alpha Books. Published by the Penguin Group. xix + 328 p. Illust. Index. 23 x 19 cm.

• **Summary:** Dedicated: "To those who are guided by the open heart and open mind of compassion."

Being vegan is "not about being on some trendy new diet; it is a lifestyle" (p. 85).

The index contains 48 entries for tofu, 37 for tamari, 30 for soymilk, 8 for tempeh, 6 for TVP, 4 each for miso, soy yogurt, tofu cream cheese, and seitan, 2 for silken tofu and Soyrizo, and 1 each for edamame, soynut butter, and Soyatoo (natural nondairy whipped topping).

"There are so many reasons to go vegan—health and nutrition, weight loss, green and sustainable living, and prevention of cruelty to animals. With over 200 mouth-watering recipes and tips for converting meat- and dairy-based dishes into vegan ones, The Complete Idiot's Guide to Vegan Cooking will help readers enjoy a healthy vegan diet without sacrificing taste" (publisher's description). Address: 1. Vegan chef, author, and host of [veganchef.com](http://veganchef.com) since 1999; 2. Long-time vegan cook and "foodie".

2062. Fiore, Toni. 2008. Totally vegetarian: easy, fast, comforting food for every kind of vegetarian. Philadelphia, Pennsylvania: Da Capo / Life Long. xi + 273 p. + 16 pages of unnumbered plates. Illust. (some color). Index. 24 cm.

• **Summary:** A mostly vegan cookbook; each recipe that calls for milk as an ingredient gives soy milk as an alternative. Rarely, if ever, have we seen such a dazzling and delicious variety of vegetarian soy recipes and information in one book. One purpose of this book is to demystify the world of vegetarian cookery and vegetarianism—especially for non-vegetarians.

The Introduction tells the story of the author's gradual transition from typical meat eater (living in Europe), to animal rights activist in Maine, to vegetarian. She advises: Buy locally, eat seasonally, buy organic, use your intuition (and imagination).

The chapter "Stocking the pantry" contains basic information (p. 39-42, 45-46) about sea vegetables, seitan, and soy products, including edamame, miso, tempeh, textured vegetable protein (TVP), tofu, and soy sauce (Light Chinese soy sauce, shoyu, and tamari), and Worcestershire sauce (vegetarian; without anchovies)

Soy related: Golden tofu bites (with one 14-ounce package firm tofu, frozen, then thawed... p. 50). Red pepper tofu dip (p. 67). Vegetarian Caesar salad (with "silken soft tofu, p. 76). Edamame and apple salad (p. 81; kids love edamame). Boiled edamame pods. Curried lima bean and rice salad with tempeh (p. 92). Tofu lime dressing (with silken tofu, p. 102). Spinach and tofu soup (p. 108). Miso soup. Hot and sour soup (with firm tofu, p. 109). Roasted pumpkin bisque (with soy milk, p. 114). Corn bread (with soy milk, p. 130).

One chapter is titled "Tofu" (p. 145-53): Seared tofu. Tofu sour cream. Baked tofu meatballs. Tofu with parsley sauce. Tofu kebabs with tamari-ginger sauce. Tofu pot pie.

The next chapter is "Tempeh and seitan" (p. 155-69): Best braised tempeh (with sweet and spicy marinade, p. 197). Tamari tempeh. Barbequed tempeh. Jamaican jerk tempeh. Malaysian curried tempeh. Greek stuffed cabbage (with lemon cream sauce and tempeh). Tempeh and cabbage. Moroccan stew. Tempeh cacciatore. Tempeh fajitas. Tempeh marsala. Homemade seitan (from bulk vital wheat gluten). Penne with onions and vegetarian bacon (p. 175). Spaghetti tofunese (p. 176). Tofu ravioli with butter and sage (p. 181-82). Bechamel (with soy milk, p. 184). Tofu lasagna (p. 185-86). Vegetable lasagna (with tofu filling, p. 187). No-egg salad sandwiches (with tofu). Mock fish salad sandwiches (with tempeh). Mock Maryland crab cakes (with tofu, p. 196). Tempeh club sandwiches (p. 197). Cornhusker's reubens (with tempeh, p. 198). New York hot dogs and onions (with vegetarian hot dogs, p. 199). Soysage-pepper sandwiches (with Italian-style vegetarian sausage links, p. 200). Eggplant meatballs (with tofu, p. 214). Stuffed sugar

pumpkins (with tempeh, p. 215). Fluffy mashed potatoes (with soy milk, p. 219). Spinach tortillas with potatoes (and seitan, p. 228). Pfannkuchen (with soy milk, p. 239). Rye bread French toast (with soy milk, p. 240). Loaded bagel (with tofu cream cheese, p. 243). Tofu cannoli (p. 250). Tofu coconut cream pie (like a cheesecake, p. 251). Basmati rice pudding (with soy milk, p. 252). Banana chocolate chip cake (with soy milk, p. 256).

About the author: "A vegetarian for over 20 years, Fiore is a self-taught chef who first embraced Mediterranean culinary techniques and philosophy while growing up in Italy." But she spent the first six years of her life in Germany. Address: Portland, Maine. Host of the national public television show Delicious TV's Totally Vegetarian.

2063. Schneider, Michael. 2008. Major sources, composition and processing. In: Frank D. Gunstone, ed. 2008. *Phospholipid Technology and Applications*. Bridgewater, England: The Oily Press. xii + 201 p. See p. 21-40, Chap. 2. Illust. 24 cm. Series: Volume 22 in The Oily Press Lipid Library. [38 ref]

• **Summary:** Contents: Introduction. Occurrence: Glycerophospholipids, sphingophospholipids. Phospholipid processing: Vegetable phospholipids (fluid {crude} lecithins, solvent technologies {membrane degumming, membrane de-oiling, acetone de-oiling, carbon dioxide de-oiling, alcohol fractionation, chromatographic purification}), animal phospholipids (egg phospholipids, milk phospholipids, marine phospholipids, brain phospholipids). Modification of phospholipids: Chemical modification (chemical hydrolysis, acetylation, hydroxylation, hydrogenation). Commercial uses (summarized in tables 2.10 and 2.11).

Figures: 2.1. Model of a biological membrane (from *Scientific American*).

2.2 Structure of diacylglycerophospholipids; X is residue from choline (PC), ethanolamine (PE), inositol (PI), glycerol (PG), water (PA).

2.3 Structure of sphingomyelin.

2.4 Vegetable lecithin processing (including crude soya lecithin, standard lecithin, modification (hydroxylation), acetylation, hydrolysis), fractionation (with acetone, or ethanol), and compounding (using emulsifiers, carriers, or fats and oils).

2.5 Egg yolk phospholipid processing principles (in order to get various products, such as egg yolk powder or yolk lipids).

2.6 Milk fat globule membrane (remarkable complex).

Tables: 2.1 Phospholipid content of biological materials (% of dry matter; soybeans 0.5, sunflower seeds 0.2, rice bran 1, egg yolk 17, salmon roe 8, milk 0.1).

2.2 Main phospholipid classes of commercial interest and their abbreviations: The two main classes are (a) glycerophospholipids and (b) sphingophospholipids. In class (a) are: phosphatidylcholine (PC), phosphatidylethanolamine

(PE), phosphatidylserine (PS), phosphatidylinositol (PI), phosphatidylglycerol (PG), diphosphatidylglycerol (DPG), phosphatidic acid (PA), N-Acyl-phosphatidylethanolamine (NAPE). In class (b) are: ceramide phosphocholine (sphingomyelin).

2.3 Phospholipid composition in oil-free polar lipid extracts for commercial raw materials (%). Gives values for soya [soybeans], rapeseed, sunflowerseed, corn, egg, milk, salmon roe. For example, egg is the richest source of PC (74%) whereas soya has the lowest content of PC (22%).

2.4 Main fatty acid composition of phospholipid mixtures (%). Gives values for soya, rapeseed, sunflowerseed, corn, egg, milk, and salmon roe. For example, egg is the richest source of 16:0 (30%) compares with only 20% for soya.

2.5 Composition of commercial fluid soya lecithin (%). It contains 52% of 6 phospholipids, 6% glycolipids, 4% carbohydrates, 38% neutral lipids, and five fatty acids (palmitic acid 18%, stearic acid 5%, oleic acid 11%, linoleic acid 59%, and linolenic acid 7%).

2.6 Typical composition of a commercial de-oiled soybean lecithin (%). It contains 81% phospholipids, 10 glycolipids, etc.

2.7 Alcohol fractionation of soybean lecithin.

2.8 Chromatic systems for phospholipid fractionation / purification.

2.9 Lipid composition of commercial marine phospholipid products (%). Gives values for krill, fish processing by-products, and salmon eggs.

2.10 Commercial phospholipid products and their predominant use. 18 commercial products are listed. The uses are: Food, animal feed, industrial, cosmetics, pharma [pharmaceutical], and dietetics. For example: The main uses / applications of fluid soybean lecithin (oil containing) are animal feed, food, industrial, cosmetics, pharma. and dietetics. By contrast, de-oiled soybean lecithin fractions (PC 50-80%) are food, cosmetics, pharma, and dietetics.

2.11 Major companies employing a range of phospholipid preparations. The companies are: ADM (US), Solae (US), Cargill (Germany), Lipoid (Germany), Phospholipoid (Germany), Chemi (Italy), Lecico (Germany), Tsuji Oil Mill (Japan), Fresenius-Kabi (Sweden), Doosan (Korea), Nippon Oils and Fats (Japan), Biofer (Italy), Avanti Polar (USA), Belvo (Italy), Enzymotec (Israel), Lipogen (Israel), and Neptune (Canada). For each company is given: Website, country, and which of 13 commercial phospholipid products it sells. Address: Lecithos-Functional Lipid Innovation and Consulting, Freinsheim, Germany.

2064. Soyatech; HighQuest Partners LLC. 2008. How the global oilseed and grain trade works. Southwest Harbor, Maine; Topsfield, Massachusetts. 80 p. Prepared for United Soybean Board (USB) and U.S. Soybean Export Council (USSEC).

• **Summary:** A comprehensive, in-depth overview for both beginners and experts.

Contents: Introduction–History of the Soybean Trade, Modern Uses of Soybeans, Trends and Developments Affecting the Use of Soybeans, Recent Trends in Trade, Overview of Major Origination and Consumption Countries.

Section 1–Competitiveness of Soybeans and Other Oilseeds: Competitive Oilseeds, Protein and Oil Content.

Section 2–Seed Technology: Major Players in Seed Technology (Monsanto, DuPont and Syngenta), Research and Development in Seeds, Relationships with Major Soybean Processors, Persuading Farmers to Use New Seeds, Profits and Premiums, Impact of Traits on Production Techniques and Sustainability, Successes and Barriers to Entry.

Section 3–Production-Growers: World Soybean Growing Regions, Factors That Explain the Ongoing Shift in World Production to Brazil and Argentina, U.S. Soybean Growing Regions, The Grower’s Role in the Global Soybean Trade, Planting Decisions, Seeds and Crop Inputs, How and Where Growers Sell Their Crops.

Section 4–Quality: Soybean Quality, Cleaning in Brazil and the U.S., Soybean Meal Quality.

Section 5–Grain Elevators: Purchasing the Crop, Elevator Marketing Options, How Elevators Sell Their Crops, Blending, Interior Elevators, River Elevators and Export Terminals.

Section 6–Processor Soybean Crusher: How a Soybean Processing Facility Operates, 5 Steps of Hexane Extraction (Handling and Elevator Operations, Preparation and Conditioning, Solvent Extraction and Oil Desolventizing, Flake Desolventizing, Oil Refining), Further Oil Processing, Crush Margin Review, Decision of When to Crush, Selling End Products, Pricing Each Leg of the Soybean Complex, Incidental Input Costs,

Section 7–Transportation Logistics: Transportation, Growers, Elevators, Soybean Processors, International Sales.

Section 8–Risk Management Tools: Risk and Markets, Brief History of Agricultural Futures and Options, Brief Description of Each Financial Instrument, (Futures Options on Futures, Commodity Swaps, Spreads / Straddles), Basis, Chicago Board of Trade Price, Basis Impacting Trade Volumes, Risk Management Tools, How Commodity Funds and Indexes Affect Chicago Board of Trade Prices,

Section 9–End Customers and Users. Soybeans, Soybean Meal and Soybean Oil: First-Tier Customers in Domestic Markets, First-Tier Customers in the International Markets (Soybeans, Soybean Meal, Soybean Oil), Major Grain Trading Companies (ADM, Bunge, Cargill, Louis Dreyfus), How International Sales Work, Competitiveness of U.S. Soybeans and Products, in the Export Market.

Section 10–Conclusions, Trade Flows (Soybeans, Soybean Meal, Soybean Oil), Description of the U.S. as Residual Supplier for International Market, Soybeans and

Soybean Products Originated in South America are Cheaper than Those Originated in the U.S., How Can the U.S. Become the Dominant Supplier of Soybeans, Meal and Oil?

Appendix: Countries in Each Region of Trade Matrix, International Trade Flow Chart, World and U.S. Soybean Supply & Demand, 2002/03–2006/07 Tables, Major Import Regions for Global Soybean Supply, Index of Maps, Tables and Graphs.

The Introduction–History of the Soybean Trade begins: “Soybeans have been cultivated in China for over 5,000 years for food and as a source of drugs. In 2853 B.C., the Emperor Shen-nung named soybeans as one of the five sacred plants, with rice, wheat, barley and millet.”

Note: What terms does the report use to discuss genetic engineering? The terms “biotechnology” and “biotech” are used a total of 5 times. The term “genetically modified” is used 3 times, but its abbreviation, GMO, is used 33 times. The terms “genetically engineered” or “genetic engineering” are not used at all. Address: Washington, DC.

2065. WISHH. 2009. WISHH–World Initiative for Soy in Human Health (Website printout–part). [www.wishh.org](http://www.wishh.org) Retrieved Jan. 29.

• **Summary:** Contents: Home. About WISHH: Mission and vision, WISHH Committee, Our supporters / partners, Staff. Global outreach: WISHH has activities in the following countries, listed alphabetically and highlighted in green: Afghanistan, Bangladesh, Botswana, Burkina Faso, Cambodia, Ivory Coast, Ghana, Guatemala, Haiti, Honduras, India, Indonesia, Kenya, Mozambique, Pakistan, Senegal, South Africa, Uganda, Vietnam, Zimbabwe. These countries are shown on a map of the world and each program is described in considerable detail if you click on the name of that country below the map. Another group of countries in the same list, whose names are written in black, are those where WISHH presently has projects but (being very busy and active) has not yet had time to describe that project and add a color photo. They are: Angola, Democratic Republic of the Congo (DRC), Ethiopia, Malawi, Nicaragua, Nigeria, Tajikistan, Tanzania.

Media communications: Press releases, Newsletters, Annual reports, Photo gallery (very interesting). Workshops / Training: International workshops, Washington, DC, workshops, Midwest workshops, Other training. Nutrition library: Nutrition HIV/AIDS overview, WISHH presentations, WISHH papers / publications, WISHH HIV/AIDS activities, HIV/AIDS resources, SoyCow & VitaGoat, Economics of soy. Resources / Links: Soybean organizations and agencies (33), U.S. government and international organizations (13). About soy: Soy products, composition of soy, US soy production, Supplier list. Contact us: The WISHH office is co-located with the American Soybean Association office near St. Louis, Missouri.

“Global outreach: WISHH works with multiple private



voluntary organizations and commercial companies in more than 28 different developing countries in Africa, Asia and Central America. Many of these groups are using U.S. high-protein soy to improve diets and health as well as encourage growth of food industries in developing countries.”

Supplier list—Suppliers of soy and soy products: ADM, Bunge Milling, Cargill, Inc., CHS (Cenex Harvest States), Soya Kenya (agent for CHS in Kenya), Louis Dreyfus Corp., Nedan Oil Mills (Pty) Ltd. (Afgri Products) (Republic of South Africa), North American Millers’ Association, Rab Processors Ltd. (Malawi), Seba Foods (Malawi), The Solae Co., Soy Afric (Kenya), SunOpta Food Group LLC (USA), Zeeland Farm Soya (USA).

SoyCow & VitaGoat: Both are manufactured and supplied by Malnutrition Matters (Frank Daller), 498 Rivershore Crescent, Ottawa, ON, Canada K1J 7Y7. [www.malnutrition.org](http://www.malnutrition.org). Details about each low-tech machine are given.

Color photos show: (1) Jim Hershey, executive director of WISHH, with Africans interested in soyfoods in Cote d’Ivoire. (2) Ditto. (3) Handsome boy with soy in Mozambique. (4) Jim Hershey drinking soymilk in Malawi. Address: 12125 Woodcrest Executive Dr., Suite 100, St. Louis, Missouri 63141. Phone: (314) 576-1770.

2066. Dawson, Chris. 2009. Re: History of Clearspring and brief biography. Letter (e-mail) to William Shurtleff at Soyinfo Center, Feb. 14. In reply to an e-mail questions from W. Shurtleff. 2 p.

• **Summary:** “Weeks flying by. Sending a note from home, just before I head out to [www.biofach.de](http://www.biofach.de) organic trade fair in Nuremberg.

“Your focus on soyfoods and soya beans is of prime importance *Today*.

“Soya beans are the most misunderstood food/crop/legume.

“Today rain forests are being destroyed to grow soya for animal feed. Japan is the only country/nation which fully understands the true value of soya, producing some 500,000 tons of miso. Only some 10,000 tons goes abroad. In the West, we are so busy making TVP and/or feeding the soya to animals. We have not a clue!

“Sometimes I feel that I should focus the whole emphasis of Clearspring on Miso, to wake up the West to the true value of Soya.

“I became a vegetarian in 1971-1972.

“I came to London in 1974, still a vegetarian but a bit bored with beans sprouts and the like.

“One bowl of miso soup in 1974 and I immediately knew that miso soup was the key to having an exciting vegetarian diet and that miso is a vital food for now and the future.

“1974 April 1st I headed out for London from Auckland, New Zealand. 36 hours of travel! Came here, to further my studies in organic agriculture.

“1977 A bunch of us started The Community Health Foundation here in London. Within that complex, I started: East West Natural Foods, in Old Street, London. The shop

became one of the most important macrobiotic food stores in Europe.

“Already running from around 1974 [what was?]. Peter Bradford, Bill Tara, Harry and Bob Harrop and several others were running Sunwheel Foods.

“I made indirect imports from Mitoku through Sunwheel Foods for the shop.

1978 Oct. I decided to travel through the U.S. and head back to N.Z., to set up an import business of macrobiotic foods there.

“Sunwheel bought East West Natural Foods in about 1979. Peter went to work there, keen to do retailing. The shop may have run with the Sunwheel name for awhile.

“Sunwheel company was sold off in early 1980’s. The managers, Bob Harrop and Jonathan Toase stayed on for a while. Eventually both Bob and Jonathan left. Bob went to work with Peter at the shop. Jonathan started a wholesale company.

“From a hat full of names, the shop became Clearspring Wholefoods, Clearspring being the name suggested by Bob.

“Next, Peter was keen to open a chain of stores. Peter and Jonathan teamed up again to start a wholesale company/warehouse around 1988 for the planned chain of stores. Clearspring became the wholesale company and the shop became Freshlands. Clearspring became the importer from Mitoku. Sunwheel having been sold a couple of times and having lost its interest in Japanese foods.

“1993 British pound collapsed against the Yen. Sunwheel struggled to open L/C [letters of credit] to Mitoku.

“Enter Christopher Dawson (again)! I did stay in N.Z. for a period, importing from Mitoku. I visited Kazama-san in Japan in 1979 and joined Mitoku in 1980. Kazama-san had visited my store in London in 1977-78. I had been with Mitoku since 1980, running around the world doing sales and running around Japan discovering producers, making their products certified organic.

“I decided to personally start a new company in the U.K., buying Clearspring in Sept. 1993, and then making it an international trading house of Japanese Foods and Western organic Foods. Jonathan stayed for a while as manager

“1998 I decided to come to London and run the company on site, rather than giving directions from Japan. Bob Harrop was always giving me a hand at a distance. In 2002 he came onboard full time and is with me today as Finance Director.

“These few notes today and will try to get back to you with some statistics soon.

“Thank you, Christopher.” Address: 19A Acton Park Estate, London W3 7QE, UK. Phone: +44 (0)20 8749 1781.

2067. Shurtleff, William; Aoyagi, Akiko. comps. 2009. *Bibliography of lecithin: 1,504 references from 1793 to 2009, extensively annotated.* Lafayette, California: Soyinfo

Center. 494 p. Subject/geographical index. Author/company index. Printed March 16. 28 cm. [1504 ref]

• **Summary:** This comprehensive bibliography on lecithin focuses on lecithin derived from the soybean. Starting with the early literature, it shows how and why the soybean has become the world’s most popular lecithin source. It concludes with the vast body of literature published since World War II. Thus it is one of the most comprehensive, current, and useful sources of information on lecithin available today.

One of more than 50 bibliographies on soybeans and soyfoods being published by the Soyinfo Center, it is based on historical principles, listing all known documents and commercial products in chronological order. Containing 31 different document types (both published and unpublished, including many original interviews and partial translations of Japanese and European works), it is a powerful tool for understanding the development of this subject and related products from its earliest beginnings to the present, worldwide.

Compiled one record at a time over a period of 36 years, each reference in this bibliography features (in addition to the typical author, date, title, volume and pages information) the author’s address, number of references cited, original title of all non-English publications together with an English translation, month and issue of publication, and the first author’s first name (if given).

It also includes details on 262 commercial soy lecithin products, including the product name, date of introduction, manufacturer’s name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to use the bibliography, a complete subject and geographical index, and author/company index, are also included. Address: Soyinfo Center, P.O. Box 234, Lafayette, California 94549 [www.soyinfocenter.com](http://www.soyinfocenter.com). Phone: 925-283-2991.

2068. Davies, Henry. 2009. Re: Chronology of work with soy in Southern Africa, 1987 to present. Letter (e-mail) to William Shurtleff at Soyinfo Center, March 17. 2 p.

• **Summary:** 1987 Nov. 1—First got involved with soy and the feed industry.

1987 Nov. 1—Started work on the first extruders to be imported to South Africa used mainly for the manufacturing of full fat soy. Henry initiated the establishment of the Committee for the Evaluation and Standardization of Analytical Methods for Determining the Effects of Full Fat Soya Processing. This committee aims to provide a nationally accepted standard of quality control for processed soy under supervision of the Agricultural Research Council

(ARC) and the National Protein Council.

1998 March–During 1998, he visited a TVP plant in Egypt together with the American Soybean Association (ASA). It was then that he recognized the similarity between the processing systems used for TVP and that of full-fat soy.

1998 May 21–On his return to South Africa, ASA invited him to attend the International Conference on Processing and Utilization of Soybeans (20-21 May 1999) in Pretoria. He was requested to deliver a paper on the subject of soybean for local human consumption. The title thereof: “Current Food Products and Potential in SA”.

1999 July–Invited by Cochrane Fellowship Program to attend a soy training course at the Illinois University on the processing of soy for Human Foods (Small Scale Processing).

1999 Nov.–Elected as executive member of South African Soyfood Association (SASFA).

2000–Attended an intensive international training course on TVP and related issues at Texas A&M University, College Station, Texas, visiting Insta-Pro International offices in Des Moines, as well as a texturized vegetable protein production plant in Vinton, Iowa.

2004 Jan. 1–Started manufacturing of Recharge Instant High Protein Porridge drink after observing the effects of HIV/Aids within the local community and especially co-workers.

2006 July 15–Eden Manufacturing PTY (Ltd) starts a working relationship with WISHH initiating the first VitaGoat and SoyCow units to be installed at the Bergville Training facility.

2006 Aug. 4–Completed the first training centre at the original Eden Manufacturing building situated in Bergville town.

2006 Sept. 19-22–The first Soy Short Course is held at the new training centre in association with SASFA (South African Soyfood Association). 54 people attended the 4-day course. They were taught how to make soymilk and various other soy beverages using the SoyCow (which requires electricity) and VitaGoat (which is bicycle powered). The course was paid for by WISHH.

2006 to 2009 and current–Chairperson of Soy Southern Africa (SSA), previously known as SASFA.

2008 July 21–Install VitaGoat Food Processing System in Shamva, Zimbabwe. The installation was hosted and paid for by HUMANA People to People ([www.humana.org](http://www.humana.org)). At this location, Henry also lectured on soy nutrition. Humana operates a huge farm where they have managed to plant some soybeans for their own use with the VitaGoat, which produces enough soymilk that Humana can provide (free of charge) 500 ml of soymilk daily to each of 400 school children, as well as enough soymilk to use in their own kitchen for food.

2008 Aug. 8–Install VitaGoat Food Processing system in Tugela Ferry, Northern KwaZulu-Natal, South Africa.

2008 Aug. 21–Install SoyCow Food Processing system in Orange Farm, Johannesburg, South Africa.

2008 Oct. 15–Install a VitaGoat Food Processing system in Nahamatanda, Beira, Mozambique.

2008 Nov. 12–Relocate to new premises outside Bergville town.

2009 Jan. 4–Eden Manufacturing engages in the services of a professional social project manager as well as an educationalist / production manager to add further specialised services to their network.

2009 March–Constitute the establishment of the Eden Social Development Foundation to assist with funding of designated projects. Address: P.O. Box 206, Bergville 3350, KwaZulu-Natal, South Africa. Phone: +27 36 448-1605.

2069. Krohn, Tim. 2009. Lowell Andreas dies. *Mankato Free Press*. April 6.

• **Summary:** “The man who helped grow Archer Daniels Midland into an international Giant and who donated millions of dollars to Mankato college, hospitals and other endeavors has died.

“Lowell Andreas, 87, died Saturday at his home in Mankato.

“After World War II, Lowell and brother Dwayne purchased Honeymead in Mankato, growing it to the largest soybean processing plant in the country. They sold it in the 1960s and bought a bank in the Twin Cities.

“They were asked to join ADM where Lowell served as president for six years before retiring. But he remained on the board of directors until recently and always maintained an office in the Mankato ADM plant.

“Dwayne took over as president and led ADM for 25 years until retiring in 1997.

“ADM, with sales of \$70 billion last year, is the world leader in processing soybean oil and the largest producer of ethanol in the world.

“Lowell was born in Lisbon, Iowa, and majored in philosophy at the University of Iowa.

“Lowell and his wife, Nadine, donated to a variety of groups, most notably the arts at Minnesota State University and Immanuel St. Joseph’s Mayo Health System.

“They donated \$4 million toward the \$14 million Andreas Cancer Center being built at ISJ [Immanuel St. Joseph, now renamed Mayo Health System, in Mankato].

“In 2007, Lowell and other family members donated \$7.5 million to MSU [Mankato State University] for an endowment in the name of Nadine, who died in 2005 at age 82.

“‘Nadine had a deep love for the arts, especially theatre,’ Lowell said at the time of the gift.

“Nadine was born in West Liberty, Iowa, and attended the University of Minnesota, where she performed in theater productions and developed a love of the arts.

“The couple also funded the Andreas Theatre in the

Performing Arts Center and provided the naming gift for the Andreas Observatory on campus [at Minnesota State Univ., Mankato].

“A memorial service will be held at 3 p.m. Thursday at First Presbyterian Church in Mankato. A private burial will be in Glenwood Cemetery. Memorials are preferred to the Andreas Cancer Center at ISJ. Mankato Mortuary is handling arrangements.”

2070. Boismenu, Clyde. 2009. Re: U.S. makers of dry whole-bean soymilk. Letter (e-mail) to William Shurtleff at Soyinfo Center, May 28. 1 p.

• **Summary:** This soymilk does not have the okara removed; rather, it is very finely ground or homogenized under high pressure.

(1) ADM. The organic soymilk market would ordinarily be too large for ADM. But they were issued a patent on a product that was re-functionalized after cooking. The equipment for this was installed in a plant ADM was building in Enderlin, North Dakota to process other edible beans and from the start they targeted the organic market with this soybean operation. However, users of the ADM Organic Whole Soybean Powder apparently found it was not as functional as expected and the project was not successful. “ADM is shutting down as I write.” This then put Clyde in the position of having to find some alternate source to keep his customer running. There are actually four: All of them deal only in Non-GMO and Organic soybeans.

“(1) Soylink, Ottumwa, Iowa—is the most interesting. They have the ability to dry de-flavor milled whole raw soybean and then pulverize it to US 1000 mesh without heat damage. This project has so far also not been successful and the company is in the process of being sold (today actually). Dr. Noel Rudie is a very knowledgeable and friendly guy if you want to contact them.

“There are also 3 companies who have developed the means to mascerate soybeans completely enough (high-pressure homogenizers I believe) to make an acceptable soymilk and spray-dried soymilk powder from whole (de-hulled I am sure) soybeans. You will recognize the huge cost saving this represents.

“(2) SunOpta (formerly SunRich) is the longest established.

“(3) Devansoy has long been into soymilk and I am not sure it is publicly known that Cresco Food Technologies manufactures the soymilk products for them.

“(4) Jeneil Biotechnologies—their website shows only cheese and dairy flavors but they tell me they were under a non-compete agreement for some years and spent this time developing everything they make also from soybeans. Among other things, this apparently means a couple of different kinds of soymilk, including enzyme active and whole bean. Jeneil does not advertise nor publicize their soy based line of products and I found them kind of unhelpful.”

Address: LookAlive / Basic Foods Co., P.O. Box 240070, Los Angeles, California 90024. Phone: 310-473-0719.

2071. Wendel, Armin. comp. 2009. Soybean solvent processing plants worldwide in 2006, including those that make lecithin. Germany.

• **Summary:** This 4-sheet Excel spreadsheet was compiled by lecithin-expert Armin Wendel in 2009. The 5 columns are: (1) Company name. (2) Country. (3) Area (such as state in USA). (4). City. (5) Lecithin? (Yes/No).

The main companies are ADM, Bunge, Cargill, and Ag Processing Inc. Most companies do not make lecithin, except at one location.

The main countries are USA, Argentina, Brasil [Brazil], China, Netherlands, Germany, Spain and Italy are also listed. Address: Germany.

2072. Archer Daniels Midland Co. 2009. Annual report: When a company serves vital human needs, it must perform. P.O. Box 1470, Decatur, IL 62525. 6 + 90 p. Oct. 28 cm.

• **Summary:** This annual report is mainly Form 10-K with 6 pages of black and white front matter. There is to summary of financial statistics to help the shareholder. It seems to say: “Figure it out for yourself.” On page 36 we find: Net sales and other operating income for 2009 (year ended June 30) were \$69,207 million, down 0.88% from 2008. Net earnings for 2009 were \$1,707 million, down 5.3% from 2008.

Accompanying the annual report is a “Notice of Annual Meeting” (18 p.). Address: Decatur, Illinois.

2073. Soyatech, LLC. 2009. Soya & Oilseed Bluebook 2010: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 356 p. Dec. Comprehensive index. Advertiser index. Statistical conversions. 28 cm.

• **Summary:** This is the 4th year in a row that the *Bluebook* (a \$95 value) has been sent free of charge to qualified industry members. On the cover are six color photos, including a heavily loaded tanker moving through a blue sea, and a farmer standing in a field of soybeans, bending over to examine one of the plants.

Soyatech has moved to a new part of Maine during the past year. This edition of the *Bluebook* contains 74 fewer pages than it did last year. The oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed, hempseed, jatropha, linseed, palm, peanut, rapeseed, safflower, soya, sunflowerseed—the same as last year.

On the inside front cover is a color ad from Natural Products Inc. (Grinnell, Iowa), makers of innovative ingredients for bakery, soymilk and tofu. On the first page is a full page color ad from Louis Dreyfus Commodities; on the next page a full page color ad from desmet ballestra—which supplies healthy technologies for oils containing zero trans fat. SunOpta has a full-page color ad on page 4.

On the back cover is a full page color ad from ADM titled “Trailblazing” showing a man on a mountain bike riding through muddy water. The text: “ADM constantly finds new paths for functional foods with NutriSoy soy isolates.”

Chris Erickson is CEO. Keri Hayes is publisher and events director. In the Foreword, Joe Jordan (General manager and *Bluebook* content director) writes about the now popular word “sustainability” and its various definitions. He asks many questions about sustainability. Address: P.O. Box 1307, 19 Clark Point Rd., Suite 112, Southwest Harbor, Maine 04679. Phone: 207.244.9544.

2074. Shurtleff, William; Aoyagi, Akiko. comps. 2010. History of soybeans and soyfoods in Canada (1831-2010): Extensively annotated bibliography and sourcebook. Lafayette, California: Soyinfo Center. 1060 p. Subject/geographical index. Printed 20 Feb. 2010. 28 cm. Available free of charge at [www.soyinfocenter.com/books/137](http://www.soyinfocenter.com/books/137). [2336 ref]

• **Summary:** Begins with a chronology of soy in Canada from 1831 to 2010. In 1831 the first soy product (“A few dozen India Soy” [sauce]) arrived in Canada. Soybeans were probably first cultivated in Canada in 1855. Contains a full-page map of soy in Canada, plus many historical illustrations and photos, many color. Address: Soyinfo Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

2075. Messina, Mark J. 2010. The war has been lost: Update on research on the health benefits and risks of soy (Interview). *SoyaScan Notes*. May 31. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** The image of the safety or healthfulness of soyfoods, primarily on the Web, in large part due to the Weston A. Price Foundation, is getting worse and worse. Mark fears that the future of soy as a human food looks bleak, and that sales of soyfoods and ingredients will decline over the next 20 years—even though the nutritional science is making soy look better and better.

For example, the research on the safety of soy for people with thyroid problems is now solid. Soy does not cause thyroid problems in humans. Soy does cause thyroid problems in rats but rats are a bad model to use for studying this problem. Even for people living in a goiter belt—a place with iodine depleted soil—consuming soy is not a problem.

The research on the safety of soy for women with breast cancer is becoming more solid. The paper by Shu et al. is the most important development although the Guha paper is also basically supportive of safety. The paper by Messina and Wood discusses the clinical work. Add to this the fact that there is another paper albeit smaller in size that will be published soon that supports the paper by Shu and that it is now known that the animal studies aren’t very relevant to humans because the amount of biologically active genistein

in circulation is much higher in mice than in humans makes a pretty strong case. The editorial by Messina, Abrams and Hardy that makes the case succinctly.

It is quite clear that if a young girl has one serving of soymilk a day for life, that will reduce her risk of breast cancer. Likewise for women with breast cancer. However, nothing is clear when it comes to chronic disease and diet. The hypothesis is quite intriguing and has epidemiologic and animal data in support of it. However, without clinical data it will remain speculative. Nevertheless, because the potential benefit is so great, the amount of soy need for protection so small (one serving) and that in my view there is no disadvantage to consuming soy, it seems like a no brainer to make a recommendation for girls to consume one serving per day.

The area where we have the fewest good studies and the biggest knowledge gap is in safety of soy for young children. Seventh-day Adventist children have been consuming soymilk for more than 60 years with no reported problems, yet this needs to be studied scientifically. A good two-year study has been designed but has yet to be funded.

There has been a big decrease in sales of soy infant formulae over the past ten years due to uncertainty in this area.

The main area of concern today is with isoflavones / phytoestrogens (such as genistein), which are classified as endocrine disruptors. The anti-soy faction likes to talk about “estrogens in soy” as being risky and about feminization.

The Weston A. Price Foundation (WAPF) recently had their 10th annual conference / meeting in Chicago; 1,000 people attended. Their focus was not anti-soy, although a few such comments were made.

Note: According to Wikipedia, the organization was founded in 1999 by Sally Fallon and Mary G. Enig, PhD. Headquartered in Washington, DC, it is a “501(c)(3) non-profit organization dedicated to ‘restoring nutrient-dense foods to the American diet through education, research and activism.’ Its goals include disseminating the research and dietary advice of dentist and nutritional researcher Weston A. Price, who studied the foods and health of isolated non-industrialized peoples around the world, and supporting the scientific validation of traditional diets.” Their anti-soy program is named “Soy Alert!” and they repeatedly refer to soy as “toxic.” “In 2010 its membership numbered 13,000 and was growing at an annual rate of 10%, according to The Washington Post (6 Aug. 2008). It has more than 450 community-driven chapters across the United States, and international chapters in Australia, Canada, Finland, Germany, Pakistan, New Zealand, the United Kingdom and various other countries.”

Mark regrets that he agreed to debate Sally Fallon. She made a number of false claims, such as Illinois prison inmates were being fed 100 gm of soy protein a day.

Alpro Soya recently released an excellent cartoon video

commercial titled “Great Ideas Often Take a Long Time to Sink in” as part of its “Join the movement now” campaign. It encourages people to change their diet by replacing meat and dairy by an alternative just once a week.

White Wave [Dean Foods] is no longer funding scientific studies on soy—as they were a year ago. They have turned all their soy activities over to a PR firm. Mark finds this very disappointing. However the Silk Soy Nutrition Center has a good website (soynutrition.com) which focuses on the health benefits of soy.

The next soy conference will be in October. Kaayla Daniel is writing a new book of anecdotes about how she has helped people who had nutritional problems with soy.

What evidence does Mark have that people are concerned about the safety of soyfoods? (1) The United Soybean Board (USB) has sponsored a booth at the annual meeting of the American Dietetic Association each year for at least the last 15 years. The booth is organized by Publicis, the USB’s PR agency. The purpose is to provide information about soy oil and soyfoods. Materials are provided and usually a soy-related product served or handed out. It could be edamame or soynuts or chap stick made with soy oil. The ADA show attracts about 10,000 dietitians. Mark has staffed the booth every year (except one when he was unavailable) to answer questions about soy nutrition. He answers about 50 questions during the 3-day meeting. Most of the questions are about soyfoods (rather than soy oil). He has watched the nature of these questions change over the years. Initially they were about ways to incorporate more soy into the diet. Now they are about the safety of soyfoods and soy formula, and about isoflavones.

(2) He is often contacted by non-scientific journalists who want to interview him for radio, TV, or the Web / blogs. Here again he is now hearing the same safety concerns. (3) Mark gives many talks about soy nutrition each year. After a typical talk, he opens it up for questions. Here, also, he gets mostly questions about the safety of soy. (4) Mark’s wife, Ginny, does a great deal of work promoting vegetarian and vegan diets. She says that support for soy is weakening among vegetarians. (5) On the Web, the number of negative stories about soy nutrition is growing. Almost all are based on hearsay rather than on science. (6) Mark increasingly hears negative comments about soy at random. In short, the climate has changed dramatically since 1990, when the trend was “straight up,” to today when things are looking down. Mark has no reason to believe that this downward trend will not continue.

Twenty years ago the soy industry should have developed a long-term strategy, with adequate funding, to respond to the anti-soy faction disinformation campaign with science-based facts. But the industry was unwilling to do this. They thought it would go away, that it was just a passing fad, or that it was not important and would not have any significant effect on the market, which was growing

rapidly at the time. Mark did everything he could to try to convince the soy industry that this was a real concern and that they should take action. There is still no interest in a long-term strategy, but now it is probably too late. Address: PhD, 429 Calhoun St., Port Townsend, Washington 98368. Phone: 360-379-9544.

2076. Sharma, Ratan. 2010. Re: Work with the American Soybean Association (International Marketing), soymilk and tofu in India and worldwide. Letter (e-mail) to William Shurtleff at Soyinfo Center, Sept. 22. 2 p.

• **Summary:** “I joined the American Soybean Association (ASA) in 1997 as a soymilk and tofu expert and since then I have been in touch with the ASA’s International Marketing (ASA-IM) activities worldwide. Soybean and soy meal utilization in the animal sector is the first priority of ASA-IM as it consumes most of the soybean and soybean meal (utilised in poultry, animals, aquaculture, etc). But they also have a full-fledged food program in almost all their international offices and they have a substantial budget for this. I know these soy food promotion and utilization programs in India, Japan, China, Mexico, Middle East, etc. And we have these programs in Sri Lanka, Pakistan and Bangladesh through our India office.

“ASA-IM sends teams of potential and prospective entrepreneurs to the US and other countries for advance training on the soy food production and utilization. I have lead such teams to attend the advance courses on the soymilk, tofu, TVP and other products at INTSOY, Texas A&M and Kansas State University courses separately. These courses were attended by Pakistan, Bangladesh and Sri Lanka based soy entrepreneurs also. ASA-IM paid all their hefty course fee, hotel stay, as well as meals and other incidental expenses. The participants paid only for their international air fare. I also visited Bangladesh, Sri Lanka, Nepal and Pakistan so many times to help the soymilk and other soy food manufacturers in these countries.

“ASA-IM spends lot of money on the promotion of soy for the food uses all over the world. I may try to send you some pictures of these activities. These help in creating the market for the small, medium and large scale soy food producers. We do it for the soymilk, tofu, soy nuts, soy flour, TVP and all other soy food products manufactured and sold by the Indian soy food manufacturers.

“ASA-IM promotes the soy food business through the trade fairs, industry visits, helping them in attending government training programs etc. The Indian Government also helps in promoting the soy food business and products. Once they provided huge funds for the generic campaign of the soy food products in India and the advertisement program ran on the popular TV channels, radio, print media etc. for a few months. We coordinate the entrepreneur development programs through the government departments and they have run exclusive training programs on the soy

food business in which hundreds of prospective and existing soy entrepreneurs participated.

“Soy fortified products are also popular in India. One of the Indian states, Gujarat, recently introduced wheat flour fortified with soy flour for public distribution system (a subsidised ration for the poor people). All this is run by government programs. The Government of India (GOI) feeds approximately 250 million children, women and men under various feeding programs and soy is the main protein source in most of these. They use other protein options also based on the price and the availability but soy is preferred by the government in these programs. We help them in the product formulation, recipe development etc.

“I introduced the soymilk, tofu and other small scale soy food production business to the Indian army, also for their soldiers who retire at an early age and go for low profile business. I gave them the option of the soy food business on a small scale after their retirement from the army. At one of the army rehabilitation centres they have installed soymilk, tofu and other soy food processing units to train their retiring soldiers. I go there from time to time and impart training to them also when the new lot of soldiers come for this program.

India has made an excellent progress in the soy food business on small, medium and large sale production and there continues to be tremendous growth in this field, especially the soymilk, tofu, soy flour, TVP, soy protein based products etc.; you can see a lot of these products in the super stores. One thing that is remarkable here is that besides selling there products in the rural and urban areas, the soymilk and other soy product manufacturers sell a substantial quantity of their product through the super stores and other organised marketing channels. I help them in making the good quality packaging with the proper shelf life, giving all the nutritional and commercial information on labels, following the rules and regulatory norms framed by the GOI, getting a bar code, taxation, industry licensing, etc.

More later, Ratan. Address: PhD, Manager, the SoyaCow Centre, KH-177 Kavi Nagar, Ghaziabad 201 002 UP, India.

2077. *World Grain*. 2010. ADM building large processing plant in Paraguay. 28(9):20. Sept.

• **Summary:** “Villeta, Paraguay—Archer Daniels Midland Company (ADM) announced Aug. 3 that it will increase its South American oilseed crush capacity by more than 25% with the construction of a major new soybean plant in Paraguay.

“The new plant, with an anticipated daily crush capacity of 3,300 tonnes, will be located adjacent to an ADM fertilizer-blending plant in Villeta, near the capital city of Asuncion, and will benefit from the proximity to a nearby port facility on the Paraguay River...”

A map shows the location of Villeta in relation to

Paraguay, Argentina, and nearby rivers.

2078. Archer Daniels Midland Co. 2010. Annual report: Letter to shareholders & form 10-K. P.O. Box 1470, Decatur, IL 62525. [3] + 96 p. Oct. 28 cm.

• **Summary:** On page 38 is “Consolidated statements of earnings.” Net sales and other operating income for 2010 (year ended June 30) were \$61,682 million, down 10.9% from 2009. Net earnings including noncontrolling interests for 2010 were \$1,919 million, up 11.4% from 2009.

Accompanying the annual report is a “Notice of Annual Meeting” (54 p.). Patricia A. Woertz, the Chairman, CEO, and President, received total compensation in 2010 of \$11.4 million, and including a salary of \$1.3 million and a bonus of \$2.56 million. Address: Decatur, Illinois.

2079. Burcon NutraScience Corporation. 2010. Burcon and ADM enter into Clarisoy letter of intent (News release). Vancouver, British Columbia. 1 p. Nov. 15.

• **Summary:** “Burcon NutraScience Corporation (TSX-BU) (‘Burcon’) announced today that it has signed a non-binding letter of intent (the ‘Letter of Intent’) with Archer Daniels Midland Company (‘ADM’) which details the intention of the two parties to enter into a license agreement pursuant to which Burcon will license (the ‘License’) its Clarisoy technology to ADM on an exclusive basis to produce, market and sell Clarisoy soy protein isolates (‘Clarisoy’ or the ‘Products’) world-wide (the ‘Definitive Agreement’).”

“Clarisoy is a unique soy protein isolate that is 100% soluble, transparent and low in viscosity in acidic beverages. The use of Clarisoy allows for the production of transparent protein fortified beverages such as juices, soft drinks and sport drinks in the low pH range, down to pH 2.5. Clarisoy is also heat stable in acidic beverages, allowing thermal processing, including the ability to hot-fill with no loss in clarity or change in viscosity. Clarisoy soy protein isolate does not have the ‘beany’ taste typically associated with soy protein, opening up significant opportunities in the existing global soy protein market.”

2080. Shurtleff, William. 2010. Re: Work of the American Soybean Association to support or promote soyfoods or soy protein ingredients. Letter (e-mail) to Hervé Berbille, Paris, France, Dec. 6. 1 p.

• **Summary:** “In the early days, certain high-up people in the ASA told me that they strongly disliked what I was writing, and doing, and saying. They even did a few things to try to hinder my work. That was in the mid-1970s. But over the years that has changed quite a bit, largely because of women who hold high positions in ASA’s state soybean boards, who are interested in food, cooking, soyfoods and the potential of soy to do more to relieve hunger and malnutrition.

“The big change came in 1999 when the U.S. Food and Drug Administration issued a health claim for soy protein.

This created huge interest in soyfoods in the USA and many new products, by both very large and very small companies. ASA proudly joined the crowd and really began to support soyfoods as one of its 'new' products.

"Another major change came in early 2001 when ASA created WISHH—the World Initiative for Soy in Human Health. This organization, and its outstanding, deeply-devoted head, Jim Hershey, are now taking soyfoods to the four corners of the world, promoting soymilk, tofu, cottage industries—as well as TVP, isolates and concentrates. I applaud their work.

"I could give you many examples of the things that ASA is now doing that are very favorable and helpful for soyfoods. They sponsor conferences, publish newsletters, conduct market surveys on attitudes towards soy, sponsor fairs and cooking contests, etc.

"Today, I cannot think of a single person in ASA with whom I have a bad or negative or uncomfortable relationship. They either respect my work and my position and simply disagree with it, or they positively like what I am doing and have been doing without stop since Oct. 1972 when I began devoting all my working time to teaching people worldwide about soyfoods.

"ASA is basically in the business of selling vegetable oil and meat. Developing countries (such as India and China) desire more of these two commodities, but in the developed countries they are steadily becoming less popular. Increasingly people want to reduce their consumption of all fats and of meat. So ASA finds itself with a somewhat unclear mission. Nevertheless, in both India and China, ASA is very actively promoting soyfoods and domestic utilization of soy protein.

"This is my analysis of the situation as it now stands. I think ASA is doing a great deal to help the cause of soyfoods. They must flow with the great tides of history—or be left behind. Fortunately they are the keepers of a truly remarkably crop with an ancient, illustrious history—the soybean!" Address: Founder and Director, Soyinfo Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

2081. Soyatech, LLC. 2010. *Soya & Oilseed Bluebook 2011: The annual directory of the world oilseed industry*. Bar Harbor, Maine: Soyatech. 348 p. Dec. Comprehensive index. Advertiser index. Statistical conversions. 28 cm.

• **Summary:** This is the 5th year in a row that the *Bluebook* (a \$95 value) has been sent free of charge to qualified industry members. On the cover are six color photos, and a black and white photo of a farmer leaning against a huge rubber tire that is almost as tall as he is.

This edition of the *Bluebook* contains 4 fewer pages than it did last year. The oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed, hempseed, jatropha, linseed, palm, peanut, rapeseed,

safflower, soya, sunflowerseed—the same as last year.

On the inside front cover is a color ad from Natural Products Inc. (Grinnell, Iowa), makers of innovative ingredients for bakery, soymilk and tofu. On the first page is a full page color ad from SunOpta, processors of identity preserved, natural and organic soy products, including whole soybeans, soymilk, soy flours, edamame, oils and more.

On the back cover is a full page color ad from ADM titled "We see potential" which shows a growing soybean plant with pods and leaves. A table shows the many products that can be made from soybeans.

Chris Erickson is CEO. Mark Dineen is president. Keri Hayes is publisher and operations director. In the Foreword, Joe Jordan (General manager and content director) leads with a question: "What could possibly have increased sales by 1274% between 2008 and 2010? The e-Book." He appears to be talking about the entire e-book industry in the USA or perhaps even worldwide. He then writes about Amazon's Kindle and hints that the printed and bound *Bluebook* may soon be available in digital form only. "Sure the *Bluebook* is changing. It always has." Address: P.O. Box 1307, 19 Clark Point Rd., Suite 112, Southwest Harbor, Maine 04679. Phone: 207.244.9544.

2082. Hackett, Jolinda; Bull, Lorena Novak. 2010. *The everything vegan cookbook: 300 recipes for any occasion!* Avon, Massachusetts: Adams Media. x + 294 p. Index. 24 x 21 cm.

• **Summary:** The book begins: "Dear Reader: When I decided to give up eggs and dairy, I asked every vegan I knew for their advice. One sentiment always stood out: 'Learn to cook.'"

Chapter 11, titled "Tofu" (p. 219-42) contains 26 tofu recipes of great variety and creativity. Chapter 12, "Seitan, TVP, and tempeh" (p. 243-65) contains 23 recipes, including homemade seitan.

Other soy related recipes: Vegan mayonnaise (with "1 12-ounce block silken tofu," p. 23). Vegan "pigs" in a blanket (with vegan hot dogs, p. 24). Vegan tzatziki (with soy yogurt, p. 30). Chili masala tofu scramble (p. 38). Quick tofu breakfast burrito (p. 42). Strawberry protein smoothie (with silken tofu, p. 43). Granola breakfast parfait (with soy yogurt, p. 46). Baked "sausage" and mushroom frittata (with vegetarian sausage or "beef" crumbles, p. 53). Creamy miso sesame dressing (p. 61). Tempeh dill "chicken" salad (p. 64). Edamame salad (p. 73). Winter seitan stew (p. 88). Saucy Chinese vegetables with seitan or tempeh (p. 105). Barley pilaf with edamame and roasted red peppers (p. 185). Cheesy macaroni and "hamburger" casserole (with veggie burgers, p. 210). TVP taco "meat" (taco filling, p. 250). Homemade baked seitan (p. 251).

Many other recipes call for soy milk or soy cream. Jolinda Hackett has been a vegetarian for nearly 20 years and a "plant-based vegan" for nearly ten. Address: 1. Santa

Barbara, California; 2. RD [Registered Dietitian], Riverside, California.

2083. Nishimura, Mayumi. 2010. *Mayumi's kitchen: Macrobiotic cooking for body and soul*. Tokyo, New York: Kodansha International. 157 p. Illust. (mainly color). Index. 26 cm. [15 ref]

• **Summary:** This is Mayumi's first English-language book. Madonna (of worldwide musical fame) wrote her a letter that appears in this book (p. 7): "Dear Mayumi, Congratulations on your fabulous book!... Not only are you the best chef in the world, you are part of our family, and we thank you for your love and warmth.

"In the seven years you lived with us and cooked for us, your amazing food helped me to be a happier, healthier person, balanced in body and mind. I feel better than I did 20 years ago. I am very grateful to you for this."

The index of this stylish book contains 24 entries for tofu (some in the chapter titled "Protein dishes"—p. 97-104), 20 for miso, 14 for seitan, and 11 for tempeh. How nice to find a Japanese cookbook that calls for the use of brown rice (basic recipe, p. 67).

The centerpiece of Mayumi's book is her 10-day detox diet.

Also contains specific recipes for: Nabe (with "2 pieces abura-age {deep-fried tofu skins}, halved or cut open on one side to form pouches," p. 67). Soybean and millet croquettes with beet sauce (with "15 oz {425 gm} canned soybeans, drained," p. 84). Seitan pot stickers (with seitan and tofu, p. 113). Smoked tofu salad (with "7 oz {200 gm} firm tofu," p. 104). Black soybean tea (p. 113).

The Glossary (p. 140-49) includes entries for: abura-age, adzuki beans, brown rice, brown rice mochi, edamame, hijiki, kombu, koyadofu, kuzu, mirin, miso, nori, rice milk, rice syrup, seitan, sesame oil, shiso, shoyu (incl. soy sauce and tamari), soba, soy meat nuggets (TVP), soymilk, tahini, tempeh, tofu, umeboshi plum, umeboshi plum paste, wakame, wasabi, whole-wheat flour.

About the author (inside rear dust jacket): "Mayumi Nishimura was born on the small island of Shinojima in Aichi Prefecture [in Mikawa Bay Quasi-National Park]. In 1982 she moved to the U.S. and began studying macrobiotics under Michio Kushi—the leading authority in the field—at the Kushi Institute. Later she worked at the school as head cooking instructor. In 2001 Mayumi became Madonna's private macrobiotic chef, joining her on her Drowned World Tour. Between 2001 and 2008 she cooked for the superstar full-time. Currently Mayumi travels between Japan, where she writes and lectures on macrobiotics, and the U.S." She has written four books published in Japanese. A large color photo of Mayumi, standing, holding a dish of food, appears on the front dust jacket.

The book is dedicated to Mayumi's children, Lisa and Norihiko, to her parents, and to Michio Kushi and his wife,

Midori.

2084. Schneider, Mindi. 2011. *Feeding China's pigs: implications for the environment, China's smallholder farmers and food security*. <https://www.iatp.org/documents/feeding-china%E2%80%99s-pigs-implications-for-the-environment-china%E2%80%99s-smallholder-farmers-and-food> 6 p. May 17.

• **Summary:** "Executive summary: Starting in 1979, pork became the most produced and consumed meat in the world. The reason for its ascent to the top of the global meat heap is simple: China. In 2010 alone, farmers and companies in China produced more than 50 million metric tons of pork, virtually all of which was sold and consumed domestically. This Chinese pork boom, which today accounts for half of all the pork in the world, is the result of a set of policies and trade agreements that liberalized and industrialized Chinese agriculture and enabled enormous production increases.

"In the quest to feed 21 percent of the world's population on nine percent of its arable land, Chinese central authorities prioritize ensuring a steady supply of low-priced pork as an important component of food security (China maintains a strategic pork reserve, the only one of its kind in the world)..."

"Soybean imports are keeping the swine industry in China afloat. In order to overcome the limitations of domestic production for feeding millions of pigs, authorities enacted a series of measures to liberalize China's soy trade, including those required by World Trade Organization (WTO) accession protocols, starting in the early 1990s. Imports quickly overtook both soy exports and domestic production, and today, China is the world's leading soybean importer. In 2010, more than 50 million metric tons of soybeans came into China, mostly from the United States and Brazil. These imported beans accounted for 73 percent of soy consumption in China, and were used exclusively in the production of soybean meal for livestock feed and soy oil for cooking (meal and oil are coproducts in the soy crushing process). In stark contrast to the pork industry, which a handful of domestic companies dominate, transnational agribusiness firms including Archer Daniels Midland, Bunge, Cargill, Louis Dreyfus (together, ABCD) and Wilmar own about 70 percent of the soybean crushing industry in China. In recent years, China has enacted measures to cool the dominance of foreign firms in support of domestic operations. Whether or not these moves will be effective remains to be seen.

"Soy is particularly important in commercial pig feed mixes, but for smallholder and specialized household farmers, corn is the most used feedstuff..." Address: Minneapolis.

2085. Baker Perkins Historical Society. 2011. *The history of British Arkady* (Website printout—part). [www.bphs.net/](http://www.bphs.net/)

GroupFacilities/B/BritishArcady.htm Retrieved July 24.

• **Summary:** “Our origins: Arkady’s origins go back to The Ward Baking Co. (Est. 1849), New York, USA.

“The Ward Baking Co. was the first to establish a Baking Research Fellowship at Mellon Institute, Pittsburgh, Pennsylvania, under the direction of Dr Robert Kennedy Duncan. The institute was set up to establish why bread tasted different in every town. The institute found that mineral salt contents in the local waters were to blame.

“Dr. Duncan patented a mixture of these minerals so that bread making could be improved and standardised by adding this mixture to the water in the process. Dr Duncan died shortly before the release of the product and it was named in his honour. RKD (Robert Kennedy Duncan)—Arkady.

1921—“Some experiments, carried out at Willesden by Hinma Baker, son of W. King Baker, resulted in the discovery of a combination of chemicals that enhanced the action of yeast in bread. To market this ‘bread improver,’ the British Arkady Company Ltd. was formed, and the firm [Baker Perkins] retained a financial interest in it until the time came when the directors decided that its products were outside the traditional range, and they sold the holding to the Ward Baking Company of America” (Source: History of Baker Perkins, by Augustus Muir).

“1921—Arkady yeast food was manufactured in Willesden, London

“1923—Baker Perkins annual reports begin to mention British Arkady. “The British Arkady Company Ltd. in which your company has a substantial holding...” Adequate dividends appear to have been received from the company’s shareholding throughout.

“1923—Arkady products are so successful that a new factory is built in Manchester.

“1925—British Arkady Co. was established to market the Arkady product in the UK. Set up in Old Trafford Manchester.

1935—British Arkady Co. “extended its works.”

“1936—A new soya bean flour mill was put into operation at the Old Trafford site. Made a variety of soy based products including regular and enzyme active full fat soya flour (Hi-Soy and Do Soy), Arkasoy defatted soy flour and Arkady defatted grits. At this stage the whole soy flour was made by toasting and grinding.

“1936-1983: British Arkady Co. market soya products from the Arkady soya mill amongst other activities.

1953—Baker Perkins’ shares are finally disposed of [to Ward Baking Co.?] for a sum “which exceeded the cost of the company by £113,338.”

“1983: Alfred C. Toepfer International (of whom ADM had just bought a significant shareholding) was looking to establish an office in London to trade animal feedstuffs. British Arkady Co. already had a skeletal trading desk and an established customer base. Toepfer bought out the feedstuffs division of British Arkady Co (then dormant)

to become Arkady Feed (UK) Ltd. Offices were moved to Harrow [northwest London] to trade animal feedstuffs with the backing of Toepfer. Their trading record and contacts, combined with expertise in procuring raw materials from origin made for a good partnership. Initial strengths were products from Asia and the Americas (North and South) but today it spans many products from all over the globe.” Address: England.

2086. Archer Daniels Midland Co. 2011. Annual report: Letter to shareholders & form 10-K. P.O. Box 1470, Decatur, IL 62525. [3] + 98 p. Oct. 28 cm.

• **Summary:** On page 41 is “Consolidated statements of earnings.” Net sales and other operating income for 2011 (year ended June 30) were \$80,676 million, up 30.8% from 2010. Net earnings including noncontrolling interests for 2011 were \$2,018 million, up 5.2% from 2010.

Accompanying the annual report is a “Notice of Annual Meeting” (62 p.). Address: Decatur, Illinois.

2087. Giblin, Karen; Seibel, Mache. 2011. Eat to defeat menopause: The essential nutrition guide for a healthy midlife—with more than 130 recipes. Cambridge, Massachusetts: Da Capo Press. xviii + 237 p. Foreword by Dean Ornish, M.D. Illust. Index. 23 cm. [26 ref]

• **Summary:** An excellent book for the lay reader by a woman and a man with top credentials in the field. Includes 130 recipes. On page 3 is an “Ode to Soy and Hot Flashes,” by Mache Seibel, M.D.; it says that soyfoods reduce hot flashes and allow women to sleep at night.

Chapter 4 (p. 23-28) is “Understanding soy foods: The perfect food for menopause.” Its contents: Introduction. Soybeans and foods made directly from them (gives a basic description of each): Soybeans (incl. edamame, dry soybeans, canned soybeans), soy flour, soy powder (very similar to soy flour except the soybeans are cooked before they are ground), soy protein isolates, textured vegetable protein (TVP), soy grits, soy sprouts. Soy milk and products made from it: Soy milk, okara, yuba, soy cheese, soy yogurt, tofu. Fermented forms of soy: Tempeh, natto, miso, soy sauce.

Most of these soyfoods are used in the recipes in this book. Tofu is used the most frequently.

Dr. Ornish’s remarkable Foreword begins: “Many people tend to think of breakthroughs in medicine as a new drug, laser, or high-tech surgical procedure. They often have a hard time believing that the simple choices we make in our lifestyle—what we eat, how we respond to stress, whether or not we smoke, how much exercise we get, and the quality of our relationships and social support—can be as powerful as drugs and surgery, but they often are. Often, even better.

“For more than thirty years, I have directed a series of studies showing what a powerful difference changes in diet and lifestyle can make. My colleagues and I at the nonprofit

Preventive Medicine Research Institute showed, for the first time, that many diseases, including heart disease, prostate cancer, diabetes, and hypertension, are often reversible, and thus largely preventable.

“We used high-tech, state-of-the-art measures to prove the power of simple, low-tech, and low-cost interventions. We showed that integrative medicine approaches may stop or even reverse the progression of coronary heart disease, diabetes, hypertension, obesity, hypercholesterolemia, and other chronic conditions. We also published the first randomized controlled trial showing that these lifestyle changes may slow, stop, or even reverse the progression of prostate cancer, and may affect breast cancer as well.

“Our latest research shows that changing lifestyle changes our genes in only three months—turning on hundreds of genes that prevent disease and turning off genes and oncogenes associated with breast cancer and prostate cancer, as well as genes that cause heart disease, oxidative stress, and inflammation. We also found that these lifestyle changes increase telomerase, the enzyme that lengthens telomeres, the ends of our chromosomes that control how long we live. Even drugs have not been shown to do this.” Address: 1. President and founder of the Red Hot Mamas, Bridgewater, New Jersey; 2. M.D., Prof. of Obstetrics and Gynecology and Director of the Complicated Menopause Program, Univ. of Massachusetts Medical School. He lives in Boston, MA.

2088. Jamieson, Alexandra. 2011. *Vegan cooking for dummies*. Hoboken, New Jersey: Wiley Publishing, Inc. xx + 364 p. Illust. (some color). Index. 24 cm.

• **Summary:** A fun, well written, and very informative book. Contains more than 160 healthy vegan recipes. The index contains 22 entries for tofu, 14 for tempeh, 11 for soy foods, 5 for seitan, 3 for edamame, 2 each for milk replacements (soy milk), miso, soy sauce, soy yogurt, and 1 for TVP (textured vegetable protein).

Also mentions macrobiotics, mochi, raw foods diet, sea vegetables, sesame oil, sesame seeds, etc. Address: Professionally trained vegan chef and board certified holistic health counselor (CHHC), and member American Assoc. of Drugless Practitioners (AADP), New York City.

2089. Mangels, Reed; Messina, Virginia; Messina, Mark. 2011. *The dietitian's guide to vegetarian diets: Issues and applications*. 3rd ed. Sudbury, Massachusetts: Jones & Bartlett Learning. xi + 596 p. Illust. Index. 23 cm. 1st ed. 1996. 2nd ed. 2004. [342 soy ref]

• **Summary:** Chapter 9, “Soyfoods” (p. 249-89) is excellent. Its contents: Introduction. Isoflavones: Isoflavone content of soyfoods, isoflavone absorption and metabolism. physiologic properties of isoflavones. Asian soy intake. Nutritional composition of soybeans and soyfoods: Protein, fat, carbohydrate, vitamins, minerals (iron, zinc, calcium). Chronic disease prevention and treatment: Coronary heart

disease (cholesterol reduction, lipid-independent effects), cancer (breast cancer, prostate cancer), osteoporosis, alleviation of menopausal symptoms, renal function. Controversies: Soy infant formula, cognitive function, thyroid function, fertility and feminization, breast cancer patients, allergy. Intake recommendations.

Table 9-1 (p. 251-52), “Chemical and common names and molecular weights (MW) of the 12 isoflavone isomers found in soybeans” includes the following foods and USDA IDN [identification number]: Tofu: Firm, firm #2, regular, silken firm, extra firm, extra firm #2. Natto. Soymilk, Miso, Tempeh. Soybeans, raw, US food grade. Soybeans, cooked. Soybeans, raw, Japan. Soybeans, raw, Korea. Soybeans, raw, Taiwan. Soybeans, green, cooked. Soybean curd, fermented. Soymilk skin (foo jook / yuba, cooked). Soymilk skin (foo jook / yuba, raw). Isolated soy protein. Soy protein concentrate: Water washed, alcohol washed. Soyflour: Full fat, defatted.

The Glossary of vegetarian foods (p. 447+) includes: Soyfoods: Edamame, soybeans, soy flour, soymilk, soy nuts, tempeh, textured vegetable protein (TVP, a brand name), tofu. Meat analogs: Commercial meat substitutes, seitan. Milks and dairy analogs: Nondairy cheese, nondairy frozen desserts, nondairy milks, sour cream substitute, yogurt. Address: 1. PhD, RD, LDN, The Vegetarian Resource Group, Maryland; Univ. of Massachusetts, Amherst, Mass.; 2-3. Nutrition Matters, Port Townsend, Washington; Loma Linda Univ., Loma Linda, California.

2090. Norris, Jack; Messina, Virginia. 2011. *Vegan for life: everything you need to know to be healthy and fit on a plant-based diet*. Cambridge, Massachusetts: Da Capo Press. xix + 283 p. 23 cm. Index. [219 ref]

• **Summary:** Perhaps the single best book on the subject. Very well written by two experts in the field, concise, and carefully documented.

“The practical companion to *Eating Animals*: a definitive nutrition guide for vegans, including everything from guidelines for making a healthy transition to a vegan diet to kickstart plans, nutrient-dense menus and essential information hot-button issues like soy, protein, and B vitamins”- Provided by publisher.

Contents: Introduction: Going vegan for life. 1. Understanding vegan nutrient needs. 2. Protein from plants. 3. Vitamin B-12: The gorilla in the room. 4. Calcium, vitamin D, and bone health. 5. Fats: Making the best choices. 6. Iron, zinc, iodine, and vitamin A: Maximizing vegan sources. 7. The vegan food guide. 8. Making the transition to a vegan diet. 9. A healthy start: Vegan diets in pregnancy and breast-feeding. 10. Raising vegan children and teens. 11. Vegan diets for people over fifty. 12. Plant food advantages: Health benefits of a vegan diet. 13. Managing weight, heart disease, and diabetes. 14. Sports nutrition. 15. Is it safe to eat soy?: Introduction, soy nutrition, soy isoflavones, soy and

health (heart disease, soy and bone health, hot flashes, breast cancer, prostate cancer, cognitive function, thyroid function, reproductive health and feminization), how much and what kind of soy to eat. Table: Isoflavone, protein, and calorie content of soyfoods. 26. Why vegan? Vegan resources. A quick guide to cooking grains, beans, and vegetables. Metric conversion chart. Acknowledgments.

In Chapter 8, “Making the transition to a vegan diet,” a section titled “Soyfoods primer” has the following contents: Introduction, soybeans, edamame, soynuts, soymilk, tofu, okara. Fermented soyfoods: Tempeh, miso, natto. Western soyfoods: Textured vegetable protein (TVP®, made from defatted soy flour), isolated soy protein.

Concerning soyfoods throughout the book: The word tofu is mentioned on 52 pages in this book, soymilk on 47 pages, soyfoods on 45 pages, tempeh on 33 pages, soybeans on 25 pages, isoflavones on 11 pages, miso, soynuts, and soy sauce on 10 pages each, soy flour and textured vegetable protein on 7 pages each, isolated soy protein on 4 pages, edamame, natto and TVP on 3 pages each, okara on 2 pages, and soy protein concentrate on 1 page.

Reviews: *Publishers Weekly*: “Armed with this compendium and a vegan cookbook, novices will make an easy, healthy transition to meat, egg and dairy-free meals, while practicing vegans can use it as a guide to the best food choices.”

*Reno-Gazette*: “I can’t rave enough about Jack Norris and Virginia Messina’s new book “Vegan for Life.” I’ve found myself reading this late into the night like a page-turning mystery. That’s, in part, because it dispels many of the things I’ve believed about vegan nutrition.”

Peter Singer, PhD, author of *Animal Liberation* and Professor of Bioethics, Princeton University: “Here is the book I have been waiting for! Now when people ask me all those questions about how you can be healthy without eating animal products, I can tell them that they will find the answers in *Vegan for Life*.”

Michael Greger, M.D., Director, Public Health and Animal Agriculture, HSUS [Humane Society of the United States]: “A no-nonsense guide to explode the myths, avoid the pitfalls, and maximize health on a plant-based diet. Required reading for every vegan, old or new.” Address: 1. RD, cofounder and president, Vegan Outreach, San Francisco Bay Area, California; 2. MPH, RD, Port Townsend, Washington.

2091. INTSOY. 2012. 2012 INTSOY Processing and marketing soybeans for meat, dairy, baking and snack applications, June 3-8: A unique opportunity to gain hands-on experience & practical knowledge about soybeans (Leaflet). Urbana, Illinois. 9 panels. Each panel: 28. Single sided. Black and white.

• **Summary:** This printout of an e-mail announces a 5-day course (\$1,500 for 1 attendee). The program now has 26

corporate sponsors (listed alphabetically with the logo of each): ADM, Clarkson Grain, Clextral Group, Crown, Devansoy, French [Oil Mill Machinery Co.], General Mills, Harvest Innovations, House Foods America Corporation, Illinois Soybean Association, Insta-Pro, NEI–Natural Enrichment Industries, NPI–Natural Products, Inc. ProSoya. SavInd (formerly Bar N.A.). Silk, The Solae Co., Soyatech, Soyfoods Association of North America. Soyjoy. SunOpta. United Soybean Board. USSEC. Wenger. WISHH. World Soy Foundation.

Course highlights. Who should attend? Course schedule (preliminary agenda). Sponsors. Address: National Soybean Research Lab. (NSRL), 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 244-1706.

2092. Soyatech, LLC. 2012. *Soya & Oilseed Bluebook 2012*: The annual directory of the world oilseed industry, online at [www.soyatech.com](http://www.soyatech.com). Bar Harbor, Maine: Soyatech. 332 p. Jan. Comprehensive index. Advertiser index. Statistical conversions. 28 cm.

• **Summary:** This is the 6th year in a row that the *Bluebook* (a \$95 value) has been sent free of charge to qualified industry members. On the cover is a large color photo of two cupped Caucasian hands holding yellow soybeans against background of rows of green soybean plants. Above this main large photo are six small color photos related to various other oilseeds such as sunflowers and palm oil kernels.

This edition of the *Bluebook* contains 16 fewer pages than it did last year. The oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed, hemp seed, jatropha, linseed, palm, peanut, rapeseed, safflower, soya, sunflowerseed—the same as last year.

On the inside front cover is a color ad from Omega-9 Oils. On the first page is a full page color ad from SunOpta with this title: “Can you tell the difference between a bean that’s best for soymilk versus a bean that’s best for miso? We can.” Other full-page color ads in the front are from Intertek, Loders Croklaan North America, Anderson International Corp. (expeller press), AOCS, French Oil Mill Machinery Co. and Insta-Pro International.

On the back cover is a full page color ad from Natural Products Inc. (NPI, Grinnell, Iowa), makers of innovative ingredients for soymilk and tofu to cakes and cookies. They are the makers of Scotsman’s Mill ingredients.

Chris Erickson is CEO. Mark Dineen is president. Keri Hayes is publisher and events director. In the Foreword, Joe Jordan (General manager and *Bluebook* content director) writes about how work began this year to expand the Panama Canal—“the most critical 48 miles in international trade.” Its freight-carrying capacity is scheduled to be doubled by the year 2014. Address: P.O. Box 1307, 19 Clark Point Rd., Suite 112, Southwest Harbor, Maine 04679. Phone: 207.244.9544.

2093. Boismenu, Clyde. 2012. Re: Required labeling of

soy lecithin as a potentially allergenic food since it contains traces of soy protein. Letter (e-mail) to William Shurtleff at Soyinfo Center, Feb. 24. 1 p.

• **Summary:** Clyde, who has been selling ADM soy products (including soy lecithin) for 36 years (it is his main life's work), attached to this e-mail 3 documents related to soy lecithin: (1) ADM [Archer-Daniels-Midland Co.] protein content of soy lecithin. (2) Online article concerning NOAEL level for soy protein—a review of a published article by Ballmer-Weber et al. 2007. (3) Copy of an unpublished 2005 report by Steve L. Taylor titled “Soy lecithin: An expert opinion on its potential allergenicity.”

His letter reads: “I am sure you will find these interesting. The motivation for these studies was that soy lecithin got caught up in allergen labeling by the way our politicians wrote the regulation, even though lecithin contains only trace amounts of protein (circa 100 ppm) and most of that is not allergenic. My ADM lecithin tech told me he thinks the latter is about 5 ppm in food application lecithins with maximum phosphatide content—e.g. the Yelkin Gold reference. But pan coatings and grill release agents and food extrusion die lubricants were, and are, still technically required to label their products to indicate soy allergen content, even where the use is an obvious processing aid (processing aids are broadly exempt from being required on labels).

“This regulatory hit on the industry triggered these studies. However, if I am reading them right, the fact that we now have a NOAEL value for soy protein established at a relatively high level means we can restore sanity to the entire soy industry. Very exciting.

“FYI—even though the regs have for about 10 years required allergen on the labels of all these minor use products, the FDA has fairly openly NOT enforced them in cases where they recognize there is insignificant risk to consumers. For example, in 10 years there are no recorded instances of allergic reaction to soy in lecithin of pan release coatings (bakery use).

“Thanks for your help.—Clyde”

“P.S. Besides ADM soy protein products, I have developed with a Chinese partner the World's Most Perfect Isolated Soy Protein for dry powder protein beverage mixes and neutral pH ready-to-drink protein beverages.

“And, just yesterday I began the introduction of a de-estrogenated soy protein concentrate to try to win back the bodybuilding trade who left us on a dead run in favor of whey proteins when the phytoestrogen issue first blew up. But now there is so much demand for whey proteins that they are assuming their correct place in the economic matrix, to wit, at very high prices—about double our highest priced purified soy proteins. So the time is right for this...”  
Address: LookAlive / Basic Foods Co., P.O. Box 240070, Los Angeles, California 90024. Phone: 310-473-0719.

2094. CSM UK. 2012. Overview and update of history of British Arkady (Web article). [http://www.csmglobal.com/Countries/United\\_Kingdom/English/Our-Heritage.aspx](http://www.csmglobal.com/Countries/United_Kingdom/English/Our-Heritage.aspx). Printed May 8.

• **Summary:** “1911—The Ward Baking Co. of New York who owned a chain of bakeries throughout the United States couldn't understand why the bread they made was different in every town. The Mellon Institute of Industrial Research was sponsored by Ward to identify the reason why.

“This work revealed that the mineral salt content of the local waters was causing the variation and by creating a mixture of these minerals an improvement and standardisation of the bread could be achieved. The Mellon's director of research at the time was Dr Robert Kennedy Duncan—RKD—Arkady, and so a name and product was born.

“1921—In the UK Arkady yeast food began to be manufactured in Willesden, London.

“1923—Arkady products had become so successful that an entirely new factory was built at Manchester. Production was doubled in 1929 and again in 1936.

“1925—British Arkady Co. moved to Old Trafford, Manchester, marketing a single product, Arkady.

“1967—British Arkady acquired a substantial interest in the Tweedy group, famous for its high-speed mixer developed for the Chorleywood Bread Process.

“1972-1995—British Arkady, now part of ADM, expands its markets across the UK and Ireland and into 21 other countries with a broader range of products including bread mixes, cake, pudding and pastry mixes.

“1995—British Arkady sold to Unilever, joining the Bakery Ingredients division to become Arkady Craigmillar in 1996. Merger of Arkady and Craigmillar. Started cookie production.

“2004—Arkady Craigmillar & Read-Bake are renamed as BakeMark UK but the names Arkady, Craigmillar and Read-Bake remain as the three key brands. BakeMark UK operates from three sites: Manchester, Wirral & Milton Keynes.”

“2012—CSM has 9,700 employees, serving customers in 28 countries all over the world, generating annual sales of nearly 3 billion euros. CSM is listed on NYSE Euronext Amsterdam.”

Note: We are never told what “CSM” stands for, or when they entered the history of British Arkady, or how. Their website (Oct. 2014) is [www.bakemark.co.uk](http://www.bakemark.co.uk).

2095. Shurtleff, William. 2012. The global value chain for soybeans (Editorial). *SoyaScan Notes*. June 12.

• **Summary:** “The value chain is a concept from business management that was first described and popularized by Michael Porter in his 1985 best-seller, *Competitive Advantage: Creating and Sustaining Superior Performance*.” The value chain concept can be applied at various levels of activity, such as a worldwide level, an industry-wide level in

a particular country, or at the level of a particular company operating in a specific industry. The key links in a value chain are those points at which value is added to products. Quantitative data are necessary to analyze the amount of value added (Source: Wikipedia at value chain, June 2012).

In the global soybean chain we have identified four major links or points: (1) Soybean production: This is highly fragmented, with hundreds of thousands of farmers, both large and small, growing soybeans. However some of those farmers are organized into groups, often cooperatives (such as AGP in the United States).

(2) Crushing and other soybean processing. Crushing soybeans to make crude soy oil and defatted soybean meal is the main way that soybeans are processed. However in East Asia, whole soybeans are also processed into human foods, such as tofu, miso, soymilk, tempeh, etc. Large soybean crushers which operate worldwide include Cargill, ADM, Bunge, AGP, Sanbra (Brazil), etc. Defatted soybean meal is further processed to make animal feeds, soy sauce, etc. Crude soy oil is further refined to make edible vegetable oil biodiesel, etc.

(3) Transportation / distribution of soybeans and/or soybean products. Major firms (which are vertically integrated) include Cargill, ADM, Bunge, Dreyfus, the Noble Group of Hong Kong, etc.

(4) End use / retail: The main end uses for soybeans are: From whole soybeans—human foods, often divided into four types: (a) Traditional East Asian fermented soyfoods, such as miso, tempeh, natto and its relatives. The largest makers are miso makers and natto makers in Japan. (b) Traditional East Asian non-fermented soyfoods, such as tofu, soymilk, edamame, roasted soy flour, yuba. The largest makers are tofu makers and soymilk makers in Japan, Hong Kong, and USA. From defatted soybean meal: animal feeds, soy sauce, modern Western soy protein ingredients: textured soy flour / textured vegetable protein (TVP in ad ADM trademark), soy protein concentrates, textured soy protein concentrates, soy protein isolates, and textured soy protein isolates. The largest makers of animal feeds are the same as the major soybean crushers: Cargill, ADM, Bunge, etc. From crude soybean oil: Refined soybean oil and biodiesel. The largest refiners of soybean oil are the major soybean crushers. From refined soybean oil: Edible vegetable oil, salad dressings, margarine, etc. Address: Founder and owner, Soyinfo Center, Lafayette, California. Phone: 925-283-2991.

2096. Saunders, David. 2012. What ever happened to the Soy Protein Council? (Interview). *SoyaScan Notes*. Dec. 13. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** The Soy Protein Council (established in 1971 as the Food Protein Council) dissolved in the first quarter of 2003 after one of the three member companies stopped paying their dues / management fees it owed. The three member companies at the start of 2006 were ADM, Cargill,

and Central Soya (which later became Solait). Hauck & Associates had managed the company from Sept. 1975 until it dissolved. He has no articles about the dissolution; all of their records are gone. The same thing happened to the auto industry when one of its three members left.

Note: Hauck & Associates is an Association Management Company (AMC), established in 1974, with headquarters at Headquarters: 1025 Thomas Jefferson Street, NW, Suite 500 East, Washington, DC 20007. Address: Former President, Soy Protein Council, Hauck & Associates, Inc., Washington, DC. Phone: 202-452-8100.

2097. Kelly, Carla. 2012. Quick and easy vegan slow cooking: more than 150 tasty, nourishing recipes that practically make themselves. New York, NY: The Experiment. xii + 275 p. Illust. (color photos). Index. 24 cm.

• **Summary:** Tofu is mentioned on 29 pages in this book, seitan on 29 pages, soy sauce on 28 pages, soymilk on 23 pages, miso on 18 pages, tempeh on 17 pages, fermented black soybeans on 1 page (p. 114), and cooked black soybeans on 1 page (p. 141).

The section on “Soy foods” (p. 26-29) has subsections on: Regular (water-packed, Chinese-style) tofu. Silken (vacuum packed, Japanese-style) tofu, smoked tofu, tempeh, soy curls (or TVP chunks), soy sauce, miso paste, soy creamer. Also: Seitan and vital wheat gluten, Marmite.

What are soy curls? Defatted soy flour extruded in the shape of curls. “I know not everyone has access to soy curls, but they are available online so try to get them if you can. They cook so wonderfully tender and absorb flavor so well. They do not need to be reconstituted prior to use because of the long cooking time. My first preference for a substitute is TVP chunks, then extra-firm tofu or seitan cut into ½-inch cubes.”

Special soy recipes: Black bean beans (“I have a container of black bean sauce, a pungent paste made from fermented black soybeans, in my fridge that I often use for sautéing tofu or green beans,” p. 114). Soy curl and soybean chili (with “1 cup soy curls” and “Two 15-ounce cans cooked black soybeans, drained and rinsed,” p. 141). Address: British Columbia, Canada (born in New Zealand).

2098. Snyder, Amy; Snyder, Justin. 2012. The everything vegan slow cooker cookbook. Avon, Massachusetts: Adams Media. 304 p. Illust. (color photos). Index. 26 cm.

• **Summary:** Contains individual chapters on tofu, seitan, and tempeh. Tofu is mentioned on 29 pages, tempeh on 25 pages, edamame on 2 pages, and textured vegetable protein (TVP) on one page. And seitan on 30 pages. Address: Atlanta, Georgia.

2099. Soyatech, LLC. 2013. Soya & Oilseed Bluebook 2013: The annual directory of the world oilseed industry, online at www.soyatech.com. Bar Harbor, Maine: Soyatech. 336

p. Jan. Comprehensive index. Advertiser index. Statistical conversions. 28 cm.

• **Summary:** This is the 7th year in a row that the *Bluebook* (a \$95 value) has been sent free of charge to qualified industry members. On the front cover is a large round color photo collage of four of the major oilseeds, plus harvesting with a combine and shipping in containers.

The 14 oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed, hemp seed, jatropha, linseed, palm, peanut, rapeseed, safflower, soya, sunflowerseed—the same as last year.

On the inside front cover is a color ad for Omega-9 Oils (from Dow Agrosiences). Other full-page ads related to soyfoods are: ADM, AOCS, French Oil Mill Machinery Co. and Insta-Pro International.

On the back cover is a full page color ad from Natural Products Inc. (NPI, Grinnell, Iowa), makers of innovative ingredients for soymilk and tofu to cakes and cookies. They are the makers of Scotsman's Mill ingredients.

Chris Erickson is CEO. Mark Dineen is president. Keri Hayes is publisher and operations director. Address: P.O. Box 1307, 19 Clark Point Rd., Suite 112, Southwest Harbor, Maine 04679. Phone: 207.244.9544.

2100. Guardino, Lorraine. 2013. How Soy City Foods (in Toronto, Ontario, Canada) was transformed into Sol Cuisine by Dror Balshine (Interview). *SoyaScan Notes*. Feb. 28. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** During the 1970s Lorraine was part of a meditation group—and doing other “weird” things; she was not on the scene until 1983, but she is familiar with the early history of Soy City Foods and Sol Cuisine.

In 1980 Soy City Foods started as a tofu company (at 2847 Dundas Street West), in order to supply their very successful restaurant, named The Vegetarian Restaurant, which had opened in 1976 at 542 Yonge Street by Wellesly; that was their first little company. It was one of the first vegetarian restaurants in Toronto; Annapurna was the other. However, the restaurant simply couldn't find a source of good tofu.

The Vegetarian Restaurant was established by Golden Age, Inc., a group of 28-30 like-minded young friends. Each person invested about \$1,000 to get it started. Being young, everyone had a lot of energy. The Vegetarian Restaurant was very profitable—initially—and that money enabled it to start Soy City Foods. It was worker owned—a cooperative. The only original restaurant manager Lorraine knows of and can confirm was Paul Dunlop.

Pat Guardino was hired to build the tofu shop because he was a welder. Pat went down to New Hampshire and apprenticed / studied with Jay and Pat Gibbons, owners and operators of Crystal Springs Tofu Shop (renamed North Country Soyfoods by summer 1980) in Bethlehem, New Hampshire; during the week he was there, he learned the

basics of making tofu and tofu equipment.

The goal of Soy City Foods shop was to bring Toronto a “clean protein.” The main owners of the shop ended up being Pat Guardino & Paul Whitehead. However everyone who worked at the Soy City Foods owned it, and all the capital came from these workers.

Also in 1980 a second The Vegetarian Restaurant was opened on Dundonald Street (which is just off of Wellesly Street) along side of Soy City Foods. The owners / workers called the new restaurant the “West End” and the original one the “Downtown.” Both restaurants operated together for about 15 years—from 1980 until about 1995 or 1996, when the Downtown closed, because of dwindling profits and aging staff. When this restaurant had opened at its original downtown location in the mid-1970s there were lots of profits, because the restaurant was very unique. But as the years went on, almost every restaurant in Toronto began to offer good vegetarian food. So the uniqueness dwindled quite a bit as vegetarian food became more widely available. Moreover, leasing and renting rates skyrocketed in the downtown Toronto area. Soy City developed an excellent distribution network and several of their veggie burgers had gone into the larger grocery store chain in Ontario. They were also selling across Canada in foodservice, which ended up being Soy City's largest market. In Canada, in the university market, it was a requirement that each university provide two vegetarian options for breakfast, lunch, and dinner. That became the driver for Soy City's growth at the time. They ended up selling their tofu in bulk to the university market, and one of the contract catering companies sent their chefs to the west end Vegetarian Restaurant for a week and learned how to cook vegetarian cuisine. Soy City developed two veggie burgers for them and they chose which one they preferred—which was called the Soy City Veggie Burger and which contained both soybeans and okara. That is still sold by Sol Cuisine, but it is now called the Almond Grain Burger. Soy City made an ongoing effort to use okara in foods. “It was very difficult for all of us who worked there to see such a beautiful protein and fiber be thrown away. So our Soysage used a lot of okara, as did a falafel and the veggie burger.”

Why did Soy City Foods want to sell? The worker population was aging and they were outgrowing the very small facility as the demand for tofu and veggie burgers steadily grew. Basically the worker-owners made the decision to sell rather than to invest more money and continue on at low wages and personal sacrifice. By 2002 two-thirds of the company's sales were via foodservice. Yet total sales were just under \$1 million (Canadian).

In 2002 Dror Balshine bought Soy City Foods, He was a young entrepreneur, in his early '30s. He already had a business in Toronto named Second Nature that sold veggie burgers and dry veggie burger mix. He did not have a manufacturing facility; his products were co-packed for

him. He was already dedicated to vegetarianism and he used textured soy protein concentrate in his burgers. Lorraine, who was the sales manager of Soy City Foods, already knew Dror who she often met at food shows. She called him and discussed the possibility of his buying the company. He was interested and before long he decided to buy it.

One of the first things Dror did was to change the name to Sol Cuisine. The tofu continued to be sold under the brand / banner of Soy City Foods, and it is only now that the Soy City Foods name is being phased out. This tofu began to be made with organic soybeans in about 1985 and that tradition continued under Sol Cuisine. Shortly after buying Soy City Foods, Dror moved it to Mississauga (5715 Coopers Ave., Unit 1), just west of Toronto. Shortly after this move was completed, Soy City Foods' food manufacturing plant at 2847 Dundas Street West in Toronto, was closed. They made tofu, tempeh, veggie burgers, falafel, etc. at the new, lower-rent and lower-tax location. Later, the company needed a larger facility, so in Feb. 2008 they moved to their present address at 3249 Lenworth Drive, Mississauga (about 10 minutes drive south of 5715 Coopers Ave.). All foods that Sol Cuisine now sells (except the Sol-Dog, a veggie hot dog) are made at the plant on Lenworth Drive. The Sol-Dog is sold only to foodservice. When they moved to Lenworth Drive, they became a HACCP facility and also stopped making tempeh; the cross contamination of the tempeh spores was too strong. Dror is committed to making only vegan foods and to verification by the non-GMO Project (they are very thorough) and to organic when possible. And, all but one of their products are now gluten-free.

Foods shown on a 2005 leaflet include T-Ribz (now called Organic Barbecued Ribz; made from their own tofu, sliced put in a package with their own sauce on top; sold fresh in Canada and frozen in the USA for about 18 months). Organic T-Nuggets (cubed tofu that was marinated, breaded and baked; never sold as a retail product, no longer made). Organic Sol-Ground (now the Veggie Crumble), 3 vegetarian burgers (they now make a total of 5 soy burgers in the retail market; the main ingredient is verified non-GMO TVP, made by ADM).

What was the Soyateria? It was Soy City's soy deli in Toronto that opened in April 1981. The public could come in and have a pita bread sandwich, or buy bulk tofu. There was a little menu. One popular dish was tofu, coated in Engivita nutritional yeast, then sauteed on the grill with sauteed onions and mushrooms and a sauce. The Soyateria did a lot of experimentation to learn what recipes and products people liked. They made tofu cheesecakes, tofu pumpkin pie, bulk soymilk, soft soy ice cream, etc. Lorraine began working there part time in 1983 (it was a short walk from her home) while raising a family. She left her good-paying job at the Royal Bank to work at the Soyateria! It was a lot of fun. But after 5-6 years it went out of business.

John Escavel, who is still production manager at Sol

Cuisine, started working at Soy City Foods in about 1980 or 1981. He has an excellent memory, so he is a good person to talk with about the company's history. Address: Sales Manager, Sol Cuisine, 3249 Lenworth Drive, Mississauga, ONT L4X 2G6 Canada. Phone: 905-502-8500 x 221.

2101. INTSOY. 2013. 2013 INTSOY Short Course: Processing and marketing soybeans for meat, dairy, baking and snack applications, June 2-7: A unique opportunity to gain hands-on experience & practical knowledge about soybeans (Leaflet). Urbana, Illinois. 8 panels + 1 panel insert Each panel: 23 x 15.1 cm. Front and back. Glossy color.  
 • **Summary:** Announces a 5-day course (\$1,500 for 1 attendee). The program now has 24 corporate sponsors (listed alphabetically with the logo of each): ADM, Clarkson Grain, Clextrol Group, Crown, Devansoy, French [Oil Mill Machinery Co.], Harvest Innovations, House Foods America Corporation, Illinois Soybean Association, Insta-Pro, Kays Naturals, NEI-Natural Enrichment Industries, NPI-Natural Products, Inc. ProSoya. SavInd (formerly Bar N.A.). The Solae Co., Soyatech, Soyfoods Association of North America. SunOpta. United Soybean Board. USSEC. Wenger. WISHH. World Soy Foundation.

Course highlights. Who should attend? Course schedule (preliminary agenda). Sponsors. Address: National Soybean Research Lab. (NSRL), 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 244-1706.

2102. Roth, Matthew D. 2013. Magic bean: the quests that brought soy into American farming, diet and culture. PhD thesis, Rutgers, The State University of New Jersey. iii + 530 p. Oct. 28 cm. [1002 + 1208 footnotes + 45 endnotes]

• **Summary:** Contents: Introduction: A Century of Soybeans  
 Chapter 1: Crossings: The Picture Bride: Tsuru Yamauchi. The Missionary: Harry Miller. The Plant Explorer: Frank N. Meyer.

Chapter 2: Footholds: The Agronomist: William J. Morse. The Emissary: Yamei Kin. The Missionary.

Chapter 3: Field Days: The Extension Specialist: J.C. Hackleman. The Salesman: A.E. Staley. The Agronomist.

Chapter 4: Manifold Uses: The Industrialist: Henry Ford. The Chemist: Percy Lavon Julian. The Board: Chicago Board of Trade. The Missionary.

Chapter 5: Wartime Substitute: The Picture Bride. The Nutritionists: Clive and Jeanette McCay. The Investigator: Warren Goss.

Chapter 6: Hidden Ingredient: The Congressman: William Poage. The Breeder: Edgar E. Hartwig. The Middleman: Dwayne Andreas. The Chemist.

Chapter 7: Soytopia: The Writer: Harry Harrison. The Guru: Stephen Gaskin. The Artisans: William Shurtleff and Akiko Aoyagi. The Picture Bride.

This book is a series of carefully researched, well written and well documented biographies of various men,

women and institutions that were important in introducing soybeans and soyfoods to the United States. Some of the men and women whose detailed biographies are presented here (such as William Morse, Henry Ford or Harry Miller) are well known to those interested in the history of soybeans and soyfoods in the USA; yet in each case many important and interesting new details are added to the life story of each person. Other men and women discussed here (such as Harry Harrison, William Poage, Tsuru Yamauchi or Yamei Kin) are largely unknown to soybean historians, and their inclusion in this thesis will help to ensure that they are given the place they deserve in future histories of soybeans and soyfoods in the United States.

The footnotes and bibliography are a treasure. The bibliography, containing 1,002 references, is divided into two sections: (1) Archival sources. (2) Books, chapters, articles, and webpages. Each of the seven chapters has its own series of footnotes, whose numbering starts over again with one at the beginning of each chapter, for a total of 1,208 footnotes. In addition, at the end of the bibliography is a section titled “Notes” which contains 45 numbered notes.

Why so many new bibliographic references? First, because the author did extensive archival research, much of it in archives that have not been previously examined for material on soy. Second, because in recent years many books and periodicals (including newspapers) have been scanned, digitized and made available to researchers and the general public. A search, for example, on “Yamei Kin” will produce a wealth of results in unexpected places.

Containing much new and interesting information, this thesis is not, however, a history of soybeans or soyfoods in the United States. Rather, it presents various important sections and subsections of that larger history.

Contents: Introduction: A century of soybeans.

1. Crossings: The picture bride–Tsuru Yamauchi, The missionary–Harry Miller. The plant explorer–Frank N. Meyer.

2. Footholds: The agronomist–William J. Morse, The emissary–Yamei Kin, The missionary [Harry W. Miller].

3. Field days: The extension specialist–J.C. Hackleman, The salesman–A.E. Staley, The agronomist [William Morse].

4. Manifold Uses: The industrialist–Henry Ford, The chemist–Percy Lavon Julian, The board–Chicago Board of Trade, The missionary [Harry Miller].

5. Wartime substitute: The picture bride [Tsuru Yamauchi], The nutritionists–Clive and Jeanette McCay, The investigator–Warren Goss.

6. Hidden Ingredient: The congressman–William Poage, The breeder–Edgar E. Hartwig, The middleman–Dwayne Andreas, The chemist [Percy L. Julian].

7. Soytopia: The writer–Harry Harrison, The guru–Stephen Gaskin, The artisans–William Shurtleff and Akiko Aoyagi, The picture bride [Tsuru Yamauchi].

Bibliography.

When asked about the unusual structure of the table of contents and the thesis, the author replied (7 Dec. 2015): “The short answer is that the way I structured the dissertation was probably too complicated by half. The idea was to anchor each chapter section to a person, each of whom was either important in their own right and/or was a stand-in for a larger group. Morse, of course, was both: a key figure and a representative USDA ‘agronomist.’ The titling convention was to have the specific person named the first time they appeared, but have only the generic name, such as Agronomist, appear in subsequent chapter-section names. Yamauchi, while not central in her own right, was a way to anchor sections about the Japanese-American community; hence her appearance in three chapters.” Address: Philadelphia, Pennsylvania 19123.

2103. Hymowitz, Theodore. 2013. Illinois has storied history with soybeans: From the Auckland to Lincolnland. *Illinois Field and Bean (Illinois Soybean Assoc.)*. Nov. p. 5-6. Special issue.

• **Summary:** This excellent overview of the history of the soybean in Illinois begins: “On Christmas Day in 1850, the U.S. merchant ship *Auckland* sailed from Hong Kong for San Francisco, California, carrying a shipment of sugar. About 500 miles off the coast of Japan the *Auckland* came across the *Eiriki maru*, a Japanese vessel drifting helplessly on the sea. The crew of 17 was removed from the ship and taken aboard the *Auckland*. The Japanese took aboard some of their belongings, including navigational equipment and agricultural foodstuffs.

“On March 4, 1851, the *Auckland* arrived at the port of San Francisco. The Japanese were not permitted to leave the ship and were kept in quarantine until March 16. The youngest member of the Japanese crew was a 14-year-old boy named Hizoko. Subsequently, Hizoko changed his name to Joseph Heco and was the first Japanese to become a naturalized U.S. citizen.”

Also discusses Dr. Benjamin Franklin Edwards of Alton, Illinois, John H. Lea of Alton, Osborne and Mendel (1917), Garner and Allard (1920), North Carolina, University of Illinois professors William I. Burlison (administration), J.C. Hackleman (extension) and Clyde M. Woodworth (plant breeding). Funk Bros. Seed Co., A.E. Staley Mfg. Co., ADM, Richard Bernard, wild perennial soybeans.

Includes a brief biography and portrait photo of Prof. Hymowitz. Address: Prof. Emeritus, Univ. of Illinois. Phone: 1-800-525-0177.

2104. Hackett, Jolinda. 2013. The big book of vegan recipes: more than 500 vegan recipes for healthy and flavorful meals. Avon, Massachusetts: Adams Media. 512 p. Index.

• **Summary:** Chapter 11 is Tofu (p. 381-415). Chapter 12 is Seitan and TVP [Textured soy protein] (p. 417-447). Chapter 13 is Tempeh (p. 449-470). Each is substantial, with many

recipes. Miso is mentioned on 5 pages, edamame on four pages. Soy milk on 1 page. Is your soy cheese vegan? on 1 page. Address: Santa Barbara, California.

2105. Takeuchi, Yoshiko. 2013. *Cooking with soy*. London, Sydney, Cape Town, Auckland: New Holland Publishers Pty. Ltd. 240 p. Illust. (color photos by Sherly Susan). Recipe index. 27 x 22 cm.

• **Summary:** See next page. An outstanding vegan cookbook, “dairy free, gluten-free friendly.”

Page 8: “Introduction: cooking with soy?... I love almost all foods, but I have a special passion for tofu. There might be food out there that is tastier than tofu and some people think tofu is bland and so avoid it. But tofu is a healthy food—it is low in fat and calories, has zero saturated fat, it’s cholesterol-free; rich in protein and provides bone-healthy minerals, like calcium, potassium and magnesium. The benefits of tofu are many and easy to find.

“I have a strong passion for health and place a high value on it. So I love that tofu can be so versatile and yet deliver the benefits I need for a healthy life. You can eat it plain, deep-fried, stir-fried, steamed, grilled or stewed. You can use it to make sauces, dressings and desserts. You can change the shape of it—slice it, dice it, grate it, purée it, crumb it—there are so many choices.

“Tofu and other soy products have been widely used in Asian cuisine for more than a thousand years and yet they can be used in any type of cuisine—European, Middle Eastern and South American—as you will discover in this book.”

Page 10: Research shows that soy that has not been genetically modified (GMO) or highly refined—“such as soy protein isolate (SPI) or texturised vegetable protein (TVP), which are normally made of GMO soybeans.” “I believe that as long as soybeans or soy products [soyfoods] are in a natural form and preferably organic, they will serve your health in a very positive way.” She likes meat and fish, but she is “on the path to a vegetarian/vegan diet.”

Pages 13-23: Soy family: aburaage, atsugae, edamame, kinako, miso (3 types, each made with a different type of koji), natto, okara, soymilk (made by 3 basic methods), soy sauce, tamari, tofu, tofu puffs [deep fried], tofu skins (yuba), tempeh. Types of tofu: Six types ranging from soft to very firm. Homemade tofu.

Contents (from p. 31): Recipes: Appetisers. Sides. Mains. Desserts. Glossary. Acknowledgements. Recipe index [not as useful as a real index].

Photos on the inside front dust jacket and on page 238 show the author.

“Yoshiko Takeuchi is originally from Japan and has been teaching cooking for over 16 years; having previously worked as a chef for over 11 years. She is an expert teacher of vegetarian, vegan and gluten-free cooking, as well as both traditional and modern Japanese cooking.”

2106. Soyatech, LLC. 2014. *Soya & Oilseed Bluebook 2014: The annual directory of the world oilseed industry*, online at [www.soyatech.com](http://www.soyatech.com). Bar Harbor, Maine: Soyatech. 324 p. Feb. Comprehensive index. Advertiser index. Statistical conversions. 28 cm.

• **Summary:** This is the 8th year in a row that the *Bluebook* (a \$95 value) has been sent free of charge to qualified industry members. On the front cover is a horizontal collage of four of the major oilseeds, plus a green shoot growing in front of the collage. The 12 oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed, hemp seed, jatropha, linseed, palm, peanut, rapeseed, safflower, soya, sunflowerseed—the same as last year.

The book is divided into four major sections: (1) Soybeans, oilseeds & oilseed products. (2) Equipment, supplies & services. (3) Company & organization listings. (4) Statistics & reference.

On the inside front cover is a color ad from Dow Agrosiences. Other full-page ads related to soyfoods are: AOCS, French Oil Mill Machinery Co. and Insta-Pro International.

On the back cover is a full page color ad from Natural Products Inc. (NPI, Grinnell, Iowa), makers of innovative ingredients for soymilk and tofu to cakes and cookies. They are the makers of Scotsman’s Mill ingredients.

Page 5: Chris Erickson is CEO. Mark Dineen is president. Keri Hayes is publisher and operations director. Address: P.O. Box 1307, 19 Clark Point Rd., Suite 112, Southwest Harbor, Maine 04679. Phone: 207.244.9544.

2107. NSRL. 2014. 2014 NSRL INTSOY Short Course: Processing and marketing soybeans for meat, dairy, baking and snack applications, June 1-6. 2014: A unique opportunity to gain hands-on experience & practical knowledge about soybeans (Leaflet). Urbana, Illinois. 8 panels + 1 panel insert. Each panel: 23 x 15.1 cm. Front and back. Glossy color.

• **Summary:** See page after next. Announces a 5-day course (\$1,800 for 1 attendee). The program now has 21 corporate sponsors (listed alphabetically with the logo of each): ADM, Clarkson Grain, Clextral Group, Crown, Devansoy, DuPont, Harvest Innovations, House Foods America Corporation, Illinois Soybean Association, Insta-Pro, Kays Naturals, Monsanto, NPI—Natural Products, Inc. ProSoya, Soyfoods Association of North America. SunOpta. TechnoChem, United Soybean Board. USSEC. Wenger. WISHH, World Soy Foundation.

Course highlights. Who should attend? Course schedule (preliminary agenda). Sponsors. Address: National Soybean Research Lab. (NSRL), 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 244-1706 [www.nsrll.illinois.edu](http://www.nsrll.illinois.edu).

2108. Karp, Gregory. 2014. ADM buys ingredients company Wild Flavors for about \$3 billion. *Chicago Tribune* July 7.

• **Summary:** “Wild Flavors, based in Switzerland, is ADM’s

# cooking with **SOY**



Yoshiko Takeuchi

vegan | dairy free | gluten-free friendly

**2014 NSRL INTSOY Short Course:**  
**Processing and Marketing Soybeans for Meat,  
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**opportunity**  
*to gain* **hands-on**  
**EXPERIENCE**  
**& PRACTICAL**  
*knowledge*  
*about* **1**  
**soybeans**




Accra, Ghana: ACET. 42 p. 28 cm.  
[http://www.tropicalsoybean.com/sites/default/files/The%20Soybean%20Agri-Processing%20Opportunity%20in%20Africa\\_ACET.pdf](http://www.tropicalsoybean.com/sites/default/files/The%20Soybean%20Agri-Processing%20Opportunity%20in%20Africa_ACET.pdf) [21 ref]

• **Summary:** Contents: “1. Executive Summary: Overview of the Soybean Value Chain and Africa’s Positioning, Opportunities and Challenges for Developing the African Soybean Sector, Implications and Next Steps for Policy-Makers

“2. Overview of the Soybean Value Chain: The Value Chain—From Soybean to the Final Consumer Product, The Structure of the Soybean Industry, A Review of Selected Key Players (ADM, Cargill, Bunge, Louis Dreyfus).

“3. The International Soybean Market: Soybean Production, Soybean Processing, Prices, Outlook for the Soybean Market.

“4. The African Market: The Structure of the African Market Nigeria: Africa’s Leading Soybean Producer, Zambia: a ‘Mid-Sized’ Soybean Producer and Processor, Senegal: An Example Cake Consumption Market.

“5. The Value Capture Opportunity: Challenges and Barriers, Key Opportunities for Value Capture for African Countries.

“6. Brazil: a Case Study of the Key Success Factors for Value Capture in the Soybean Industry. Background: Converting Soybean into Poultry Exports, Implications: Key Success Factors for Value Capture.

“7. Positioning of African Countries for Successful Value Capture.

“8. Considerations and Steps Required to Develop Policy:

“A—Identify and Prioritize

Opportunities for Value Capture,

“B—Identify Current Policy Bottlenecks,

“C—Develop Key Enabling Interventions,

“D—Address Potential Policy Trade-offs.

Table of 24 figures.

Pages 9-10: Archer Daniels Midland (ADM): ADM is a conglomerate headquartered in the US with interests across a broad portfolio of agriculture and agro-processing sectors, and activities including producing, procuring, transporting, storing, processing, and merchandising agricultural commodities and products. It operates more than

biggest deal ever and its first venture into the flavors market, specializes in natural ingredients.” Consumers have been showing increasing interest in foods made only of natural ingredients.

Wild Flavors was founded in Heidelberg, Germany, in 1921 as a maker of ingredients for nonalcoholic beverages.

ADM is on schedule to move its headquarters from Decatur, Illinois, to the former United Airlines building at 77 West Wacker Drive in Chicago in late August.

2109. African Center for Economic Transformation (ACET). 2014. The soybean agri-processing opportunity in Africa.

270 plants in 60 countries across its portfolio of agricultural commodities world-wide and generated \$61.7bn in revenues in 2010.

“the US, ADM is responsible for 31% of total soybean processing volumes. It has 23 crushing facilities and 13 oilseed refineries in the country. In 2006 ADM’s plants accounted for 30% of US soybean oil production capacity. In Brazil, ADM is the 3rd largest producer of soybeans accounting for 7% of the total produce. Currently ADM’s Africa activities focus on cocoa processing in Cameroon, Côte d’Ivoire and Ghana and the company lacks any significant soybean production or processing assets in the region.

“Across the value chain, ADM activities include production, processing and trading of soybean and its products, through its “Oilseeds Processing” and “Agricultural Services” divisions.

“Oilseeds Processing: Includes activities related to the production, crushing and further processing of soybeans. The processed products are then produced and marketed as ingredients for the food, feed and energy industry. It has made substantial investments in technology, and ADM currently claims to operate the most modern soy processing system in the US, capable of leaving only 1% oil in the soy meal with the rest being extracted and available for further refining

“Agricultural Services: The company has an extensive grain elevator and transportation network, used for buying, storing and transporting soybean and other agricultural commodities and their resale as food and feed ingredients and raw materials for the agricultural processing industry. ADM operates 330 silos in the US, South Africa, Canada, Brazil and other major agricultural regions.

“Beyond core soybean products, ADM operates one of the world’s largest ‘soy isoflavone’ facilities under the brand name of Novasoy. Isoflavones are a unique group of compounds found in soybeans, which share some of the physiological properties of the hormone estrogen, and are used as a dietary supplement.

“Key recent investments include a 50% share in Edible Oils Limited of the UK to procure, package, and sell edible oils in the UK. It also has a 50% share in Stratas Foods in Memphis, US to procure, package and sell edible oils in North America. It has an 80% interest in Toepfer in Germany, which is a global merchandiser of agricultural commodities and processed products.

“Cargill: Cargill is a multinational corporation based in Minnesota in the USA, and is an international producer and marketer of food, agricultural, financial and industrial products and services. Cargill’s overall business operations include purchasing, processing and distributing grain and agricultural commodities, the manufacture and sale of livestock feed and ingredients for processed foods and pharmaceuticals. Founded in 1865 it has operations in 65

countries today and recorded revenue of \$107.9 billion in 2010. It is responsible for 25% of all US grain exports.

“Cargill is a global purchaser, producer and trader of soybean. The company has evolved from trading soybeans, to processing them into meal and oil, to producing high-value natural vitamin E from a soybean byproduct. Cargill has a substantial footprint in the key soybean production markets of the US, Brazil and Argentina. In the US Cargill processes 21% of the available soybean on the market, and accounted for 22% and 13% of soybean oil production in the US and Argentina respectively in 2006, and accounted for 7% of the total soybean crush in Argentina. In Brazil, Cargill has 11% share of total soybean production. Cargill also has substantial presence in some smaller production markets: for example, Cargill has approximately 40% share of total soybean production in Paraguay.

“Although Cargill has a substantial presence in Africa that covers 12 countries including Ghana, Kenya, South Africa, Tanzania and Zambia, these activities do not currently include soybean production or processing.

“It has partnered with the Bill & Melinda Gates Foundation for the South African Soy Value Chain Program being conducted in Zambia and Mozambique. This program will target smallholder farmers and facilitate their access to agricultural inputs and new technologies, facilitate market access, and assist in infrastructure development. This will introduce soya production to 37,000 farmers across the two countries.

“Key recent investments include a \$20 million port terminal in Santarem in Brazil’s northern state of Para in 2003, with the capacity to store 60,000 metric tons of soybeans, and expected throughput of 800,000 metric tons per year. In 2006, Cargill made a significant entry into the Chinese processing sector through a \$60 million investment in a soybean crushing plant with a 5,000 ton per day capacity. More recently, in 2010 Cargill invested \$112 million in an 18MW co-generation plant and a soybean biodiesel production plant with a processing capacity of 240,000 tons per year in Argentina.

Bunge: Founded in 1818 in the Netherlands, Bunge is a leading multinational agribusiness and food company with operations in 30 countries, and net sales of \$41.9bn in 2009. It is a leading grain producer and is also involved in processing and grain trading. Bunge is the world’s largest oilseed producer, with operations across the entire value chain from oilseed cultivation to distribution to retailers and farmers.

“It has three business segments involved at different points across the value chain:

“Grain and Oilseed origination: Sources soybeans, stores and blends them and sells the final product to commodity customers. Bunge trades the resulting aggregated soybeans to over 80 countries.

“Oilseed processing: Produces soybean meal, soybean

crude oil, soybean hulls and hull pellets, and is capable of producing GM-free soy products to cater to markets like the EU. It operates over 50 processing facilities across North America, South America, Europe and Asia. Bunge is a major supplier to the Caribbean, Asia, North Africa and the Middle East.

“International marketing: Focused on the sale of soybean and its processed products to worldwide customers, management of logistics and price risk.

“Bunge has soybean production and processing activities in all the major producer markets: in the US it accounts for 14% of soybean processing, and 15% of production, in Argentina, for 7% of processing and 9% of production, and is the leading producer of soybean in Brazil, with 18% share of volumes.

“In 2009, Bunge built a new \$76m soy processing plant in Brazil with crushing capacity of 1.3 million tons a year. Bunge has also made significant investments in Vietnam, including \$100m toward an integrated soybean processing plant with 3000 tons per day capacity, scheduled to start production in 2011. Bunge also has a 50% stake in a Vietnamese port operator of Phu My Port.

“To date, Bunge does not have a significant presence in the Sub-Saharan Africa oilseeds sector, but in April 2011 it announced a joint venture with Senwes, a South African agribusiness company, to develop grains and oilseed operations in the country as a base for trading in the Sub-Saharan Africa region.” Address: Accra, Ghana.

2110. Mertens, Randall J. College of Agriculture, Food and Natural Resources, Univ. of Missouri; ADM [Archer-Daniels Midland Co.]. 2014. New ADM and CAFNR laboratory teaches entrepreneur skills beyond the blackboard (news release). Columbia, Missouri. 2 p. Nov. 16.

• **Summary:** “Columbia, Mo.—A cutting-edge industrial laboratory to give agricultural and engineering students a chance to hone advanced team and entrepreneur skills will be opened Oct. 9.

“The College of Agriculture, Food and Natural Resources and College of Engineering, University of Missouri, and Archer Daniels Midland Company (ADM) partnered to create the facility in the Agricultural Engineering Building on Mizzou’s east campus.

“The ADM Center for Agricultural Development was designed to provide students experiential learning in the latest theories of biofuel development, food production and energy processing.

“As the global population continues to grow, the world is looking toward agriculture to create viable, sustainable solutions to some of the world’s most pressing needs—like an abundant food supply and advanced renewable fuels,” said Michael D’Ambrose, ADM senior vice president and chief human resources officer. “To help our industry meet this challenge, ADM is pleased to invest in the University of

Missouri and the next generation of agricultural leaders.”

2111. Cancino, Alejandra. 2014. Pat Woertz retiring; ADM names new CEO. *Chicago Tribune* Nov. 6.

• **Summary:** “After eight years at the helm of one of the world’s largest agricultural companies, Patricia Woertz is stepping down as chief executive of Archer Daniels Midland and is being succeeded by Juan Luciano...”

When she joined ADM in 2006, one of the areas the board asked her “to focus on was leadership development and succession planning, with the goal of ensuring an eventual seamless transition to the next CEO.” She is looking ahead to fulfilling a decade of service to the company. She has worked to build a high-performance, results-focused company. Before coming to ADM she was at Chevron, in charge of global refining, marketing, lubricant, and supply and trading operations.

Earlier this year, *Fortune* ranked Woertz as No. 8 among the 50 most powerful women in business.

Last year, according to The Chicago Network’s 2013 census report, 14.5% of executive positions in Chicago’s 50 largest publicly traded companies were held by women.

Luciano, an industrial engineer, will become ADM’s CEO in January. In 2011 he joined the company as chief operating officer. Previously he worked at Dow Chemical, where he was president of the performance division.

ADM moved its global headquarters to downtown Chicago last August.

2112. Shurtleff, William; Aoyagi, Akiko. comps. 2014. History of meat alternatives (965 CE to 2014): Extensively annotated bibliography and sourcebook. Lafayette, California: Soyinfo Center. 1437 p. Subject/geographical index. Printed 17 Dec. 2014. 28 cm. [6759 ref]

• **Summary:** This is the most comprehensive book ever published about the history of meat alternatives worldwide. It has been compiled, one record at a time over a period of 35 years, in an attempt to document the history of this ancient and interesting subject. It is also the single most current and useful source of information on this subject.

Contents: Search engine keywords. Dedication and acknowledgments. Introduction: Brief chronology / timeline of meat alternatives worldwide. About this book. Abbreviations used in this book. How to make best use of this digital book—Three keys. Contains 435 photographs and illustrations. [www.soyinfocenter.com/pdf/179/MAL.pdf](http://www.soyinfocenter.com/pdf/179/MAL.pdf)

What is a meat alternative? It is a meatless food that has approximately the same taste, appearance, and texture of a related food made from meat, poultry, fish or shellfish. Its nutritional value is, in general, approximately equal to (or sometimes greater than) that of the related food, including essential vitamin B-12. Its name often indicates the meat to which it is an alternative, and the label must indicate clearly that it is a meatless product. For example Tofurky is a

meatless alternative to turkey. FriChik (or White-Chik) is an alternative to fried chicken. Choplets is an alternative to pork chops. Likewise there are Soyloin Steaks, Veja-Links (or Vegelinks), Vegetable Skallops, Bac\*Os (or Stripples), Mock Chicken Tempeh Salad, a myriad of meatless burgers, etc.

Traditionally a main ingredient in meat alternatives has been tofu (including fried and dried frozen tofu), wheat gluten, tempeh, yuba, and nuts (especially peanuts). Yet while these foods have been used for centuries to make meat alternatives, the Soyinfo Center does not include them in our definition of meat alternatives.

More recently, soy protein isolates, concentrates, and modern textured soy protein products (such as spun soy protein fibers, TVP, textured soy protein concentrates, etc.) have been added to the mix. Yet while these ingredients are increasingly used to make meat alternatives, we do not consider them to be meat alternatives. In the 1960s and 1970s they were often called “meat analogs/analogues.”

Meat alternatives serve many useful purposes:

Most people who become vegetarians do so for reasons of health, protection of animals (not killing or exploiting them), and/or concern for the environment. They often keep their desire for the taste and texture of meat—at least for a while. Meat alternatives may make it easier for them to make the transition to, or to maintain, this new diet and lifestyle.

Meat alternatives make it much easier for meat eaters to reduce or eliminate meat consumption—as, for example, when that is suggested by a cardiologist after (or just before) heart surgery. Many heavy consumers of meat cannot imagine life without it.

They serve as an occasional “comfort food” for long-time vegetarians.

A meatless turkey (such as Tofurky) makes it easier for vegetarians to “blend in” at Thanksgiving.

Brief chronology of meat alternatives:

965—The earliest known reference to tofu (worldwide) appears in China in the *Anecdotes, Simple and Exotic (Qing yilu)* by Tao Ku. It states: When Shi Ji was the magistrate of Qing Yang, he emphasized the virtue of frugality among the people, and discouraged the consumption of meat. Instead he promoted the sale of tofu. But rather than calling it *doufu* (the Chinese name for tofu), he referred to it as ‘mock lamb chops’ or ‘the vice mayor’s mutton.’ (Translated by H.T. Huang, PhD, July 2002).

1301—Meat alternatives are next mentioned, worldwide, in China. A recipe for mock lung sausage and one for mock eel (the main ingredient of each is *mien-chin* / wheat gluten) appears in the *Essential Arts for Family Living (Jujia biyong shilei quanji)*, an encyclopedia.

1587 Jan. 24—Yuba, called *uba*, is first mentioned worldwide; it appears in a Japanese diary.

1596—Wheat gluten is again used in China to make meat alternatives in *The Great Pharmacopoeia (Bencao gangmu)* by Li Shizen. Yuba (*doufu-pi*) is first mentioned in China in

the same work.

1621-1627—At a banquet in Ming-dynasty China, a group of Buddhist nuns is reassured: “This is vegetarian food made to look like meat. It has come from the temple, and there can’t possibly be any harm in eating it.” (Egerton’s 1939 translation of *The Golden Lotus {Jin Ping Mei}*, by Xioa-Xiao Sheng).

1790—In the famous book *Recipes from the Sui Garden (Suiyuan shidan)* by Yuan Mei (Qing dynasty), Mock roast goose with yam wrapped in yuba (*doufu pi*) is mentioned. This is the earliest document seen that mentions a meat alternative resembling poultry.

1815—Tempeh is first mentioned worldwide in the *Serat Centini* from Indonesia.

1852 Nov. 24—Meat alternatives are first mentioned in the Western world. “We learn that a distinguished Grahamite has invented a vegetable sausage. It is composed mainly of red flannel and turnip tops, chopped fine. All heating spices are excluded. The vegetable sausage has long been a desideratum with the proprietors of vegetarian boarding-houses.” (*New Hampshire Patriot and State Gazette {Concord}*. “An important invention,” p. 3).

1876—The term “substitute for meat” is first used (in English) in the official catalogue for Japan’s International Exhibition at Philadelphia. Tofu and miso, “afford the necessary nitrogenous substances, and to a certain extent form the substitute for meat;...” (p. 106).

1886—The earliest known document to mention a meat alternative in Japan is *A Japanese-English and English-Japanese Dictionary*. 3rd ed., by James C. Hepburn. The entry states: “Hiriōzu: A kind of food made of tōfu fried in oil.” Hiriōzu (now usually spelled Hiriyōzu) refers to Kyoto-style deep-fried tofu treasure balls.

1888—The term “substitute for flesh meat” is first used (M. Holbrook, p. 117).

1892 March 16—The word “meatless” is first used. The *New York Times* (p. 2) runs an article titled “A Meatless Feast. Banquet of the New-York Vegetarian Society.”

1893 Jan. 15—The term “meat substitutes” first appears. In an article titled “Lectures on Cooking,” the *New York Times* (p. 17) states that Miss Maria Daniell of the Massachusetts Institute of Technology will give a course of lectures on cooking for the sick. It “will include instructions for the... cooking of meats and meat substitutes.”

1895 Dec. 25—Earliest known reference to a meatless turkey. In an article titled “No Meats on the Menu,” about the Chicago Vegetarian Society’s annual banquet, the *Chicago Daily Tribune* states that the twelve course menu included “vegetable turkey.”

1895-1899—Charles Dabney interests Dr. John Harvey Kellogg in developing substitutes for meat. Dr. Kellogg first described this in 1923 in a book titled *The Natural Diet of Man* (p. 334-36): “By the combination of nuts and cereals, a product very closely resembling meat may be prepared.

The process for doing this was discovered by the writer many years ago in a series of experiments undertaken for the purpose by the request of Professor Dabney, then assistant professor in the Department of Agriculture. Recognizing that the increase of population would ultimately lead to an increase in the price of foodstuffs and particularly of meats, and possibly a scarcity of meats, Professor Dabney requested the writer to solve the problem by the production of a vegetable substitute for meat. The result of the experiment undertaken was Protose, a nut-cereal preparation, which to a considerable degree resembles meat in appearance, taste and odor, having a slight fibre like potted meat.”

1896 July–Nuttose, the first commercial meat alternative in the Western world, is launched by the Battle Creek Sanitarium Bakery, renamed the Sanitas Nut Food Co. by Nov. 1896. The brainchild of Dr. John Harvey Kellogg, it is the first of many Seventh-day Adventist meat alternatives and the world’s first canned meat alternative. Peanuts are the main ingredient. In Sept. 1896, Ella Kellogg, Dr. Kellogg’s wife, publishes six recipes for its use in the popular magazine *Good Health* (Battle Creek, Michigan). In a Nov. 1896 advertisement, Nuttose is said to have “somewhat the appearance and flavor of cold roast mutton.” By Dec. 1896 Nuttose is being sold as a “health food” in Los Angeles and advertised in the *Los Angeles Times*.

1896 July–The term “substitute for flesh food” first appears. It is used to describe Nuttose in an article by Dr. J.H. Kellogg in *Good Health* magazine (Continued). Address: Soyinfo Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

2113. Madison, Deborah. 2014. *The new vegetarian cooking for everyone*. Revised. Berkeley, California: Ten Speed Press. vi + 665 p. Index. 27 cm. Originally published in New York by Broadway Books in 1997.

• **Summary:** This book (vegetarian) is a revised and expanded edition of *Vegetarian Cooking for Everyone* (Oct. 1997).

Chapter 16, titled “Tofu, tempeh and miso” (p. 521-539) begins: “Soy was the big hope in the 1970s, ‘80s, and into the ‘90s for its protein, lack of cholesterol, its ability to imitate meat in many forms, and its possible health benefits.

“Then suddenly it was under suspicion, and still is. Tofu, which is difficult to digest, should be thought of as a food you eat in small quantities, while fermented soy products, like miso and tempeh, are now preferred.” This page goes on to discuss the pros and cons of soyfoods. TVP (textured vegetable protein) a highly-processed, sawdustlike by-product, often used as a filler in meat dishes, sits at the bottom of her list of wholesome and delicious foods. Hexane, used to treat some “natural” soy products, is a neurotoxin [and a highly volatile petroleum fraction]. She has found that soy oil and soy flour are too often rancid, yet both are widely available in supermarkets. Soy milk and tofu have their own problems; much of their wholesomeness depends on the

company that makes them, the sources of their soybeans (are they organic, non-GMO) and who certifies them when they are imported from China. Eden Foods gets high marks for the integrity of its various types of Edensoy®. Silk® soy milk, made by Dean Foods, gets low marks for its high level of sweetness and the fact that its maker refuses to give the source of its soybeans. Yet soy milk may be beneficial to those who are very lactose intolerant. Some people find it hard to digest soy milk and other soy products. Fortunately there are now other plant milks that are easier on the body and widely available.

Recipes: This section begins with 4 Asian dipping sauces, three of which call for soy sauce. The section on tofu begins with a discussion of tofu, the eight types of tofu, cooking techniques (draining, firming and precooking), four additional sauces for tofu and tempeh (pages 59-61), marinating tofu and tempeh plus 4 marinades, then 16 tofu recipes.

The section on tempeh begins with a discussion of tempeh followed by 9 tempeh recipes.

The section on miso begins with a discussion of miso and the best known of the many types of miso. Since miso is best known in miso soups there are two recipes for kombu stock followed by 6 miso recipes and a list of more garnishes for miso soups.

About the author: On the rear inside dust jacket is a color photo of Deborah Madison. The text below it reads: “Deborah Madison is the author of eleven cookbooks and is well known for her simple, seasonal, vegetable-based cooking. She got her start in the San Francisco Bay Area [California] at Chez Panisse before opening Greens, and has lived in New Mexico for the last twenty years. In addition to writing and teaching, she has served on the boards of Slow Food International Biodiversity Committee, the Seed Savers Exchange, and the Southwest Grassfed Livestock Alliance, among others. She is actively involved in issues of biodiversity, gardening, and sustainable agriculture.” Address: Author and chef, Santa Fe, New Mexico.

2114. Markets and Markets, 2014. *Lecithin market worth 1.11 billion U.S. dollars by 2020* (News release). Pune, Maharashtra 411013, India. 162 p.

• **Summary:** “The report ‘Lecithin and Phospholipids Market by Lecithin Type, by Source (Soy, Sunflower, Egg and Others), by Application (Food, Nutrition & Supplements, Feed, Pharmaceuticals and Others) & Region—Global Trends and Forecasts to 2020’, analyzes the lecithin & phospholipids market, which is segmented based on the type, application, source, and region. The lecithin & phospholipids market, based on source, includes soy, sunflower, egg, and others. The market, based on application, is segmented into food, nutrition & supplements, feed, pharmaceuticals, and others. The report includes the driving and restraining factors of the market with detailed analyses of opportunities and

challenges. The market has been segmented on the basis of the key regions—North America, Europe, Asia-Pacific, and the Rest of the World (RoW). The size of the markets in the key countries has also been covered and projected for each region.

“Browse 65 market data Tables and 62 Figures spread through 162 Pages and in-depth TOC [Table of Contents] on ‘Lecithin and Phospholipids Market by Lecithin Type, by Source (Soy, Sunflower, Egg and Others), by Application (Food, Nutrition & Supplements, Feed, Pharmaceuticals and Others) & Region—Global Trends and Forecasts to 2020.’

A link is given.

“The lecithin market was valued at USD 784.5 Million in 2014 and is projected to grow at a CAGR [compound annual growth rate] of 5.9% from 2015 to 2020. The food segment in the lecithin market is projected to reach a value of 177.37 million tons by 2020. The nutrition & supplement segment dominated the phospholipids market. The driving factors of the lecithin & phospholipids market are increase in the applications of lecithin & phospholipids such as animal feed, pharmaceuticals, and food; growing demand for natural sources of ingredients; increasing consumer awareness and health concerns; and rise in consumption of convenience foods.

“With the increase in per capita income, the expenditure on convenience foods and healthcare products has increased, which has resulted in an increase in the demand for lecithin & phospholipids. These factors provide opportunities for emerging market players. Fluctuating prices of raw materials is the major restraining factor for the market.

“The global lecithin & phospholipids market is segmented on basis of application. The applications considered for this research are food, nutrition & supplements, feed, pharmaceuticals, and others. Sources of lecithin & phospholipids are also classified in the segmentation. By source, the soy segment in the phospholipids market accounted for a share of 73.6% in 2014 and is projected to reach a volume of 3536.2 KT [kilotons = 1,000 tons]. The market for lecithin is projected to reach USD 1.11 billion by 2020 at a CAGR of 5.9% from 2015 to 2020, in terms of value. The Asia-Pacific region is estimated to be the largest market for lecithin & phospholipids, in terms of both, value and volume, in 2015. In the lecithin market, the Asia-Pacific region is projected to be the fastest-growing market at a CAGR of 5.9%, in terms of value, during the review period. This growth is mainly driven by the growing food, feed, and healthcare industries, particularly in developing countries such as India, China, and Latin American countries. The key players of the lecithin & phospholipids market are undertaking strategic decisions of new product developments, expansions, and investments to maintain their position in the market. They are involved in the research & development of various innovative enzyme products to attain a majority market share. The key players in

this market are Cargill Incorporated (U.S.), Archer Daniels Midland Company (U.S.), Lipoid GmbH (Germany), E.I. duPont de Nemours Company (U.S.), and Stern-Wywiol Gruppe Pvt. Ltd. (India).”

“About MarketsandMarkets: MarketsandMarkets is the world’s No. 2 firm in terms of annually published premium market research reports. Serving 1700 global fortune enterprises with more than 1200 premium studies in a year.”

Note: This study costs \$4,650. Since few public statistics are kept on lecithin production and value, market studies generally have to rely on what data is available. Moreover they tend to have a poor understanding of specialized industries. Address: India.

2115. Soyatech, LLC. 2015. Soya & Oilseed Bluebook 2015: The annual directory of the world oilseed industry, online at www.soyatech.com. Bar Harbor, Maine: Soyatech. 320 p. Feb. Comprehensive index. Advertiser index. Statistical conversions. 28 cm.

• **Summary:** This is the 9th year in a row that the *Bluebook* (a \$95 value) has been sent free of charge to qualified industry members. On the front cover is an aerial photo, near sunset, of a huge soybean field with no weeds visible.

The 12 oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed, hemp seed, jatropha, linseed, palm, peanut, rapeseed, safflower, soya, sunflowerseed—the same as last year.

The book is divided into four major sections: (1) Soybeans, oilseeds & oilseed products. (2) Equipment, supplies & services. (3) Company & organization listings. (4) Statistics & reference.

On the inside front cover is a color ad from Soybean Premiums.org. Other full-page ads related to soyfoods are: Crown Iron Works Company, AOCS, French Oil Mill Machinery Co., Zeeland Food Services, Inc (Non-GMO Soy), DSM (Purfine), Buehler, Insta-Pro International.

On the back cover is a full page color ad from Natural Products Inc. (NPI, Grinnell, Iowa), makers of innovative ingredients for soymilk and tofu to cakes and cookies. They are the makers of Scotsman’s Mill ingredients.

Page 5: Greg Mellinger is CEO. Keri Hayes is publisher and operations director. Address: P.O. Box 1307, 19 Clark Point Rd., Suite 112, Southwest Harbor, Maine 04679. Phone: 207.244.9544.

2116. Wendel, Armin. 2015. Re: The largest soybean crushers in Europe who sell their own lecithin. Letter (e-mail) to William Shurtleff at Soyinfo Center, Sept. 13—in reply to questions. 1 p.

• **Summary:** In the European market, soy lecithin is no longer as popular as it was because of GMO [genetically engineered soybeans] and allergy to soy.

The main oilseed crushers in Europe are ADM, Bunge and Cargill.

The food industry in Europe now prefers rape- and sunflower lecithin. Therefore the big oil mills (ADM, Bunge and Cargill) are crushing non-GMO soybeans (mostly coming from South America or India), rapeseeds and sunflower seeds (from Eastern Europe).

Companies modifying or fractionating lecithin are mostly importing lecithin from USA, South America and India.

ADM sells lecithin under the trademarks Yelkin®, Beakin®, Performix™, Thermolec®, Ultralec®, and Adlec™.

ADM sells deoiled lecithin under the trademark Ultralec®.

Bunge sells their lecithin mostly through DuPont (Danisco, Solae, former Central Soya) under the trademark Solec® (liquid and deoiled lecithin).

To explain: Cereol bought Central Soya (CSY) many years ago.

In July 2002 Bunge bought Cereol of France.

In 2003 Bunge, together with DuPont, integrated the business of Cereol into the new company, Solae.

DuPont bought Danisco and integrated the Solae business into Danisco.

Cargill (which purchased Lucas Meyer, Degussa) (fluid lecithin, deoiled lecithin, lecithin fractions): Topcithin, Lecigran, Epikuron, Metarin, Emulfluid, Emulpur, Emultop, Chocotop, Lecisoy, Lecimulthin.

To explain: In July 1999 Lucas Meyer (which sold mostly lecithin) was acquired by the nature products division of SKW Trostberg (a specialty chemical company). In 1998 Lucas Meyer has almost 250 employees, 140 of them in Germany, and generated sales of DM160 million (\$83.5 million). The business was then integrated into Degussa—a large German company with a long history. Degussa sold the business to Cargill. Cargill bought the lecithin business from Riceland.

Monsanto, with their introduction of GMO soybeans, has had a very negative influence in the lecithin business and industry. Address: Germany.

2117. Welters, Sjon. 2015. Re: Names of the various modern soy protein products in Dutch. Letter (e-mail) to William Shurtleff at Soyinfo Center, Nov. 30. 1 p. [Dut]

• **Summary:** Soy protein concentrate—soja eiwit concentraat  
Soy protein isolate—geïsoleerde soja eiwit

Textured soy flour (TVP)—TVP in the Netherlands, but called getextureerde plant eiwit (protein iso flour) and commonly referred to as “sojabrokken” or soja chunks (when made of soy), although sometimes made of oats, wheat, cottonseed.

Spun soy protein fiber—gesponnen soja vezel. Address: Founder and general manager, Rhapsody Natural Foods, 72 Danville Hill Rd., Cabot, Vermont 05647-9622.

2118. Wendel, Armin. 2016. Re: History from 1966 of Nattermann, American Lecithin Co. and phospholipids. Letter (e-mail) to William Shurtleff at Soyinfo Center, Feb. 27. 1 p.

• **Summary:** Note: Armin prefaces this chronology by saying that these dates come from his memory.

“1966—Foundation of Phospholipid GmbH in Hamburg as joint venture (50:50) between A. Nattermann Cie. GmbH and the ‘Ölmühle Hamburg’ (former Hansa Mühle—today ADM). Production of deoiled Lecithin as starting material for Cologne EPL-production. Cooperation ended 1985.

“1971—Cooperation with Lucas Meyer (selling the byproducts of Nattermann to Lucas Meyer). Cooperation ended in 1980.

1977—Foundation of Nattermann Chemie GmbH as affiliate of A. Nattermann & Cie. GmbH.

“1986—A. Nattermann Cie. GmbH acquired by Rhône Poulenc.

“1987—Nattermann Chemie GmbH renamed in Nattermann Phospholipid GmbH.

“1988—Foundation of Nattermann Phospholipid Inc. (USA Dobbs Ferry, New York).

“1988—Nattermann acquired American Lecithin Co. (ALC).

“1989—Rhône Poulenc acquired Rorer—renamed to Rhône-Poulenc Rorer (RPR).

“1994—Nattermann Phospholipid cooperation with Central Soya (CSY).

“1999—RPR merged with Hoechst to form Aventis.

“2001—Nattermann Phospholipid GmbH sold ALC to Randy Zigmont.

“2002 May 1—Nattermann Phospholipid GmbH was acquired by Lipoid GmbH.

“2002—Nattermann Phospholipid GmbH renamed Phospholipid GmbH.

“2004—Sanofi merged with Aventis to Sanofi Aventis (today only named Sanofi—Beside this Nattermann (although belonging to Sanofi) still acts under the name Nattermann).

“2007 Jan. 1—ALC acquired by Lipoid.”

2119. Soyatech, LLC. 2016. Soy & Oilseed Bluebook 2016: The annual directory of the world oilseed industry, online at [www.soyatech.com/bluebook.htm](http://www.soyatech.com/bluebook.htm). Bar Harbor, Maine: Soyatech. 316 p. March. Comprehensive index. Advertiser index. Statistical conversions. 28 cm.

• **Summary:** This is the 10th year in a row that the *Bluebook* (a \$95 value) has been sent free of charge to qualified industry members. A special letter inserted into this year’s *Bluebook* states: “... we have decided to suspend the print edition of the *Bluebook*. On the front cover is an aerial photo of fields of yellow rapeseed flowers, with blue sky and white clouds overhead.

The 12 oilseeds covered in this book are (alphabetically): Canola, coconut, corn, cottonseed, flaxseed,

hemp seed, linseed, palm kernels, peanut, popcorn, rapeseed, safflower, soybeans, sunflowerseed.

The book is divided into four major sections: (1) Soybeans, oilseeds & oilseed products. (2) Equipment, supplies & services. (3) Company & organization listings. (4) Statistics & reference.

On the inside front cover is a color ad from Soybean Premiums.org. Other full-page ads related to soyfoods are: Myande Group Co. Ltd (China), French Oil Mill Machinery Co., Zeeland Food Services, Inc (Non-GMO Soy), Buehler, Insta-Pro, AOCS, Balaguer, IRLR Group, OilDri, Schule, SciKoon, Solex, Crown Iron Works Company, Roskamp Champion.

On the back cover is a full page color ad from Natural Products Inc. (NPI, Grinnell, Iowa), makers of innovative ingredients for soymilk and tofu to cakes and cookies. They are the makers of Scotsman's Mill ingredients.

Page 5: Greg Mellinger is CEO. Keri Hayes is publisher and operations director of this Bluebook.

Note: This was the last edition of the Bluebook that was published by Soyatech. Address: P.O. Box 1307, 19 Clark Point Rd., Suite 112, Southwest Harbor, Maine 04679. Phone: 207.244.9544.

2120. Wendel, Armin. 2016. Re: History of Lucas Meyer. Letter (e-mail) to William Shurtleff at Soyinfo Center, June 14. 1 p.

• **Summary:** Lucas Meyer never crushed soybeans. They got their lecithin, soy flour and soy proteins from soybean crushers.

"Sometimes company history is very complex. At the time (July 15, 1999) when SKW acquired Lucas Meyer—SKW belonged to VIAG.

"In 2000 VIAG merged with VEBA to become EON—and SKW together with Degussa-Huels became the new Degussa AG.

"The food business didn't fit the company any more, therefore Degussa (a VIAG company) sold the food business (which included the former Lucas Meyer business) to Cargill (9 September 2005). Cargill was interested in expanding their food business.

"Edelsoja—according to my files (at least in 1974)—Edelsoja was the 50:50 joint venture of ADM and Lucas Meyer. ADM was the producer and Lucas Meyer was selling the material."

Here are some basic facts about Lucas Meyer:

Address: Edelsoja GmbH—Ausschläger Elbdeich 21 Hamburg

Share Capital: Deutsche Mark (German Mark) 1 Million  
*GF (Geschäftsführer)* = Managing director: Arnd von Wissel, Jens Heiser

*Ges. (Gesellschafter)* = Partner: Ges.: Oelmühle Hamburg AG (500TDM), Lucas Meyer (500TDM)

*Prok. (Prokura)* = Authorized officer: Karl Otto Tielker

*Umsatz* = Sales 1989: Deutsche Mark 30 Million.  
 Employees: 36

*Gegründet* = Founded December 18, 1959

April 4th, 1974 Hamburg HRB (Handelsregister B)  
 Commercial register 16400 (This is the source of this information!)

Former Lucas Meyer employees established their own business:

Dr Herbert Rebmann = 1977 Lipoid GmbH <http://www.lipoid.com/en>

Volkmar Wywiol = 1980 Stern Wywiol Gruppe <http://www.stern-wywiol-gruppe.de>

Dr. Kuno Strauss = 1981 Extrakta Strauss [www.extrakta.de](http://www.extrakta.de)

Jens Heiser = 2005 Lecico <http://www.lecico.de>

Dr. Michael Schneider = Lecithos <http://www.lecithos.de>

Peter Fisser = Fisser Lecithin <http://www.fisser-lecithin.com>

Pierre Labourd = 2006 Novastell <http://www.novastell.com>

The founder of Lucas Meyer, his son and grandson are:  
 1—Herman Heinrich Meyer \*1893 +1978 (in the company 1923-1945)

2—Lucas Heinrich Gustav Meyer \*1924 +1980 (in the company 1945-1980)

3—Lucas C.H. Meyer \*1949 (in the company 1977-2006). Address: near Heidelberg, Germany.

2121. ADM (Archer Daniels Midland Co.). 2016. History of ADM, 1902-1979 (Website printout—part). [www.adm.com/en-US/company/history/Pages/default.aspx](http://www.adm.com/en-US/company/history/Pages/default.aspx) 6 p. Retrieved June 24. [6 ref]

• **Summary:** "1902 John W. Daniels founds Daniels Linseed Company in Minneapolis, Minnesota, and is named president.

"1903—George A. Archer joins W. Daniels in Minneapolis.

"1905—The Company name is changed to the Archer Daniels Linseed Company.

"1911—Capitalization reaches \$1,000,000.

"1914—The Company's first expansion takes place when a linseed mill is leased at Superior, Wisconsin.

"1915—Company expands to compete in eastern markets by building a linseed mill and a public grain elevator in Buffalo, New York.

"1923—The Company hires its first chemist for research. The Midland Linseed Products Company purchase occurs; the Company's name changes to Archer Daniels Midland Company.

"1924—John W. Daniels leaves his position as president and becomes chairman. Shreve M. Archer is named president.

"1925—The Company builds its first concrete grain

elevator in Minneapolis.

“1927–The Armour Grain Company is purchased, forming ADM’s grain division.

“1928–ADM has a record \$8.036 per share earnings.

“1929–ADM purchases the Werner G. Smith Company of Cleveland, Ohio, the country’s largest manufacturer of core oils. ADM starts crushing soybeans in its Toledo and Chicago plants, becoming a leader in the rapid development of soybeans in the United States. ADM acquires the Commander Larabee Corporation, one of the largest flour milling operations in America at the time.

“1931–John W. Daniels passes away and George A. Archer is named chairman.

“1932–George Archer passes away. During 1932-1947, ADM president Shreve Archer serves in the capacity of chairman, although he did not have the title.

“1933–ADM begins the manufacturing of formula feeds.

“1934–ADM installs the first continuous solvent extraction unit in the United States at the Chicago plant and begins the solvent extraction of soybeans.

“1935 ADM achieves a record net profit after income tax and depreciation (hereafter referred to as ‘net earnings’) of \$2,525,745 dollars.

“1939–ADM begins construction of what was then the world’s largest solvent extraction plant at Decatur, Illinois.

“1940–New products development through research grows rapidly, turning raw linseed and crude soybean oil into several hundred different products.

1946–Current assets reach \$50,284,312 with sales of \$186,255,175.

1947–Net sales and other operating income increase to \$297,429,912 and create record net earnings of \$15,673,041. Shareholders’ equity rises to \$54,748,884. Shreve M. Archer passes away and Thomas L. Daniels is elected president. Samuel Mairs is named chairman.

“1952–The cost of property, plant and equipment is \$54,107,838 exceeding \$50 million dollars for the first time. The number of ADM employees grows to over 5,000.

“1954–ADM purchases the resin division of U.S. Industrial Chemicals, with plants in Newark, New Jersey, and Pensacola, Florida.

“1955–Samuel Mairs passes away. Another chairman will not be named until 1958.

“1956–ADM pays its 100th consecutive quarterly payment, a record of twenty-five years of uninterrupted stock dividends.

“1957–ADM enters the isolated soy protein business.

“1958–T.L. Daniels steps down as president and is elected chairman. John H. Daniels is elected president.

“1962–The ADM logo is changed from the Archer yeoman to a logo design meant to represent chemical molecules coming from a natural resource.

“1963–ADM completes its grain export terminal at Destrehan, Louisiana. This is its first direct outlet to the Gulf

Coast.

“1964–T.L. Daniels steps down as chairman and Erwin A. Olson is elected chairman.

“1966–ADM begins producing textured vegetable protein TVP at the Decatur East Plant.

“1967–Net sales and other operating income increase to \$371,625,700 and create net earnings of \$4,370,293. Shareholder’s equity rises to \$91,297,180. ADM sells its Chemical Group to Ashland Oil & Refining Company in a refocus on agricultural products. ADM purchases a fleet of thirty barges, the start of its transportation fleet. ADM completes its soybean oil refining and hydrogenation plant in Decatur, Illinois.

“1968–Net sales and other operating income decreases to \$280,771,608 as net earnings increase to \$4,413,558. Shareholders’ equity changes to \$89,999,809. Erwin A. Olson steps down as chairman. John H. Daniels steps down as president and is elected chairman and Lowell W. Andreas is elected president.

“1969–ADM moves its corporate offices and research laboratory to Decatur, Illinois. ADM forms its specialty division to market a variety of specialty items in the food and industrial areas, including TVP.

“1970–ADM acquires assets of companies, enabling the Company to return to the mixed feed and dry corn milling businesses. Vanier foods operations is purchased. Dwayne O. Andreas is elected to the position of chief executive.

“1971–ADM acquires an eighty-three percent interest in Corn Sweeteners, Inc., a wet corn milling plant in Cedar Rapids, Iowa.

“1972–Lowell Andreas steps down as president and Donald B. Walker is named his successor. John H. Daniels steps down as chairman and Dwayne Andreas is elected chairman and chief executive. ADM forms the American River Transportation Company.

“1973–ADM acquires a fifty percent interest in British Arkady.

“1974–Net sales and other operating income reach \$1,551,288,700, creating net earnings of \$29,410,385. Shareholders’ equity reaches \$176,922,649. ADM acquires soybean plants in Holland and Brazil, its first processing facilities in Europe and South America

“1975–Donald Walker steps down as president and is elected vice chairman of the board. James R. Randall is elected president.

“1977–Donald Walker steps down as vice chairman. ADM employees number approximately five thousand.

“1978–During the Arab oil embargo, President Carter asks Dwayne Andreas to convert a new beverage alcohol plant into a synfuel plant. An ethanol production plant starts up in Decatur.

“1979–Total assets rise to \$1,032,523,000.

“ADM Trucking is established.”

2122. ADM (Archer Daniels Midland Co.). 2016. History of ADM, 1980-2016 (Website printout-part). [www.adm.com/en-US/company/history/Pages/1980-1999.aspx](http://www.adm.com/en-US/company/history/Pages/1980-1999.aspx) 6 p. Retrieved June 24. [6 ref]

• **Summary:** “1980 Net earnings are \$115,958,000 on net sales and other operating income of \$2,802,011,000. Shareholders’ equity increases to \$766,971,000. ADM Industrial Oils is established. The Peoria, Illinois, ethanol plant is purchased.

“1981–ADM pays its 200th consecutive quarterly payment, a record of fifty years of uninterrupted stock dividends. An ethanol production plant starts up in Cedar Rapids, Iowa.

“1982–ADM purchases Clinton, Iowa ethanol production plant.

“1983–ADM acquires interest in A.C. Toepfer; establishes ADM Asia Pacific, Ltd., Hong Kong.

“1984–President Ronald Reagan visits ADM.

“1985–ADM acquires elevators from Growmark and establishes ADM/GROWMARK River Systems, Inc.

1986–Expansion in Europe: ADM acquires Unilever plants in Hamburg & Spyck, West Germany and Europoort, The Netherlands.

1988–ADM purchases the soy isolate business from Grain Processing and the sunflower and canola plant at Velva, North Dakota, from Midwest Processing Company, Inc.

1989–Net earnings are \$424,673,000 on net sales and other operating income of \$7,928,836,000. Shareholders’ equity increases to \$3,033,503,000.

“ADM constructs an industrial soy protein facility in Decatur.

1990–The veggie burger is introduced to the U.S. and U.S.S.R. markets.

1991–ADM enters citric acid business.

1992–ADM builds pilot plant operations for canola oil-based biodiesel fuel in Leer, Germany. Former Soviet President, Mikhail Gorbachev, visits ADM.

1994–Asian expansion: Investments into Wilmar holdings, Singapore, are made with our main JV partner in Asia; first investment into China, East Ocean Oils & Grains (EOGI) in Zhangjigang, is initiated.

1996–Net earnings are \$695,912,000 on net sales and other operating income of \$13,314,049,000. Shareholders’ equity increases to \$6,144,812,000. Total assets increase to \$10,449,869,000. ADM World website is launched. ADM builds a new TVP plant at the Europoort facility. ADM purchases a twenty-two percent interest in Gruma S.A. de C.V.

1997–James R. Randall retires as president. G. Allen Andreas is named president and chief executive. ADM enters the cocoa business. Brazilian expansion: ADM acquires Glencore’s Brazilian grain operations, including a head office in Sao Paulo, approximately thirty-three grain elevators

and a fertilizer processing plant. ADM acquires Moorman Manufacturing Company and subsidiaries.

“1998–Nobel Peace Prizewinner and former Israeli Prime Minister Shimon Peres visits ADM.

“1999–Dwayne Andreas steps down as chief executive and chairman and is named chairman emeritus. G. Allen Andreas steps down as president and is named chairman and chief executive. John D. McNamara is named President. ADM Rice Inc. forms, to be involved in the origination and export trading of rough-paddy rice and milled rice.

2000–ADM partners with Wilmar International Ltd. to construct five soybean crushing plants in China.

“2001–e-ADM website is launched.

“ADM acquires Doysan Yag Sanayii, a Turkish vegetable oil producer with crushing plant, refinery, and packaging operations.

“ADM acquires Sociedad Aceitera del Oriente, S.A. (SAO), a Bolivian vegetable oil producer with crushing plant, refinery, packaging operations, and grain elevators.

“ADM unveils a new corporate logo designed to underscore the company’s deep commitment to nature and global agriculture.

“ADM pays its 300th cash dividend and 280th consecutive quarterly payment, a record of seventy years of uninterrupted stock dividends.

“John D. McNamara steps down as president and Paul B. Mulhollem is elected president.

“ADM creates a technology council with P&G Chemicals aimed at developing innovative natural- based products.

“ADM makes history when it becomes the first U.S. company to sign a contract with Cuba since the embargo began nearly forty years prior.

“2002–ADM completes its acquisition of Minnesota Corn Processors, LLC (MCP). With the acquisition, ADM adds corn wet-milling plants located in Marshall, Minnesota, and Columbus, Nebraska.

“Net earnings are \$511,093,000 on net sales and other operating income of \$23,453,561,000. Shareholders’ equity increases to \$6,754,821,000 equal to \$10.39 per common share. Total assets increase to \$15,416,273,000.

“The number of ADM employees grows to more than 24,000.

2003–ADM increases presence in South America by adding five grain origination and storage silos in Brazil.

“ADM introduces the NovaLipid 0 grams trans per serving oils and shortenings.

“2005–U.S. Environmental Protection Agency honors ADM with a Presidential Green Chemistry Award for a process known as enzymatic interesterification, which resulted in the NovaLipid 0 grams trans per serving oils and shortenings.

“ADM launches the Socially & Environmentally Responsible Agriculture Practices (SERAP) Program,

which provides financial incentives for West African cocoa cooperatives to implement sustainable practices in areas such as safe farming, responsible labor management and forest protection. More than 6,000 farmers participate in the program in its inaugural year.

2006—ADM acquires the technical and intellectual property assets of Groupe Lysac, Inc., in a move that enhances the company's ability to create biodegradable products from natural and renewable resources. Groupe Lysac's absorbent polymers—made primarily from starch, rather than petroleum products—can be used in new generations of industrial applications and consumer products, including disposable diapers.

“Patricia A. Woertz is named CEO and President of ADM.

“2007—Patricia A. Woertz is named Chairman of ADM's Board of Directors, while remaining the company's president and CEO.

“ADM opens its first wholly owned U.S. biodiesel production facility in Velva, N.D.

“ADM receives GE Global Ecomagination Award for saving 1.5 billion gallons of water per year through the installation of wastewater-treatment systems at the company's Decatur, Illinois, corn-processing plant.

“2008—ADM joins forces with Monsanto Company and Deere & Company to harvest, store and transport corn stover—stalks, cobs and leaves of corn plants—as a cellulosic feedstock for biofuel production, as biomass to generate steam and electricity, and as an ingredient in animal feed.

“2009—ADM launches ADM Cares, a social investment program that targets up to one percent of pretax earnings to initiatives that advance societal improvements in areas related to the company's business.

“ADM accepts the Foreign Policy Association's Corporate Social Responsibility Award for demonstrating exceptional corporate citizenship and playing a meaningful role in furthering economic, social and environmental progress in the communities it serves.

“ADM expands its European oilseeds processing capabilities with the acquisition of an oilseed crushing, refining and biodiesel facility in Olomouc, Czech Republic.

“ADM begins operations at its cocoa processing facility in Kumasi, Ghana.

“ADM acquires five oceangoing vessels, totaling 250,000 metric tons of cargo capacity, enhancing the flexibility and efficiency of its transportation network.

“Patricia Woertz and other ADM executives commemorate the 85th anniversary of the company's listing on the New York Stock Exchange by ringing the closing bell at the NYSE.

2010—ADM begins construction of a biodiesel plant in Joaçaba, Santa Catarina, Brazil, which will increase the company's biodiesel production capacity in Brazil by more than 50 percent.

“ADM publishes its first Corporate Responsibility report, detailing the company's progress in the areas of supply-chain integrity, environmental stewardship, social investing and safety since the company convened its Sustainability Steering Committee in 2007.

“ADM opens ethanol dry mills in Cedar Rapids, Iowa, and Columbus, Nebraska, with each facility adding 300 million gallons to ADM's annual ethanol production capacity.

“ADM announces the opening of a Beijing office.

“2011—ADM acquires remaining interest in Golden Peanut Company.

“ADM's deZaan cocoa brand celebrates 100 years.

“ADM begins production of biobased propylene glycol in Decatur, Illinois.

“ADM opens a feed premix plant in Tianjin, China.

“ADM establishes Indian headquarters in Gurgaon and grows Indian oilseed processing capabilities through acquisition of Gheepee Agri Private Ltd., Tinna Oils Ltd. and Madhur Agro.

“ADM acquires Elstar Oils S.A. in Poland.

“2012—ADM's Board of Directors approves a change to calendar-year financial reporting, effective Jan. 1, 2013.

“ADM acquires a port terminal in the state of Pará in Brazil, improving the company's ability to link the country's harvest to export markets.

“ADM and Wilmar International Limited announce plans to partner on fertilizer, ocean freight and tropical oil refining.

“2013—ADM opens a soybean processing facility in Villeta, Paraguay, increasing ADM's South American oilseed crush capacity by more than 20 percent.

“ADM opens an intermodal container freight shipping and receiving facility in Decatur, Illinois.

“ADM constructs a feed premix plant in the city of Nanjing, in eastern China, bringing to three the total number of facilities in the company's Chinese premix network.

“2014—Juan R. Luciano is named the 12th president in ADM's 112-year history.

“ADM constructs a sweetener and soluble-fiber manufacturing complex at Tianjin, China.

“ADM acquires the remaining stake of global merchandiser Alfred C. Toepfer International.

“ADM opens its global headquarters in Chicago. Decatur, Illinois, remains ADM's North American headquarters; Sao Paulo, Brazil, is ADM's South American headquarters; Rolle, Switzerland, is ADM's European headquarters; and Singapore is ADM's Asia-Pacific headquarters.

“ADM acquires WILD Flavors, one of the world's leading suppliers of natural ingredients to the food and beverage industry.

“2015—Juan R. Luciano becomes the ninth chief executive in ADM's 112-year history.

“ADM expands its ingredient business by acquiring savory flavor producer Eatem Foods, and expanding processing capacity for nuts and seeds on the U.S. West Coast.

“ADM takes a series of actions to enhance its ability to connect supply and demand around the globe, including: opening new distribution and merchandising offices in Central America, Asia and Africa; acquiring a port and shipping agency in Brazil; announcing major expansions at port facilities in Argentina and Brazil; launching ARTCO Stevedoring; acquiring full ownership of strategically-located terminals on the Black Sea; and announcing a new merchandising and supply chain joint venture in Egypt.

“To enhance the company’s ability to serve the growing Chinese and Asian markets, ADM opens a soluble fiber plant in Tianjin, China, and a feed-premix plant in Nanjing; the company also announces further expansion in China with the construction of a feed-premix plant in Zhangzhou.

“ADM strengthens its global sweetener footprint by purchasing several European corn processing assets of joint venture Eaststarch C.V.

“2016–Juan R. Luciano becomes chairman of ADM’s board of directors.”

2123. Schneider, Keith; Slotnik, Daniel E. 2016. Dwayne O. Andreas, who turned Archer Daniels Midland into food giant, dies at 98. *New York Times*. Nov. 16. p. B16.

• **Summary:** Dwayne Andreas died on 16 Nov. 2016 in Decatur, Illinois. This excellent biography covers his success in building ADM, several ADM scandals, and his skillful use of the levers of power with friends such as Mikhail S. Gorbachev.

Dwayne Andreas was born into a Mennonite family on 4 March 1918 in Worthington, Minnesota—the 5th of 6 children of Reuben and Lydia Andreas. “His father moved the family to Lisbon, Iowa, where he purchased a grain elevator and raised livestock on a small farm.” Dwayne began working at the elevator at age 9.

In 1936 the family changed the name of the business from Reuben & Sons [Andreas & Sons] to Honeymead Products. In 1939 they moved it to Cedar Rapids, Iowa, where they built a soybean crushing plant, mainly to manufacture soybean meal for feed. “By this time Mr. Andreas had briefly attended Wheaton College in Illinois, and his younger brother Lowell had become active” in the family business. (Lowell Andreas, who spent his entire life in the soybean and grain business and was later president of ADM, died in 2009).

Honeymead became one of America’s major soybean processors. In 1945, after Reuben Andreas suffered several strokes, the family sold the Cedar Rapids plant, but not the Honeymead name, to Cargill.

Dwayne went to work for Cargill and rapidly rose in the ranks. He “met and befriended Hubert Humphrey, who had

just been elected mayor of Minneapolis. Humphrey became a political mentor to Mr. Andreas and the godfather of his son, Michael; Mr. Andreas became a major donor to Humphrey’s Senate and presidential campaigns.

In 1947, Dwayne and Lowell Andreas purchased a soybean crushing plant in Mankato, Minnesota, and named it Honeymead Products Company. That same year, Dwayne married Dorothy Inez, a single mother of a little girl.”

By 1952 Dwayne had resigned from Cargill to help his brother, Lowell, run Honeymead. They turned it into one of the largest soybean processors in the USA.

In 1960 Farmers Union Grain Terminal Association, a larger company, bought out the Andreas brothers for a sum large enough to enable them to start a bank, which became National City Bank. “Farmers Union then hired Dwayne as executive vice president, while Lowell managed the banking business.”

In 1966 Dwayne (age 48) was already a well-known Minnesota grain merchant when the Archer and Daniels families asked him and his brother, Lowell, to become executives and minority shareholders in their midsize farm products company. In 1967 Lowell became president. In 1970 Dwayne became chief executive (CEO) and then chairman of the board. In 1997 he stepped down as chief executive and in 1999 he also stepped down as chairman, succeeded by his nephew, G. Allen Andreas.

Dwayne’s wife, Dorothy, died a few years ago. Dwayne is survived by his son, Michael, two daughters, Terry Andreas and Sandra McMurtrie; nine grandchildren; and 23 great-grandchildren.

In 1970 when Andreas was named chairman and chief executive of ADM, the company’s soybean exports totaled \$1.5 billion. In 1999 when he retired as chairman, the export number had risen to \$7 billion and ADM was the biggest processor in the industry. ADM employed more than 23,000 people and operated in 50 countries.

The company was originally founded in 1902 by George A. Archer as a linseed crushing business in Minneapolis, Minnesota.

“Mr. Andreas often said that the central objective of his life was to provide food for the world’s hungry. In the 1950s he pressed members of Congress to support the Food for Peace grain-export program; President John F. Kennedy appointed him to the American Food for Peace Council.”

Personal friends of Dwayne Andreas were Presidents Richard M. Nixon, Ronald Reagan, Jimmy Carter and Bill Clinton. In 1985 he helped arrange the first meeting between Reagan and Gorbachev. “He was particularly close to president Nixon who opened China’s markets to ADM’s grain.” He worked with all of them to expand export markets, especially for soybeans. “He was largely responsible for making soybeans a top American agricultural export.”

Mr. Andreas was known for his lavish campaign

spending—which almost always returned to ADM more than it cost; he gave equally to both parties. ADM made billions off of federal ethanol programs, sponsored by Senator Bob Dole, a Kansas Republican.

“Fred Wertheimer, the former director of Common Cause, the public interest advocacy group, called Mr. Andreas’s political activities ‘a classic example of how the corporate welfare game in Washington works.’

“He provides huge amounts of political influence money,’ Mr. Wertheimer told *The Washington Post* in 1995, ‘and his company receives huge economic benefits, courtesy of the American taxpayer.’ The Justice Department investigated him and ADM four times in the 1970s and again in 1974. He was acquitted each time.

In 1984, while seeking re-election, Ronald Reagan visited ADM’s headquarters in Decatur, Illinois. “Mr. Andreas commissioned a seven-foot bronze statue to commemorate the event.”

Several members of the Andreas family control nearly 8% of ADM’s publicly traded stock, making them one of the wealthiest families in the United States.

Although much of Mr. Andreas’s access to power came from his hefty political contributions, another source of power was Bal Harbour, Florida, where, in the early 1950s, he helped found the Sea View Hotel, a cooperative. First he bought an apartment there then recruited other powerful politicians to do the same.

Note: A version of this article also appears in print on Nov. 17, 2016, in the New York edition on page B16.

2124. *Herald and Review (Decatur, Illinois)*. 2016. Obituaries: Andreas. Nov. 20. p. D3.

• **Summary:** Decatur—Mr. Dwayne O. Andreas, passed away on Wednesday morning, November 16, 2016, with family by his side at St. Mary’s Hospital in Decatur, Illinois. Since retiring, he divided his time between Decatur, IL and his home in Bal Harbour, Florida, spending time with family and friends.

“Mr. Andreas was proceeded in death by his wife D. Inez Andreas on October 10, 2012.

“A Memorial Mass is scheduled for 11:00 a.m. on Tuesday, November 29, at Holy Family Church in Decatur, IL. A celebration of his life will be held at his home in Bal Harbour, Florida in January...”

“Dwayne Orville Andreas was born in Worthington, Minnesota, March 4, 1918. He grew up in Lisbon, Iowa with his parents Reuben Peter (“R.P.”) and Lydia Stoltz Andreas. The fourth of five [sic, fifth of six] children, Andreas developed his profound respect for the American farmer and the importance of agriculture at a very young age on his family’s farm.”

“Tip O’Neill once stated ‘Andreas is the smartest man I’ve ever met.’”

“Mr. Andreas is survived by his 3 children Sandra

Andreas McMurtrie of Bethesda, MD, Terry Andreas and husband John Hewig of New York, NY, Michael Andreas and his wife Sally of Decatur, IL; grandchildren Meghan Quinn and husband Edward, William McMurtrie and wife Elizabeth, Amanda Herndon and husband Austin, Maria Andreas Guadalupe, all of Bethesda, MD, Anne Detwiler, George Bevis, both of New York, NY, Eric Andreas, Regan Deering and husband Brian, Melissa Chiligris, Benjamin Andreas and wife Heather, all of Decatur, IL; and 24 great grandchildren.

“Obituary written by family members.”

A color portrait photo shows Dwayne O. Andreas.

Note: This exact same obituary was published on *New York Times.com* from Nov. 21 to Nov. 22, 2016.

2125. *Two Moons, Leinana*. 2016. *Baconish: sultry and smoky plant-based recipes from BLTs to bacon mac & cheese*. Woodstock, Virginia: Vegan Heritage Press. xi + 209 p. Illust. (color photos). Index. 23 cm.

• **Summary:** Soyfoods: According to the index, miso is mentioned on 2 pages, tamari on one, tempeh on 3, tofu on 3 (smoked, silken, soft, extra-firm, and super-firm are described), and textured vegetable protein (TVP) on one page. Address: Vegan, Queens, New York.

2126. *Vippy Soya (Website printout)*. 2017. [www.indiamart.com/vippyindustrieslimited/](http://www.indiamart.com/vippyindustrieslimited/) 6 p. Retrieved Feb. 30.

• **Summary:** Vippy Soya is an Indian soybean crusher (manufacturer) and exporter, founded in 1973.

“We are an ISO 9001:2008 certified organization engaged in the manufacturing and exporting of Soya Products. All our products are known for high nutrition value, hygiene and consistent product quality.” There follow color photos of 3 unnamed soy products.

“About us: Established in the year 1973, Vippy Industries Limited was envisioned by Late. Mr. Prakash Mutha. Since then, we are engaged in the manufacturing and exporting of Soya Products. We know the importance of proteins and hence our soya oil & meal have ample quantity of this body building nutrient. Owing to this feature and overall development of our organization, we were awarded the first ISO 9001:2008 certification for any Soya Processing Company in India. Further, we were the first one to be awarded the ISO -9002 certificate by SGS in 1998 and later acquired ISO 9001-2000 certificate from BVQI. Being a pioneer producer of value added Soya products like Defatted Soya Flour, Soya Grits and Flakes for international as well as domestic market, we have achieved Golden Status Certificate from Government of India. All these rich-in-protein products are processed in our manufacturing unit with utmost care. With our advanced machines which are supplied by Buhler Ltd., Switzerland Krupp Maschinentechnik GmbH, Germany and Westfalia Separators, Germany, we produce FDS for defatted soya flour 200 Tonnes/day; extruder plant for

Soya TVP 20 Tonnes/day and full fat soya flour plant 10 Tonnes/day. Mr. Rahul Mutha, Managing Director of our organization has experience of more than 2 decades in oil seeds and oil extraction. Presently, under the mentorship of Mr. Rahul Hirway, we have been able to make a mark in both domestic and international markets.”

A Factsheet states:

“Company CEO: Praneet Mutha.

“Total number of employees: 100 to 500 people.

“Ownership type: Public Limited Company.

“Annual turnover: Rs. 1-2 Crore [Note: 1 crore = 10 million, therefore annual turnover is 10 to 20 million rupees].

“Our history: We began our voyage in 1973 as private Ltd. company and with time became one of the preferred names in the industry. Our first processing plant was installed which had the production capacity of 60 MT/day and present capacity of the same is 1800 MT/day. With time, we garnered a loyal client base and went for first IPO in 1986. At present our factory campus is spread over 20 acres of land at Dewas. Dewas is close near Indore which is a main commercial city in Madhya Pradesh, the soya bowl of India. Each year India produces 9.2 million Tonnes of Soyabean of which 60% comes from Madhya Pradesh. We export these soya products of which the nearest ports are Mumbai, Kandla & Jamnagar.”

A photo shows a Kosher Certificate.

Product portfolio: Soya Lecithin (Non GMO Soya Lecithin), Soyabean Meal, Soyabean TVP, Soyabean Refined Oil and Soyabean Flour = Defatted Soya Flour, Defatted Soya Grits and Defatted Soya Flakes.

“Vippy Industries Ltd. was the first ISO 9001:2008 certified Soya Processing company in India.”

“The Company holds the following prestigious awards given by Soyabean Processors Association of India:

“1999-2000:

“3rd Highest processor in private sector

“2nd Highest manufacturing maximum number of value added products.

“1998-99:

“1st Highest manufacturing maximum number of value added products

“2nd Highest processor in private sector

“2nd Highest exporter as manufacture exporter in private sector.

“1997-98:

“1st Highest manufacturing maximum number of value added products.

“2nd Highest processor in private sector.

“2nd Highest exporter in private sector.”

2127. *Organic and Non-GMO Report (The) (Fairfield, Iowa)*. 2017. “Organic” imports of corn and soybeans not really organic, investigation finds. No. 174. June. p. 22-23.

• **Summary:** “Three shipments representing millions of

pounds of so-called organic soy and corn were discovered to be conventional, through a *Washington Post* investigation. The mysterious transformation into ‘organic’ raises concerns about the USDA’s lax enforcement system for organic imports. The significant organic mark-up earned sellers millions of dollars; over 20 million pounds were distributed to unsuspecting mills and farms.

“Over 50 percent of U.S. organic corn and soybeans are imported—mostly for animal feed. All three shipments passed through Turkey; pesticide residue has been found on half of products originating there. Between 2014 and 2016, Turkish shipments of organic corn and soybeans rose astronomically, arousing suspicion. The imports caused prices to drop by 25 percent, harming U.S. organic farmers who sometimes have crop gluts.” The second shipment, 36 million pounds of soybeans, originated from Ukraine and Turkey, arriving in Stockton, California. Documentation showed the soybeans weren’t organic—pesticides were present, and the soy came from ADM Ukraine that doesn’t trade in organics.”

“The Organic Trade Association called on ‘organic businesses and consumers to join us by asking our elected officials to call on USDA to up its game and protect organic consumers and food makers from bad actors.’

“Meanwhile, organic watchdog Cornucopia Institute called on the USDA to replace the leadership at the National Organic Program.

“(Source: Washington Post)”

2128. *Organic and Non-GMO Report (The) (Fairfield, Iowa)*. 2017. ADM invests in production of non-GMO high-protein soybean meal: Non-GMO soybean processing capabilities expanded to meet growing demand across Europe. No. 178. Nov. p. 3.

• **Summary:** “Archer Daniels Midland Company will be making further investments at its crushing facility in Straubing, Germany to produce non-GMO high-protein soybean meal. The added capability will allow the site to serve ADM’s growing portfolio of soybean meal customers and support local farmers in increasing the region’s soybean output. “This investment demonstrates ADM’s commitment to meet customer demand for non-GMO soybean products in this region,” said Rene van der Poel, general manager ADM Straubing. “In addition, it gives local farmers a further incentive to grow more non-GMO soybeans and benefit from bringing soybeans into crop rotations.”

“The demand for non-GMO soybean meal from European soybeans is growing steadily. With the production of non-GMO high-protein soybean meal, ADM will be able to better meet the needs of its poultry feed customers, as well as the dairy and pig feed markets.” Address: Editor.

2129. Cox, John H. 2017. Current status of the Soyfoods Association of North America (Interview). *SoyaScan Notes*. Dec. 27. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** John took over from Nancy Chapman as the new Executive Director of the Soyfoods Association of North America in March 2017.

25 companies are now members of SANA. The two largest companies are ADM and DuPont, which pay \$30,000 each per year. The annual budget is \$250,000. The two largest tofu company members are Hinoichi and Nasoya. The annual meeting is held at the Natural Foods Expo on the East Coast.

SANA now has a competitor—the Plant-Based Foods Association. Jaime Athos of The Tofurky Company recently joined the competitor. Address: Executive Director, Soyfoods Assoc. of North America, 1101 17th Street, NW Suite 700, Washington, DC 20036. Phone: 202-986-5600.

2130. Johnson, Becky. 2017. *The tofu cookbook: high-protein, low-fat, low cholesterol, 80 recipes*. London: Anness Publishing (Lorenz Books imprint). 176 p. Illust. (color photos). Index. 24 cm.

• **Summary:** A very attractive book with superb photos. Contents: Introduction: making tofu, nutrition, types of tofu (firm tofu, silken tofu, marinated tofu, smoked tofu, frozen tofu, deep-fried tofu, other bean curd products {bean curd skins, bean curd sticks, tempeh, textured vegetable protein, soya dairy products—milk, cream, yogurt, etc.}), cooking with tofu, preparing tofu (pressing, searing, cutting, pan-frying, and deep-frying firm tofu, and preparing thin deep-fried tofu {aburaage}), processing silken tofu, draining tempeh, marinating tempeh, cutting tempeh), tofu marinades.

Soups, snacks & starters. Salads & sides. Vegetarian menus. Grains, noodles & pasta. Meat & fish mains. Desserts. Nutritional notes (a nutritional analysis accompanies each recipe).

In addition to hundreds of tofu recipes, 4 pages mention “bean curd skins,” 1 mentions “bean curd sticks,” 1 mentions miso, 8 mention tempeh, 1 mentions textured vegetable protein (TVP). Address: Chef, England.

2131. Rödl, Malte B. 2018. *Marketing meat alternatives: meat myths and their replication in advertising for plant-based meats*. In: Diana Bogueva, Dora Marinova, & Talia Raphaely, eds. 2018. *Handbook of Research on Social Marketing and Its Influence on Animal Origin Food Product Consumption*. Hershey, Pennsylvania: IGI Global. xxviii + 453 p. See p. 327-43. Chap. 22. Feb. Series: *Advances in Marketing, Customer Relationship Management, and e-services (AMCRMES)*. [59 ref]

• **Summary:** “Meat alternatives have been proposed as one solution to decrease meat consumption and thus its negative effects on individuals and the environment. Using three meat myths identified in literature on meat consumption—meat eating is normal, natural, and necessary—this chapter discusses how they emerge in six selected print adverts: (1) normal: dishes containing meat alternatives are portrayed

as traditional, perpetuating normality; (2) natural: the myth that it is natural to eat meat is not explicitly opposed, but bypassed; (3) necessary: meat alternatives are portrayed as even more necessary for good health than meat. The author proposes changes to neutralise these meat myths; but they are unlikely to be adopted by advertising due to its commercial goals. Although meat alternatives are theoretically preferable over meat (and can help individual transitions to vegetarianism), their marketing perpetuates meat myths, and may therefore reinforce a meat-centered culture.”

Note: TVP is mentioned 8 times, soy 5 times, and tofu, tempeh and seitan once each in this chapter. Address: Sustainable Consumption Inst., The University of Manchester, Oxford Road, M13 9PL, UK.

2132. Roth, Matthew D. 2018. *Magic bean: the rise of soy in America*. Lawrence, Kansas: University Press of Kansas. xi + 356 p. June. Illust. Index. 23 cm. [86 + 1085 endnotes]

• **Summary:** This is the best book we have seen to date on the history of soybeans and soyfoods in the United States. Contents: List of illustrations. Acknowledgments. Introduction: *Destined to Succeed?* 1. *Crossing Oceans*. 2. *Jumping the Gun*. 3. *Taking Root*. 4. *Exploring All Avenues*. 5. *Answering the Call*. 6. *Pushing the Boundaries*. 7. *Thriving in the Shade*. 8. *Rising into View*. 9. *Cresting the Peak*. Epilogue: *Here to Stay?*

This outstanding book, based on the author’s PhD thesis, is a series of carefully researched, well written and well documented biographies of various men, women and institutions that were important in introducing soybeans and soyfoods to the United States. Some of the men and women whose detailed biographies are presented here (such as William Morse, Henry Ford or Harry Miller) are well known to those interested in the history of soybeans and soyfoods in the USA; yet in each case many important and interesting new details are added to the life story of each person. Other men and women discussed here (such as Harry Harrison, William Poage, Tsuru Yamauchi or Yamei Kin) are largely unknown to soybean historians, and their inclusion in this thesis will help to ensure that they are given the place they deserve in future histories of soybeans and soyfoods in the United States.

The notes (endnotes), footnotes and bibliography are a treasure. Each chapter has its own series of endnotes, whose numbering starts over again with one at the beginning of each chapter, for a total of 1,085 endnotes. The bibliography, containing 86 references, is divided into two sections: (1) Archival sources. (2) Books, chapters, and articles.

Why so many new notes and bibliographic references? First, because the author did extensive archival research, much of it in archives that have not been previously examined for material on soy. Second, because in recent years many books and periodicals (including newspapers) have been scanned, digitized and made available to

researchers and the general public. A search, for example, on “Yamei Kin” will produce a wealth of results in unexpected places.

Contents: Introduction: A century of soybeans.

1. Crossings: The picture bride–Tsuru Yamauchi, The missionary–Harry Miller, The plant explorer–Frank N. Meyer.

2. Footholds: The agronomist–William J. Morse, The emissary–Yamei Kin, The missionary [Harry W. Miller].

3. Field days: The extension specialist–J.C. Hackleman, The salesman–A.E. Staley, The agronomist [William Morse].

4. Manifold Uses: The industrialist–Henry Ford, The chemist–Percy Lavon Julian, The board–Chicago Board of Trade, The missionary [Harry Miller].

5. Wartime substitute: The picture bride [Tsuru Yamauchi], The nutritionists–Clive and Jeanette McCay, The investigator–Warren Goss.

6. Hidden Ingredient: The congressman–William Poage, The breeder–Edgar E. Hartwig, The middleman–Dwayne Andreas, The chemist [Percy L. Julian].

7. Soytopia: The writer–Harry Harrison, The guru–Stephen Gaskin, The artisans–William Shurtleff and Akiko Aoyagi, The picture bride [Tsuru Yamauchi].

Bibliography.

When asked about the unusual structure of the table of contents and the thesis, the author replied (7 Dec. 2015): “The short answer is that the way I structured the dissertation was probably too complicated by half. The idea was to anchor each chapter section to a person, each of whom was either important in their own right and/or was a stand-in for a larger group. Morse, of course, was both: a key figure and a representative USDA ‘agronomist.’ The titling convention was to have the specific person named the first time they appeared, but have only the generic name, such as Agronomist, appear in subsequent chapter-section names. Yamauchi, while not central in her own right, was a way to anchor sections about the Japanese-American community; hence her appearance in three chapters.”

Note: This book was also published in the *Journal of American History*, Vol. 107, issue 1, June 2020. Address: Philadelphia, Pennsylvania 19123.

2133. Cox, John H. 2018. Re: Planning to write an article about SANA’s 40th birthday on July 30. Letter (e-mail) to William Shurtleff at Soyinfo Center, July 27. 1 p.

• **Summary:** “Hi Bill,

“Thanks for your message. I’m writing an article about SANA’s 40th for the SANA newsletter. I plan to make it about what the organization has accomplished along with an appeal for it to continue. I’d like to include some of the history, certainly a photo would be nice. This will be in the SANA newsletter, mostly for members, but hopefully shared. I would love a quote from you about how the industry has changed–the good changes. What was it like at that first

meeting?

“SANA will do everything we can to protect the use of ‘soymilk’ to describe soymilk. The FDA seems to know that if they interfere with soymilk being labeled as soymilk then they will be sued. I’m not sure the members are ready for this, but I will lead them if this happens. I’m not sure I have the complete history about ‘the outcome of this issue last time around.’ Certainly, the 1997 SANA petition to FDA was a smart move.

“SANA has 20 members, only 12 are making soyfoods. There are only two big ingredient companies–DuPont and ADM. We also have DanoneWave and two tofu companies (House Foods America and Nasoya/Pulmuone.) We continue to lose members and I’m not sure how to turn it around. It is an exciting time for plant-based foods, but soy’s brand still needs help, as you know.

“Thanks for any historical information you can share with us. Good luck with your big project–I would love to know more about it.

“Best wishes, John.” Address: Executive Director, Soyfoods Assoc. of North America, 1101 17th Street, NW, Suite 700, Washington, DC 20036. Phone: 202-331-2451.

2134. Reuters. 2019. Global commodity traders to monitor deforestation in Brazil’s savannah (Web article). <https://uk.reuters.com/article/us-brazil-environment-cerrado-idUKKCN1Q42D8>

• **Summary:** “Brasilia (Reuters)–Six major commodities traders, including Cargill Inc and Bunge Ltd, have agreed to a common mechanism to monitor soybean supply chains for deforestation in Brazil’s vast Cerrado savannah.”

“Companies belonging to the Soft Commodities Forum network that signed onto the agreement to monitor their soy supply chains in the Cerrado include Archer Daniels Midland Co, COFCO International, Glencore Plc’s agriculture unit and Louis Dreyfus Company, according to a Forum statement.”

“While many other trading firms have committed to reaching zero net deforestation in their supply chains globally by certain dates, they have yet to make specific pledges to end destruction in the Brazilian savannah.”

2135. WISHH. 2019. WISHH: World Initiative for Soy in Human Health (Website printout) (Continued–Document part III). [www.wishh.org](http://www.wishh.org) 10 p. Retrieved March 14.

• **Summary:** Continued: (9) “Dec. 12, 2014. ASA/WISHH Regional Director–Africa Traveling in Ivory Coast:

“The American Soybean Association’s World Initiative for Soy in Human Health (ASA/WISHH) program’s Regional Director–Africa, Josh Neiderman, was in Abidjan, Cote d’Ivoire (RCI) this week with the WISHH French Speaking Africa consultant Mamadou Bousso for discussions with the local government’s bureau that buys food for the Ivorian government’s school lunch program.

The Ivorian government is interested in textured soy flour as a replacement for the canned sardines and other expensive protein sources they use currently.

“WISHH is sending a container with 19 MT of TVP™ from ADM, the winning bidder in a recent Quality Samples Program (QSP) tender and the team was planning the technical training activities to be conducted by personnel from the National Soybean Research Laboratory (UIUC). The USDA provided the funds for the sample program and the preliminary planning trip by Neiderman and Bousso. The RCI provides a daily lunch to over half a million children each day. Analysts estimate that their need for textured soy flour will approach 1,000 tons.

(10) “Oct. 17, 2014. ASA/WISHH Welcomes New Project Officer for Africa to the WISHH Team:

“Chris Slemper is the Project Officer–Africa for the American Soybean Association’s World Initiative for Human Health program (ASA/WISHH). Chris provides support for WISHH projects in Africa. Before working at WISHH, Chris served as an agriculture Peace Corps volunteer in Ghana. While serving in the Peace Corps, Chris provided agriculture extension services to a group of cashew farmers in the Brong Ahafo region of Ghana. His efforts focused on improving local farmer capacity through community based initiatives centered on business literacy, best management practices, and volunteerism. Chris earned his Master’s degree in forestry from Southern Illinois University, Carbondale. His studies focused on improving community capacity for sustainable watershed management in the St. Louis Metro East region.”

(11) “Sept. 26, 2014. ASA/WISHH Executive Director Travels to South Africa to Talk Market Development:

“Jim Hershey, Executive Director of the American Soybean Association’s World Initiative for Soy in Human Health (ASA/WISHH) program traveled to South Africa this week. On Tuesday, he met with a U.S. soy importer Impilo Foods who buys defatted soy flour for blending with local corn to make fortified corn-soy blend.

“Hershey also met with FAS/USDA’s Minister-Counselor Eric Wenberg to discuss USDA and checkoff-funded market development programs in Africa. Wenberg was excited to learn that ASA/WISHH is opening a sub-saharan region office in Ghana. While in South Africa, Hershey also participated in the Center for Sustainable Livelihoods Soy Symposium. Hershey ends the week with a meeting with DuPont Pioneer’s Regional Director–Africa Pam Chitenhe.

(11a) “Sept. 4, 2014. ASA/WISHH Hosts Africa Bakers and Business Owners Travel to U.S.”

“Reprinted from ASA Leader Letter... The American Soybean Association’s World Initiative for Soy in Human Health (ASA/WISHH) Program Manager–Africa, Erica Morrow and Regional Manager–Africa, Josh Neiderman traveled to Fargo, North Dakota, last week. Under the United

States Department of Agriculture’s Market Access Program (MAP), ASA/WISHH sponsored nine bakers and business owners from Burkina Faso and Cote d’Ivoire to the Northern Crops Institute (NCI) for a Soy in Baking training. During the course at NCI, participants learned about incorporating U.S. soy flour into their baked goods. While in Fargo, the group visited with Joel Thorsrud of the United Soybean Board and members of the North Dakota Soybean Council. Additional visits were made to two local farms and a grain elevator. Following the visit to North Dakota, the team traveled to Minneapolis, Minnesota, this week to meet with Pam Schutte at CHS, Inc.

Photo: “African Bakers and business owners at Northern Crops Institute.”

(12) “May 2012. WISHH Hosts Feed Training Mission for Southern Africans:

“WISHH organized a training mission to the United States for 10 feed manufacturing and poultry company representatives from four Southern African countries on March 5-9. The effort is part of WISHH’s work with the U.S. Agency for International Development (USAID) Southern Africa Trade Hub (SATH).

“For the first time, participants received U.S. feed mill training because WISHH understand the importance of hands-on learning and the impact of seeing state-of-the-art feed manufacturing and laboratory facilities.

“The participating companies account for 90% of commercial poultry and feed producers in the Southern Africa area, according to SATH, and were from: Malawi, Namibia, South Africa and Zambia.

“WISHH started the trip in Washington, D.C. where participants met with the American Feed Industry Association and the Center for Veterinary Medicine at the Food and Drug Administration. They then traveled to Kansas State University’s International Grains Program facility for a one-week training on feed manufacturing. In addition to tours of local facilities and laboratories, presentations included feed mill design, management, use and maintenance.

“The course covered a wide spectrum of very important subjects, and the diversity in the group attending the course insured an insight into a very wide range of topics. The course presenters were very helpful in answering questions, and the visits to the factories were impressive,” said Cillié Taljaard of Extru Feeds in South Africa. “I am currently involved in the extrusion of soy and maize, and therefore I found the extrusion part of the course most interesting and relevant to my daily business. The energy-saving techniques were also something that I could apply to my current daily manufacturing processes.”

“In addition to the planned presentations and tour visits, WISHH arranged additional tours of the Kansas State University dairy, sheep and goat units at the request of the participants.



“USAID’s Southern Africa Trade Hub (SATH) works to increase international competitiveness, intra-regional trade, and food security in the Southern African Development Community (SADC) region. SATH delivers targeted technical assistance to governments, the private sector, and civil society organizations in support of advancing regional integration and increasing the trade capacity of selected value chains within Southern Africa.

“During a tour of the feed manufacturing operations of Midwest Ag Services in Seneca, Kansas, participants learned about manufacturing various soy-based feed products. This knowledge could potentially aid the Southern Africans by increasing the number of products manufactured for customers or the types of feed they use in their poultry operations.

“During a tour of the feed manufacturing operations of Midwest Ag Services in Seneca, Kansas, participants learned about manufacturing various soy-based feed products. This knowledge could potentially aid the Southern Africans by increasing the number of products manufactured for customers or the types of feed they use in their poultry operations.”

(12) April 2012. Soy packs protein power!:

“April was National Soyfoods Month and the National Soybean Research Laboratory (NSRL) at the University of Illinois encouraged everyone to explore new ways to incorporate healthy soyfoods into their daily diets. Soyfoods are an easy way to enhance protein and provide a convenient alternative that lowers the saturated fat and cholesterol in many recipes.

“WISHH works year round with food manufacturers, livestock producers and aquaculture farms to increase the use of U.S. soy protein to improve the health and well-being of the world’s protein deficient.

“Soy’s biggest nutritional claim to fame is the fact that it is a complete protein, one of the only plant proteins that

contains all nine essential amino acids that our bodies need to function properly. A ½ cup of cooked soybeans supplies about 1/3 of a person’s necessary daily protein. That protein is incredibly filling. Plus, soybeans are cholesterol-free, low in saturated fat, and provide important Omega-3 and Omega-6 fatty acids. Soybeans are also a great source of fiber and are rich in vitamins, minerals and antioxidants. A single glass of soymilk contains over 6 grams of protein and is lactose free.

“Soy offers many health benefits and that is positively impacting the popularity and use of soy. Eating soy may also help in the prevention of certain illnesses such as heart disease, kidney disease, cancers, osteoporosis and diabetes. Soy foods are an excellent choice for weight management as protein helps delay feelings of hunger.

“The history of soybeans has its roots in China as early as the 11th Century and it is known as one of the first crops grown by man. The first soybean plants came to North America in 1765 and as they say, the rest is history. Today, 3.06 billion bushels of soybeans are produced in the U.S. and they take on many forms after harvest and processing. Some examples include soy meal, soy flour, soymilk, tofu, textured soy protein and soy oil.

“Learn more at: [www.soyfoodsmoth.org](http://www.soyfoodsmoth.org)”

2136. National Oilseed Processors Association (NOPA). 2019. Members (Website printout–part). [www.nopa.org/about-us/members/](http://www.nopa.org/about-us/members/) Retrieved April 30.

• **Summary:**

“Ag Processing Inc.

“Archer Daniels Midland Company

“Bunge North America, Inc.

“Cargill, Inc.

“CHS Inc.

“Consolidated Grain & Barge Company

“Express Grain Terminals, LLC

“Incobrasa Industries, Ltd.  
 “Louis Dreyfus Company LLC  
 “Owensboro Grain Company, LLC  
 “Perdue Grain and Oilseed, LLC  
 “Riceland Foods, Inc.  
 “Zeeland Farm Soya.”  
 “Associate Members:  
 “Commodity Specialists Company  
 “Feed Energy Company  
 “J.M. Smucker Company  
 “Land O’Lakes Feed  
 “Pilgrim’s  
 “Smithfield Foods Inc.  
 “Tyson Foods, Inc.

“U.S. Commodities, LLC” Address: 1300 L Street, NW, Suite 1020, Washington, DC 20005. Phone: 202.842.9126.

2137. Seibert, Jeanne. 2019. Re: Founding and early history of NSPA. Letter (e-mail) to William Shurtleff at Soyinfo Center, July 17. 1 p.

• **Summary:** “Here is the information that I was able to find:

“Sometime in early 1930, several soy bean crusher manufacturers met in Chicago to discuss the first rules to govern the purchase and sale of soy bean oil.

“In May 1930 at the first general meeting of the group the term “soybean” (one word not two) was adopted. At this same meeting, Code of Ethics and Constitution and By-Laws were presented by the Chairman of the Organization Committee, Otto Eisenschiml (Scientific Oil Compounding Co.) and adopted. Trading Rules were presented by Trading Rules Committee Chairman, Harry Haze of Harry Haze, Inc. and adopted.

“The Articles of Incorporation were granted from the State of Illinois in May of 1936.

“I have attached the list of representatives and their respective companies to this email. Some of the names may be misspelled because I had to create them from the individual’s handwriting. I cannot provide any copies because what we have in archive are very thin ‘onion skin’ carbon copies and the high resolution copiers of today cannot read them. All you get is a dark shadow on the page.

“Unfortunately, I was unable to find any information prior to 1930 nor was I able to find the publication on soy flour.

“I did find a very interesting article on Gene A.E. Stanley from *American Magazine* dated June 1926, which I have attached too. This is a photocopy of a copy, which is why parts are cut off. I do not have the original clipping.

“Good luck with your research and book.”

Attachment 1:

“May 21, 1930

“Underwriting of original By-Laws, Code of Ethics, and Trading Rules are established. Firms followed by company attendee are listed below.

“Archer-Daniels-Midland Company  
 “By: W.H. Eastman  
 “Allied Mills Inc.  
 “By: H.G. Atwood  
 “Staley Sales Corporation  
 “By: H.T. Morris  
 “Funk Bros. Seed Co.  
 “By: I.C. Bradley  
 “Scientific Oil Company Co.  
 “By: Otto Eisenschiml  
 “Spencer Kellogg & Sons Sales Corp.  
 “By: Robt. G. Bennet  
 “Shellabarger Grain Products Co.  
 “By: W.L. Shellabarger  
 “Evans Milling Co.  
 “By: Edw. D. Evans  
 “Lafayette Milling Co.  
 “By: B.C. Williams  
 “Armstrong Paint & Varnish Works.  
 “By: R.G. Dahlberg  
 “Falk & Co.  
 “By: D. Lewis  
 “Central States Chemical Co.  
 “By: Walter C. Flumerfelt  
 “List of Witness Signatures:  
 “Ralston Purina Co.–E.F. Johnson  
 “Standard Soybean Mills–H.R. Schultz  
 “Central Soya Co., Inc.–H.D. Egly  
 “Spencer Kellogg & Sons Sales Corp.–J. Johnson  
 “Iowa Millings Co.–Joe Sinaiko  
 “Illinois Soy Products -  
 “The Larrowe Milling Co.–F.W. Thomas  
 “National Mills Inc.–J.H. Ball  
 “Plymouth Processing Mills -  
 “Buckeye Cotton Oil Co.–M. Knapp  
 “J.B.D. Hauler–Allied Mills Inc.  
 “Funk Bros. Seed Co.–E.D. Funk Jr.  
 “A.E. Staley Manufacturing Co.–E.K. Scheiter  
 “Archer Daniels Midland Company–Whitney Eastman  
 “Shellabarger Grain Products Co.–John  
 “National Soybean Processors Association  
 “Members:  
 “Allied Mills, Inc. J.B. DeHaven Board of Trade Bldg., Chicago  
 “American Soya Products Corp. H.O. McCutchan  
 Evansville, Ind.  
 “Archer-Daniels-Midland Co. W.H. Eastman Box 603,  
 Milwaukee, Wis.  
 “Buckeye Cotton Oil Co. W. Youtsey Cincinnati, Ohio  
 “Cairo Meal & Cake Co. A.T. Madra Cairo, Illinois  
 “Central Soya Co., Inc. H.D. Egly Ft. Wayne, Ind.  
 “Funk Bros. Seed Co. E.D. Funk Jr. Bloomington, Ill.  
 “The Glidden Co. W.G. Dickinson 2670 Elston Ave.,  
 Chicago

“Illinois Soy Products Co. I.D. Sinaiko Springfield, Ill.  
 “Iowa Milling Co. Joe Sinaiko Cedar Rapids, Iowa  
 “Larrowe Milling Co. F.W. Thomas Detroit, Mich., Box 68, N. End. Station  
 “I.F. Laucks, Inc. H.F. Armstrong Portsmouth, Va.  
 “National Mills, Inc. J.H. Ball Quincy, Ill.  
 “Norris Grain Co. E.M. Gallup Board of Trade Bldg., Chicago  
 “Old Fort Mills, Inc. G.A. Holland Marion, Ohio  
 “Plymouth Processing Mills C.J. Simmons Ft. Dodge, Iowa  
 “Ralston–Purina Co. J.H. Caldwell St. Louis, Missouri  
 “Shellabarger Grain Prod. Co. W.L. Shellabarger Decatur, Ill.  
 “Soy Bean Processing Co. W.E. Flumerfelt Waterloo, Iowa  
 “Spencer-Kellogg & Sons Sales J.E. Johnson 105 W. Adams St, Chicago, Ill.  
 “A.E. Staley Mfg. Co. E.K. Scheiter Decatur, Ill.  
 “Standard Soybean Mills H.R. Schultz Centerville, Iowa  
 “Ralph Wells & Co. Ralph Wells Monmouth, Ill.  
 “Clinton Company E.W. Myers Clinton, Iowa  
 “Associate Members:  
 “Barlett Frazier Co. 111 W. Jackson Blvd. Chicago, Ill.  
 “Cummins & McAlister 30 E. Broad Street Columbus, Ohio  
 “Harry Haze, Inc. 435 N. Michigan Ave. Chicago, Ill.  
 “Procter & Johnson 520 N. Michigan Ave. Chicago, Ill.  
 “H.L. Raclin, Inc. 135 S. LaSalle St. Chicago, Ill.  
 “Roesling, Monroe & Co. 327 S. LaSalle St. Chicago, Ill.  
 “Scientific Oil Compounding Co. 1637 S. Kilbourn Ave. Chicago, Ill. [Scientific Oil Compounding Co.]  
 “Snow Brokerage Co. 221 N. LaSalle St. Chicago, Ill.  
 “Soy Bean Products Co. 4900 W. Flournoy St. Chicago, Ill.  
 “Stein, Hall Mfg. Co. 2841 S. Ashland Ave. Chicago, Ill.  
 “Sterne & Sons Co. 332 S. LaSalle St. Chicago, Ill.  
 “Wilbur-Ellis, Inc. 141 W. Jackson Blvd. Chicago, Ill.  
 “Zimmerman-Alderson-Carr Co. 105 W. Adams St. Chicago, Ill.  
 “Special Associate Members:  
 “Dr. Roger Adams University of Illinois Urbana, Ill.  
 “Dr. H.E. Barnard Farm Chemurgic Council Dearborn, Michigan.  
 “K.E. Beeson Purdue Experiment Station W. Lafayette, Indiana.  
 “Dr. W.L. Burlison University of Illinois, Urbana, Illinois.  
 “Dr. A.A. Horvath, P.O. Box 385 Newark, Delaware.  
 “H.W. Irwin Swift & Co., Union Stock Yards, Chicago, Illinois.  
 “Dr. H.R. Kraybill Purdue University Lafayette, Ind.

“Glen H. Pickard United Chemical & 4100 S. Ashland Ave.

“L.M. Tolman Organic Products Co. Chicago, Ill.”  
 Address: Secretary, National Oilseed Processors Assoc.,  
 1300 L Street, NW #1020, Washington, DC 20006. Phone:  
 202-864-4365.

2138. Ruiz, N.; Parsons, C.M.; Stein, H.H.; Coon, C.N.; van Eys, J.E.; Miles, R.D. 2020. A review: 100 years of soybean meal. *Feedstuffs*. Jan. 25. \*

• **Summary:** The beginning of a quantitative systematic approach to animal nutrition is the landmark work of Henneberg and Stohman in 1860 in which they delivered for the first time proximate analysis [See: Henneberg, W., and F. Stohmann. 1860. *Beiträge zur Begründung einer rationellen Fütterung der Wiederkäuer* [Contributions to the rational feeding of ruminants. 2 vols.]].

“The 50-year historical review of soybean meal (SBM) published in *Feedstuffs* in 1970 by Dr. J.W. Hayward highlighted many of the pertinent advancements concerned with animal nutrition, product development and promotional aspects of U.S. SBM.”

“In the 1920s and 1930s, SBM was unknown to many companies and nutritionists and it was not used extensively in animal feeds. In fact, six U.S. states were not using SBM in feed formulas for poultry. Hayward pointed out in his review how the use of SBM in broiler diets had increased from little or none used in 1930 to 2.5 million tons in 1970. To promote its use in animal nutrition, Hayward and a special committee in 1938 decided to visit nutritionists at the U.S. Department of Agriculture in Beltsville, Md., and several universities and spread the word about SBM.”  
 Address: 1. Nelson Ruiz Nutrition, LLC.

2139. *SoyaScan Notes*. 2020. What is the water footprint of soybeans and various soyfoods? (Overview). April 24. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** We were asked this question by Lola Hernandez of *Vegetalmente.com*. She wrote:

You can see the water footprint definition in this link and, as you requested, I’m also including the carbon (CF) and water footprint (WF) for tofu and tempeh here:

“Tofu (1kg): 2.523 liters (WF) 0.72 kg (CF)

“Tempeh (1kg): 2.145 liters (WF) 0.56 kg CF

“We are managing several sources, but these two are very complete:

<https://www.thelifeimpact.com/carbon-footprint-of-foods> and

<https://www.thelifeimpact.com/water-footprint-of-foods>

“So far, we have gathered more than 150 references, but I’m afraid they are all in Spanish by now. Hopefully, we’ll have an English version in the meantime.

“If you ever find a source for TVP (textured soy) water and carbon footprint, I’d be very thankful if you share it with

me.

Best regards

“Lola Hernández

“Directora de expansión

“( +34) 622 13 23 43

“www.vegetalmente.com

Note 1. The first link is “Carbon footprint of foods: Highest to lowest CO<sub>2</sub>e, per kilogram (=2.2 pounds). “Avoiding meat and dairy is the single biggest way to reduce your impact on Earth’ according to the most comprehensive analysis of the damage farming does to the planet”–The Guardian (referring to a 2018 Oxford University Study).”

“CO<sub>2</sub>e stands for “carbon dioxide equivalent” and is the common unit for describing greenhouse gases.”

A bar chart shows the carbon footprint of various foods, ranging from lamb (39.2 kg CO<sub>2</sub>e), beef (27) and cheese (13.5) at the high end to lentils (0.9) and tomatoes (1.1) at the other. Tofu (2.0) is the 4th from the lowest.

2140. *SoyaScan Notes*. 2020. Brief chronology of The Drackett Company’s work with soybeans, soy protein, and Azlon (Overview). June 5. Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** 1910–The Drackett Co. is organized as a partnership named P.W. Drackett and Sons. Its main business is distributing a line of bulk chemicals to industrial users. In 1933 the company adopted its present name.

1918-1928–Drackett is America’s leading manufacturer and seller of U.S.P. grade Epsom salts.

1923–Drackett starts production of Drano (a chemical composition used to clear clogged drains), which soon becomes the company’s major consumer product.

1934-36–Drackett starts production of Windex (a spray that cleans windows without water), which soon becomes its second major consumer product. Both products are made at Drackett’s plant at 5020 Spring Grove Ave. in Cincinnati, Ohio.

1935-36–Laboratory studies at Drackett lead to the design of an original pilot plant for oil extraction by the solvent method. Laboratory research is also conducted on the extraction of soy protein from defatted soybean flakes.

1935, fall–Drackett submits samples of industrial soy protein to the Champion Coated Paper and Fiber Co. for examination as to use in paper coatings in place of milk casein.

1936–A pilot plant for making industrial soy protein begins operation inside Drackett’s plant at 5020 Spring Grove Ave. in Cincinnati, Ohio.

1937 Feb.–A solvent extraction pilot plant begins operation on Spring Grove Ave. and continues for 3 years.

1938 April–The world’s first soy protein fiber (and the first experimental textile fiber made from a plant protein) is exhibited by Robert Boyer of the Ford Motor Co. at the

Fourth Annual Conference of the Farm Chemurgic Council in Omaha, Nebraska.

1938–Drackett purchases 60-75 acres of farmland at Sharonville, Ohio (several miles north of the Spring Grove Ave. headquarters), for a solvent extraction plant. Ground is broken in Sept. 1939.

1940, first quarter–Drackett starts to work cooperatively with The Ford Motor Co. to develop a soybean protein suitable for spinning into fiber from which upholstery cloth could be made.

1941 Jan.–Soybean oil extraction begins at the Sharonville plant. Drackett’s initial investment was about \$1.5 million. The plant has an annual capacity of 35,000 tons of soybean meal and 15 million lb of soybean oil.

1941–Drackett’s first industrial soy protein isolate is sold commercially. 15,018 lb were produced and 7,039 lb were sold during the year. By 1942 this soy protein was brand-named Alysol. Some of it was sold to the Ford Motor Co. to make experimental soy protein fibers.

1941 Dec. 7–Japanese military forces attack Pearl Harbor. The United States enters World War II. Henry Ford is soon told to stop making automobiles and to build an assembly line for making bombers for the war effort.

1942 May–The Ford Motor Company produces its first B-24 Liberator bomber using a giant assembly line one mile long that it had constructed at Willow Run in Michigan. Thereafter Ford made one bomber per hour–plus engines, gliders, tanks, armored cars, jeeps, etc.

1943 Nov.–Drackett purchases the Ford Motor Company’s soy protein and soybean fiber spinning operations. Robert Boyer, Francis (Frank) Calvert, and William Atkinson go to Drackett from Ford as part of the deal.

1943 Dec. 2–Drackett starts commercial production of Soybean Azlon, the world’s first commercial fiber made from plant proteins. The fibers were used mainly in felt hats by the America Hat Corporation.

1944?–Drackett is now making a new line of industrial soy proteins named Drackett Protein 110, 112, and 220. The first 2 are for use in paper coatings and sizings, the latter for water-based paints.

1945–The Drackett Co. is the largest soybean processor in Ohio.

1946–Drackett finishes construction of 18 new concrete silos at Sharonville, costing \$500,000, to store one million bushels of soybeans.

1947, mid–Drackett’s plant making industrial soy protein isolates begins operation at Sharonville. It also makes Ortho Protein and Impact Plastic Molding Compounds.

1948 March–Harry R. Drackett, the company’s second president, dies. His son, Roger Drackett, is elected president of the company.

1949 July 12–Drackett’s soybean plastics operations are discontinued completely.

1949–Robert Boyer leaves The Drackett Co. when it shut down its Azlon fiber spinning plant. He begins research on developing the world’s first edible soy protein fibers—to imitate muscle fiber in meats.

1949 Sept.–Drackett introduces Charge dessert for dogs, which contains soya bean flour as an ingredient.

1957 July 1–Drackett sells its entire isolated soy protein business to the Archer Daniels Midland Co. (ADM). William Atkinson goes to ADM as part of the deal. At ADM Atkinson invents TVP—a registered trademark that stands for textured vegetable protein.

1965 Nov.–The Drackett Co. is sold to Bristol-Myers.

1984–The Drackett Company, now part of Bristol-Myers, celebrates its 75th anniversary with an attractive brochure. It makes some American household cleaning products that are first in their category including Windex glass cleaner, Drano drain cleaner, Vanish bowl cleaners, Twinkle copper cleaner, Renuzit air fresheners, and O-Cedar mops and brooms.

1992 Oct.–S.C. Johnson & Sons Inc., of Racine, Wisconsin, buys The Drackett Co. from Bristol-Myers for about \$1.15 billion.

2141. Wikipedia, the free encyclopedia. 2020. Cargill, Inc. (Web article). <https://en.wikipedia.org/wiki/Cargill>. 15 p. Accessed July 13.

• **Summary:** The introduction begins: “Cargill, Incorporated is an American privately held global food corporation based in Minnetonka, Minnesota, and incorporated in Wilmington, Delaware. [2][3][4] Founded in 1865, it is the largest privately held corporation in the United States in terms of revenue. [5] If it were a public company, it would rank, as of 2015, number 15 on the Fortune 500, behind McKesson and ahead of AT&T. [6] Cargill has frequently been the subject of criticism related to the environment, human rights, finance, and other ethical considerations.”

“A color photo shows: “The Cargill Lake Office, occupying the former Rufus Rand mansion on the main corporate campus in Minnetonka, formerly housed the company’s top executives.” [9]

The section titled “Criticism” has these contents:

- 5.1 Human rights abuses
- 5.2 Land grabbing
- 5.3 Food contamination
- 5.4 Deforestation
  - 5.4.1 Soy
  - 5.4.2 Palm oil
  - 5.4.3 Cocoa
- 5.5 Air pollution
- 5.6 Tax evasion.

Concerning Soy, we read: “In 2003, Cargill completed a port for processing soya in Santarém in the Amazon region of Brazil, dramatically increasing soya production in the area and, according to Greenpeace, speeding up deforestation of

local rain forest. [69] In February 2006, the federal courts in Brazil gave Cargill six months to complete an environmental assessment (EA). Initially supported by job-seeking locals, public opinion turned against the port as jobs have not appeared. In July 2006, the federal prosecutor indicated they were close to shutting down the port. [70]

“Greenpeace took its campaign to major food retailers and quickly won agreement from McDonald’s along with UK-retailers Asda, Waitrose, and Marks & Spencer to stop buying meat raised on Amazonian soya. These retailers have, in turn, put pressure on Cargill, Archer Daniels Midland, Bunge, André Maggi Group, and Dreyfus to prove their soya was not grown on recently deforested land in the Amazon. In July 2006, Cargill reportedly joined other soy businesses in Brazil in a two-year moratorium on the purchase of soybeans from newly deforested land. [71][72]

“In 2019 the six largest agricultural commodity traders, ADM, Bunge, Cargill, LDC, COFCO Int. and Glencore Agri, committed themselves to monitoring their soy supply chains in Brazil’s Cerrado. [73]

Note: Details of that agreement are included in this book, under the date June 2020. Cargill appears to be sincere about following the terms of the agreement.

2142. Wikipedia, the free encyclopedia. 2020. Archer Daniels Midland (ADM) (Web article). [https://en.wikipedia.org/wiki/Archer\\_Daniels\\_Midland](https://en.wikipedia.org/wiki/Archer_Daniels_Midland) 13 p. Accessed July 22.

• **Summary:** The introduction begins: The Archer Daniels Midland Company (ADM) is an American global food processing and commodities trading corporation, headquartered in Chicago, Illinois. [2][3][4] The company operates more than 270 plants and 420 crop procurement facilities worldwide, where cereal grains and oilseeds are processed into products used in food, beverage, nutraceutical, industrial, and animal feed markets worldwide.

It was named the world’s most-admired food-production company by Fortune magazine for three consecutive years: 2009, 2010 and 2011. [5] ADM ranked No. 49 in the 2019 Fortune 500 list of the largest United States corporations (which was based on 2018 total revenue). [6]

The company also provides agricultural storage and transportation services. The American River Transportation Company along with ADM Trucking, Inc., are subsidiaries of ADM.

A sidebar states:

Revenue: US\$64.341 billion (2018) [1]  
 “Operating income: US\$1.822 billion (2016)  
 Net income US\$1.279 billion (2016)  
 Total assets US\$39.769 billion (2016)  
 Total equity US\$17.181 billion (2016)  
 Number of employees 32,300 (2016)

History: In 1902, George A. Archer and John W. Daniels began a linseed crushing business in Minneapolis, Minnesota. In 1923, Archer-Daniels Linseed Company

acquired Midland Linseed Products Company, and the Archer Daniels Midland Company was formed. ADM expanded its agribusiness to include milling, processing, specialty food ingredients, and cocoa.[10]

In 1970, Dwayne Andreas became the chief executive officer of ADM, and is credited with transforming the firm into an industrial powerhouse. Andreas remained CEO until 1997 before his nephew G. Allen Andreas was named to this position.[11] He was one of the most prominent political campaign donors in the United States,[12] having contributed millions of dollars to Democratic and Republican candidates alike.

In 2001, Paul B. Mulhollem became the company's president.[13] Under his guidance, the company was the first U.S. company to sign a contract with Cuba since the embargo against Cuba was imposed October 1960.[14]

In May 2006, Patricia A. Woertz became the company's chief executive officer.[15][16] Formerly of Chevron, she was expected to focus on developing ethanol and biofuels. In February 2007, Ms. Woertz was elected Chairman of the Board at ADM.[17]

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On July 7, 2014, the company said that it will buy Swiss-German natural ingredient company Wild Flavors for \$3 billion, a move aimed at diversifying the company and helping brands appeal to consumers who increasingly favor foods with natural ingredients and flavorings.[18]

On November 5, 2014, ADM announced that effective January 1, 2015, Juan Luciano will become the company's new CEO.[19] Luciano was hired on in 2011 as the company's Chief Operating Officer. Woertz will retain the position of Chairman of the Board until 2016 when she is expecting to retire.[citation needed]

In October 2015, ADM announced the sale of its global cocoa business to Olam. The sale is valued at about \$1.2 billion. Approximately 1,500 employees transferred to Olam with the sale.[20]

In January 2017, Archer Daniels Midland agreed to sell its crop risk services (insurance) unit to Validus Holdings for \$127.5 million.[21] On January 19, 2018, it was reported that Archer Daniels Midland Co. (ADM) had approached Bunge Ltd. about a takeover, with details "unclear." At that point, Bunge had a market value of about \$9.8 billion, and was also being pursued by Glencore PLC for an acquisition, since May 2017.[22]

There is also a section titled "3 Criticism" which has these contents:

- 3.1 Sherman Antitrust Law Violation
- 3.2 Price fixing
- 3.3 Tax dodging

#### 3.4 Corruption

#### 3.5 Violation of the Foreign Corrupt Practices Act

#### 3.6 Environmental record

3.7 Agricultural subsidies: The company lobbies for agricultural subsidies and price supports including sugar and ethanol. According to a 1995 report by the libertarian think tank Cato Institute", ADM has cost the American economy billions of dollars since 1980 and has indirectly cost Americans tens of billions of dollars in higher prices and higher taxes over that same period. At least 43 percent of ADM's annual profits are from products heavily subsidized or protected by the American government. Moreover, every \$1 of profits earned by ADM's corn sweetener operation costs consumers \$10, and every \$1 of profits earned by its bioethanol operation costs taxpayers \$30."[43]

2143. Dawson, Wayne. 2020. Re: Abbreviated genealogy of Lenora ("Lenore") Jeanette Andreas, elder sister of Dwayne Andreas. Letter (e-mail) to William Shurtleff at Soyinfo Center, July 23. 1 p.

• **Summary:** "She was born on 21 July 1913 in Nobles Co., Minnesota.

"Lenore was 16 in the 1930 Census of Franklin, Linn Co., Iowa

"She married George G Schunknedt 21 April 1932 in Mount Vernon, Iowa (Iowa Marriage Records, 1880-1945 via Ancestry.com)

"1937 Lenore was married to Harlon Sober and living in Clinton, Iowa (City Directory via Ancestry.com)

"1939 Lenore was married to Harlon Sober and living in Clinton, Iowa (City Directory via Ancestry.com)

"Lenore J. Sober was married to Harlon Sober and living in Cedar Rapids, Linn Co. Iowa in 1940 US Census (Ancestry.com)

"On 3 July 1951 she was at a family reunion in Sterling. (Sterling Gazette via Newspapers.com)

"Alive on 31 Dec 1959 when Reuben Peter Andreas died. Lived in North Miami. (Newspapers.com)

"Lenore J. (Andreas) Steele died on Friday 9 May 1969 in Miami, Florida (Merrick Family Tree on Ancestry.com Published death record in *Miami Herald* 10 May 1969 via Newspapers.com) Wife of Marvin R. Steele, brothers Albert, Glen, Dwayne and Lowell Andreas. (Miami News May 10, 1969, Page 14 via Newspapers.com)

"April 4, 2009 Lenore Andreas Steele was dead by the time her brother Lowell died (Newspapers.com Obituary of Lowell Andreas).

Note: Lenore was married 3 times: To George G. Schunknedt, to Harlan Sober, and to Marvin R. Steele.

Note: Some of the following, from her family group record, is repetitive.

Lenora Jeanette Andreas

Birth: Father's Surname: Andreas; Mother's Surname: Stoltz. The name she was given at birth was Lenora. Most

records when she was an adult call her Lenore. Her birth on 21 July 1913 in Nobles Co. was shown in the Minnesota, Birth Index, 1900-1934. Certificate 1913-19493 via Ancestry.com and the Minnesota Historical Society Birth Index.

Marriage: Lenore Jeanette Andreas married 3 times. Her first marriage was to George G. Schunknedt on 21 April 1932 in Mount Vernon, Iowa. Source: Iowa Marriage Records, 1880-1945 via Ancestry.com.

About 1935, Lenore married Harlon Sober. They had two daughters, Sharon, born about 1936, and Susan, born about 1939. (1940 United States Census for Cedar Rapids, Iowa). Lenore and Harlon were divorced circa 1950. By 1953, Lenore had married Marvin Steele when they attended the funeral of her father, Reuben Peter Andreas.

Lenore Jeanette (Andreas) (Schunknedt) (Sober) Steele died 9 May 1969 in Miami-Dade County, Florida. Her record of death was published 10 May 1969 in both the Miami Herald and Miami News. She was the wife of Marvin Steele. No burial record has been found. Secondary Source: Florida Death Index 1877-1998 states she died in May 1969.

Information on the 3 husbands of Lenora "Lenore" Jeanette Andreas.

According their marriage record, Lenora "Lenore" Jeanette Andreas married George Schunknedt in Lisbon, Linn County, Illinois on 21 April 1932. George was born about 1910 in Waterloo, Black Hawk County, Iowa. George was living in Mount Vernon, Linn County, Iowa at the time of his marriage to Lenore Andreas. He was the son of George Schunknedt and his wife, Edith Carlson. At the time of his marriage to Lenore, he was a Publisher. No trace of either George Schunknedt, Sr. or George Schunknedt, Jr. have been found in the census records of the United States Census in the time frame both would have been alive.

Harlon Sober was the son of Isaac Franklin Sober and his wife, Daisy Irene Clay, who died when Harlon was young. His father married a second time to Hazel Carlson. Harlon was born 31 Oct 1914 in Boone, Boone County, Iowa, according to his delayed birth certificate. His father, Isaac Franklin Sober a foreman in the Quaker Oats feed mill in Cedar Rapids where the family was living in 1920. Harlon died on 3 June 1984 in Kane County, Illinois and is buried in the Union Cemetery in St. Charles, Kane County, Illinois. He married Lenore Andreas about 1935. They were the parents of two daughters, Sharren, born about 1936, and Susan, born about 1939. In 1940 when he registered for the draft, Harlon was living in Aurora, Kane County, Illinois, and worked at Honeymead Products. In his registration for the draft, he was described as having a ruddy complexion, blue eyes, brown hair, weighed 145 pounds and was 5 feet 10 inches tall. By the 1940 Census, he listed his occupation as "Examining Salesman" with no employer shown. He had complete 4 years of high school.

Harlon Sober and Lenore (Andreas) Schunknedt were divorced about 1947-1948 since she remarried in 1948, and

he lived on to marry again.

Harlon later married Virginia R., last name unknown. She was listed as his widow in his obituary in 1984.

Harlon Sober's obituary in the Cedar Rapids, Iowa Gazette on 13 June 1984 stated that he had two additional daughters, Cindy Lange and Cathy Storm. There was no statement about who the mother of these two girls was.

Marvin Ross Steele, 3rd husband of Lenore Andreas, was the son of Charles R. Steele and his wife, Libbie Hyek. Marvin was born 30 August 1913 and died 25 Sept. 1992. On 1 Jan. 1938, he married Marion Lind Hicksa in Cedar Rapids, Linn County, Iowa. In the 1940 census, he and his wife Marion were living in Cedar Rapids, Linn County, Iowa. In the census, he listed his occupation as musician in an orchestra.

In 1941, Marvin and Marion were living in Cedar Rapids, Linn County, Iowa. No occupation was listed for Marvin.

On 29 April 1942, Marion Steele filed for divorce from Marvin Steel on the grounds of cruel and inhuman treatment.

On 16 Oct 1944, Marvin enlisted in the Army where he served until 16 May 1946. He served 19 months in the United States and 11 months in active foreign service for which he was paid a bonus of \$217.50 in 1949.

On 23 August 1948, Marvin married Lenore (Andreas) (Schunknedt) Sober in Dixon, Lee County, Illinois.

In the 1950 City Directory of Cedar Rapids, Linn County, Marvin R. Steele and his wife, Lenore, were living on Hamilton SW street. He was listed as a salesman.

Marvin was a pilot in the City Directory of Miami, Florida in 1955. The newspapers at the time cover many stories of his exploits as a pilot.

After the death of his second wife, Lenore Andreas, he married 2 Dec. 1970, Hanna G. Hixon, in Miami, Dade County, Florida. Address: Genealogist, Tucson, Arizona.

2144. ADM (Archer Daniels Midland Co.). 2020. History of ADM, 1902-1979 (Website printout-part). <https://www.adm.com/our-company/history> 2 p. Retrieved July 27.

• **Summary:** 1902–Daniels Linseed Co. founded in Minneapolis

1923–Changed name to Archer Daniels Midland Company

1924–Listed on NYSE

1927–Formed grain division

1929–Began crushing soybeans. Acquired Commander Larabee flour milling business

1963–Built export terminal at the Gulf of Mexico

1967–Entered barge freight business

1969–Relocated headquarters to Decatur, Illinois

1974–Acquired first soybean processing plants in Europe and South America

1979–Established ADM Trucking.

2145. Wikipedia, the free encyclopedia. 2020. Lysine price-fixing conspiracy (Web article). [https://en.wikipedia.org/wiki/Lysine\\_price-fixing\\_conspiracy](https://en.wikipedia.org/wiki/Lysine_price-fixing_conspiracy) 2 p. Accessed July 30.

- **Summary:** The introduction begins: The lysine price-fixing conspiracy was an organized effort during the mid-1990s to raise the price of the animal feed additive lysine. It involved five companies that had commercialized high-tech fermentation technologies, including American company Archer Daniels Midland (ADM), Japanese companies Ajinomoto and Kyowa Hakko Kogyo, and Korean companies Sewon America Inc. and Cheil Jedang Ltd. A criminal investigation resulted in fines and three-year prison sentences for three executives of ADM who colluded with the other companies to fix prices. The foreign companies settled with the United States Department of Justice Antitrust Division in September through December 1996. Each firm and four executives from the Asian firms pleaded guilty as part of a plea bargain to aid in further investigation against ADM. The cartel had been able to raise lysine prices 70% within their first nine months of cooperation.[1] Also discusses: ADM's role.

Popular adaptations: The Informant is a nonfiction thriller book written by journalist Kurt Eichenwald and published in 2000 by Random House[18] that documents the case and the involvement of ADM executive Mark Whitacre. It has been adapted into the 2009 film *The Informant!* starring Matt Damon, which was released September 18, 2009.

See also: *United States v. Archer Daniels Midland Co.* [link].

2146. ADM. 2020. History of ADM. <https://assets.adm.com/Our-Company/History-Of-ADM-Timeline-010320.pdf>

- **Summary:** Down the right side of this timeline is a color photo of an old bottle of linseed oil with a crumbling cork. On the label is hand-written: "Feb. 17th, 1903. First oil made."

- "1902–Daniels Linseed Co. founded in Minneapolis
- "1923–Changed name to Archer Daniels Midland Company
- "1924–Listed on NYSE
- "1927–Formed grain division
- "1929. Began crushing soybeans
- "1929–Acquired Commander Larabee flour milling business
- "1963–Built export terminal at Gulf of Mexico
- "1967–Entered barge freight business
- "1969–Relocated headquarters to Decatur, Illinois
- "1974–Acquired first soybean processing plants in Europe and South America
- "1979–Established ADM Trucking
- "1986–Formed Golden Peanut Company
- "1994–Invested in Asian agribusiness Wilmar
- "1997–Acquired Glencore's Brazilian operations.

Entered edible bean business.

- "2009–Launched ADM Cares corporate giving program.
- "2014–Built first wholly owned food ingredient facility in China. Acquired WILD Flavors. Relocated global headquarters to Chicago.
- "2015–Acquired Eatem Foods. Acquired Eaststarch CV.
- "2016–Launched Together We Grow consortium Acquired majority stake in Biopolis. Launched ADM Medsofts.
- "2017–Acquired Crosswind Industries, Inc. Acquired Chamtor. etc.
- "2018–Acquired Rodelle. Acquired Protexin. Purchased Algar Algo assets
- "2019–Joined Paradigm for Parity coalition
- 2019–Acquired Neovia

2147. Spots at front of book: ADM and the Andreas family. 2020.

- **Summary:** Let this be a model for ADM & Andreas (a-g) Marriage of Peter Rueben Andreas to Lydia Stoltz with 6 children including Dwayne Andreas (5th child) and Lowell Andreas (6th child). (i-k) Marriage of Dwayne and Bertha Benedict, his first wife, with two children. (l-m) Marriage of Dwayne Andreas to Dorothy Inez Snyder, his second wife, with one child, Michael. (n-p) Marriage of Lowell Andreas to Nadine Betty Hamilton, with two children. (q) Portrait photo of Dwayne Andreas (black and white), undated. (r) Portrait photo of Dwayne Andreas (color). (s) Mikhail Gorbachev and Dwayne Andreas. (t) Dwayne Andreas near the peak of his abilities, smiling. (u) ADM headquarters in Chicago. (v) ADM's current logo (Aug. 2020). (w-x) Early Archer logos for title page.

2148. Spots at front of book: History of modern soy protein ingredients. 2020.

- **Summary:** (a) A container of GNC isolated soy protein. (b) The Solae logo. (c) Granular textured soy protein. (d) A soybean crushing plant with many tall silos for storing soybeans. (e-f) Textured soy protein. (g) TVP brand textured soy flour. (h) Eighth-Continent soymilk made with Solae® isolated soy protein.

2149. Spots at front of book: NSPA/NOPA. 2020.

- **Summary:** The founding document of the National Soybean Oil Manufacturers Association. (e) NSPA marks its 50th anniversary (1978-106131a).

2150. Spots: Soy flour, flakes and grits. 2020.

- **Summary:** (a) Soy flour in a wooden spoon against a bed of soybeans. (b) Gluten-free bread that contains soy flour. (c) Bob's Red Mill Organic Whole Grain Soy Flour. (d) Soy flour in a white bowl, labeled with blue letters. (e) Bag of Arrowhead Mills organic soy flour. (f) Muffins containing soy flour. (g) A bag of ADM bulk soy flour. (h) Sobee,

an early soymilk made with soy flour. (i) Food for Peace poster. (j) Soybean flour dosa recipe. (k) Soy flour roti. (l) Introducing Soyinfo Center.

2151. *SoyaScan Notes*. 2020. Soyfoods success stories in developing countries (Overview). Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** Public sector with outside funding: 1. Sri Lanka, Thripasha program (Cereal-soy blends, started 1976. Thripasha itself started in 1973). 2. Mexico (Chihuahua) program selling PADS, Soyaven / Soyavena, Albachisa, and Almesa (Cereal-soy blends, 1978-80). 3. Thailand, ASEAN full-fat soy flour project (1978). 4. Guatemala, Plenty Soy Dairy (Tofu, soymilk, soy ice cream, 1980)

Private sector, largely self sufficient: 1. Uganda, Africa Basic Foods (Dr. D.W. Harrison. Roasted whole soy flour, cereal soy blends, 1966-69). 2. India. Ruchi's Products (TVP, 1980).

2152. *SoyaScan Notes*. 2020. The visionary work of Henry Ford and his researchers with soybeans—then and now: Pioneered solvent extraction of soybeans and the use of hexane solvent (Overview). Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** By September 1934 Henry Ford's researchers had developed a relatively small and inexpensive, continuous-process, counter-current, solvent extractor which was displayed at the "Industrialized Barn" portion of the massive Ford exhibit at the Chicago World's Fair—where it was viewed by millions. Ford hoped that American farmers would build similar extractors in their own barns and use them to process soybeans grown on their own farms as an additional source of income during the non-farming months. This was the first solvent extractor ever built in America. It used high-test aviation gasoline as a solvent. The extractor was a piece of 12-inch diameter steel pipe, 30 feet in length, set at an angle of 10 degrees to the horizontal. The flaked soybeans were moved against the current of solvent by use of a screw conveyor.

In the summer of 1935 Ford spent \$5 million to construct a soybean mill with solvent extraction units in his huge River Rouge automobile plant. *Newsweek* magazine (April 1936) reported that in 1935 the soybean provided oil for the enamel on 1 million Ford cars, 540,000 gallons of the oil went into glycerine for shock absorbers, and 200,000 gallons were used to bind sand cores in the Ford foundries. The soybean meal was reacted with formaldehyde to produce a thermoplastic resin, which was used to make numerous small automotive parts, such as gear-shift knobs, window frames, distributor caps, horn buttons, etc. for Ford cars.

In 1937 and 1938, as part of his village industries program, Ford installed and operated similar solvent extraction plants at his mills in Saline and Milan, Michigan.

In 1950 in America the solvent extractor passed the

screw press to become the leading method of crushing soybeans to obtain oil and meal. It remains so to this day, worldwide, and hexane remains the leading solvent.

Ford was one of the pioneers in the use of hexane as a solvent for extracting soybeans. In 1933 Ford began experiments using hexane solvent for extraction of soybean oil (Boyer, R. 1985. *Reminiscences*, p. 20-23). That year, at the Ford Exposition of Progress in New York City, Ford had a glass model of this extractor that used hexane solvent. In March 1934, the Archer-Daniels-Midland Co. in Chicago became the first company in America to use hexane solvent commercially in an extractor with soybeans. By April 1935 researchers at Ford's Edison Institute were testing the use of hexane as a solvent for extracting soybeans and by April 1936 Ford had switched to using hexane in his extractors at the River Rouge plant.

2153. *SoyaScan Notes*. 2020. The visionary work of Henry Ford and his researchers with soyfoods—then and now: Pioneered soy protein isolates (Overview). Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** Robert Boyer and Bob Smith did extensive, pioneering work on developing soy protein isolates at the Ford Motor Co. Both started research in 1938. Boyer used his isolates to make industrial products, such as spun soy protein fibers and water-based paints. The soy fibers were produced in a pilot-plant with a capacity of 1,000 pounds per day of soybean "wool" and soon a fabric containing 25% soybean wool and 75% sheep's wool was used in the sidewall upholstery of many Ford cars. Bob Smith used his isolates to make a good-tasting soymilk, that was served in Ford cafeterias and schools, and at the Henry Ford Hospital, and was also used as the base for most of the early commercial soy-based whipped toppings—starting with Delsoy. In Nov. 1943 The Drackett Co. bought Ford's soybean fiber spinning operations; Boyer, Francis (Frank) Calvert, and William Atkinson went to Drackett from Ford as part of the deal. Drackett made and sold their fibers, Soybean Azlon, spun from soy protein isolates, from 2 Dec. 1943 to 1949. They were used mainly in felt hats by the American Hat Corporation. Drackett also commercialized other industrial soy proteins, such as Protein 110, 112, and 220, Ortho Protein, and plastic molding compounds. Boyer left Drackett in 1949 when they shut down their Azlon fiber spinning plant; he focused all his energy on developing food uses of edible products made from spun soy isolates. In mid-1957 ADM (Archer Daniels Midland Co.) purchased Drackett's soy protein business. Bob Boyer began to work as a full-time consultant for Ralston Purina in the field of soy proteins starting in early 1960. Since 13 June 1959 Ralston Purina had been manufacturing industrial soy protein isolates (for use in paper coatings) at a plant in Louisville, Kentucky, which they purchased from Procter & Gamble in December 1958. In 1960, after starting consultation

with Boyer, Ralston Purina began its first work with edible soy proteins by establishing a research and pilot plant at company headquarters in St. Louis, Missouri. In about September 1962 Boyer was named technical director of protein products sales in the soybean division of the Ralston Purina Co.; he worked for Ralston until his retirement in 1971. Frank Calvert, Boyer's coworker from the Ford Motor Co. was hired in November 1962 to head up Ralston Purina's R&D work on food-grade isolated soy protein in St. Louis. In 1965 Calvert was named director of soybean research, and in 1967 director of research of the Protein Division. In 1969 Calvert was promoted to director of research, New Venture Management, and finally in 1971 vice president and research director, New Venture Management. During these years, Calvert developed new soy protein isolation processes, 70 percent soy protein concentrate products, and modified soy protein coating compositions for industrial use. Calvert is considered a visionary in soy protein research and the accomplishments of his career were honored in 1973 when the Ralston Purina plant at Memphis, Tennessee, was dedicated to him in recognition of his years of service and dedication to protein technology.

In Oct. 1962 Ralston Purina began to introduce a line of edible soy protein isolate products made at their plant in Louisville: The first three were Edi-Pro A and Edi-Pro N (spray-dried isoelectric and neutral isolated soy proteins respectively) and Textured Edi Pro (an edible spun soy protein fiber). Supro 610 was launched in October 1966. As sales of these products increased, Ralston Purina soon found itself a leader in this new field—along with the pioneer, Central Soya, which had launched Promine in Oct. 1959. Ralston Purina expanded food grade isolate capacity with new facilities at Memphis, Tennessee, beginning production on April 10, 1973; Pryor, Oklahoma, beginning production on December 1, 1976. By late 1975 the company was making about 75 million pounds per year of isolates from its three plants, and was starting to advertise its isolates in a big way, with full-page color ads. This expansion easily vaulted Ralston Purina into the position of world leader in food-grade isolated soy proteins by 1976. On 21 August 1979 the company began producing soy protein isolates at its first plant located outside the United States, in Ieper, Belgium. On 1 July 1987 Ralston Purina established Protein Technologies International (PTI) as a wholly owned subsidiary focused on manufacturing soy protein and fiber products. In 1993 PTI was by far the world's leading producer of soy protein isolates, controlling about 60% of the U.S. market. PTI's sales of consumer soy protein products rose from \$221.6 million in 1989 to a record \$288.1 million in 1992.

2154. *SoyaScan Notes*. 2020. The visionary work of Henry Ford and his researchers with soyfoods—then and now: Pioneered textured soy flour and TVP (Overview). Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** The world's most popular textured soy protein product among consumers is TVP; the name is a registered trademark of ADM, The Archer Daniels Midland Co. of Decatur, Illinois. One of the two main developers of textured soy flour was William Atkinson, a researcher at the Ford Motor Co. since 1935. After doing early work on industrial soy protein fibers, he went to The Drackett Co., then to ADM when Drackett sold their agricultural operations to ADM in 1957. "TVP Textured Vegetable Protein" was launched commercially in April 1966, and Atkinson was issued a key patent on the product in Jan. 1970 (No. 3,488,770). The product described in this patent has probably had "the greatest impact in bringing the low-cost, textured vegetable products into commercialization." A major breakthrough came on 22 Feb. 1971 when USDA's Food and Nutrition Service authorized the use of textured vegetable proteins (which, in practice meant TVP) as an extender for meat, poultry, or fish in National School Lunch Programs and Special Food Service Programs for children. Up to 30% on a hydrated basis could be used. By 1975 some 75 to 100 million pounds were being used in these programs alone. Starting in March 1973 TVP became a popular retail item as an extender for ground beef—whose price had skyrocketed. By 1976 approximately 60% of the soy flour and grit texturizing capacity in the U.S. was licensed under this Atkinson patent. It dominated the industry from 1970 to 1976 when it, in turn, came to be dominated by the Flier patent assigned to Ralston Purina Co. Wolf (1984) estimated that in 1982 approximately 95 million lb of textured soy flour, worth about \$13.8 million at the wholesale level, were produced in the USA. It continues to be widely used in foods for both people and pets.

2155. *SoyaScan Notes*. 2020. Definition of textured soy protein products (Overview). Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** The broad term "textured soy protein" refers to three different types of modern textured soy protein products: Textured soy flour, textured soy protein concentrate, and spun soy protein fiber. The first two of these products are available by mail order from several sources, plain or flavored, and in different sized chunks.

Textured soy flour (TSF) is made by running defatted soy flour through an extrusion cooker. The heat generated by friction, pressure, and the adjustable die at the exit end allows production of many different forms and sizes. The best known brand is "TVP," owned by the Archer Daniels Midland Co. This product, when hydrated, has a chewy texture. It is widely used as a meat extender and in pet foods.

Textured soy protein concentrate is a more sophisticated and more expensive product than textured soy flour. It lacks all of the water-soluble sugars which cause flatulence, and it has a much lighter (almost white) color. In recent years it has replaced much of the TSF used as a meat extender and

in other foods. From a nutritional viewpoint, it is important to note that most soy protein concentrate is made by the alcohol-wash process, which removes almost all of the phytoestrogens and isoflavones from the product; little if any is presently made by the water-wash process which does not remove these potentially valuable substances.

Spun soy protein fiber is made by texturizing soy protein isolates. The isolates are mixed with water to form a soft dough (called a dope), then extruded into a salt water bath to form many thin fibers or monofilaments. These are used in meat alternatives to simulate muscle tissue. Address: Soyinfo Center.

2156. *SoyaScan Notes*. 2020. Chronology of tofu worldwide–1930 to present. Part II. Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** 1930s early–Azumaya Tofu Seizo-sho (later renamed Azumaya Co.) starts making tofu, *yaki-dofu* (grilled tofu), and *ganmodoki* (fried tofu patties) in San Francisco at 1636 Post St. between Buchanan and Laguna streets. The company is owned by Mr. Teranishi, who may have started it as early as the early 1920s. In Feb. 1937 it was sold to George and Jack Mizono, and their mother and father (Saichi Mizono).

1932, Dec.–Madison Foods, part of Madison College in Madison, Tennessee, was making Soy Cheese, then by 1939 they had launched Cheze-O-Soy (seasoned tofu), and by 1940 they were making a canned tofu bologna named Yum.

1934–By this year Loma Linda Food Co. (Adventist) in Loma Linda, California, was making Loma Linda Vegetable Cheese (canned tofu with pimiento).

1942 Sept.–Dr. Harry Miller, a Seventh-day Adventist doctor who had worked for many years in China as a medical missionary, begins making Miller's Soy Cheese (tofu) at Mt. Vernon, Ohio.

1944 Sept.–Butler Food Co. in Cedar Lake, Michigan, introduces Butler's Soynut Cheese. Note that the first five Caucasian-run tofu companies in the Western World were all founded and run by Seventh-day Adventists. Note also that each of these five Seventh-day Adventist tofu products used the word "cheese" in the name and that each was canned. 1957 Aug.–Shizuka Hayashi, head of the Japanese-American Soybean Institute in Tokyo, publishes (in *Soybean Digest*) the earliest English-language statistics on tofu in Japan. "There are approximately 45,000 tofu manufacturers in Japan, of which about 23,000 are members of the Tofu Association. There is one large factory in Osaka, the largest in Japan, which consumes 2 tons of soybeans a day." In 1957 Japan will use somewhere between 160,000 and 308,000 tons of soybeans to make tofu.

1958–The world's first packaged tofu is sold in Los Angeles, California, by Matsuda Hinode Tofu Co. Mr. Shoan Yamauchi, owner, conceived of the idea of putting individual cakes of tofu each in a plastic bag with water, sealing the bag

with a heat sealer, placing the bag in a stiff paper deli carton with a wire handle, then folding over the top. The process was labor intensive. This happened at about the same time that a letter from journalist George Yoshinaga had led the city to pass a new regulation requiring tofu to be packaged in individual containers.

1958–Tofu is first sold in a U.S. supermarket–Boy's Market supermarket chain (which had about 12 stores at the time) in Los Angeles. The tofu was sold in individual packages (see above) and made by Matsuda Hinode Tofu Co., whose owner, Mr. Shoan Yamauchi was responsible for this major innovation, and for seeing the mainstream potential of tofu.

1965–The Library of Congress establishes the subject heading "Tofu" as the official name for that food in cataloging books for libraries across America. However, in the mid-1970's disputes arose there about the proper form of romanization of that term. The dispute was resolved by the decision to use the common English term "Bean Curd" instead.

1966–Tofu is first packaged in plastic trays/tubs, the type so widely used today. Again, Mr. Yamauchi conceived of the idea. He went to the Sealright Company in Los Angeles that made Sealright trays and asked them to make a waterproof plastic tray for his tofu. Mr. Yamauchi created three specific early innovations in tray packaging: (1) A very deep tray, holding 26-28 ounces; (2) A method for heat sealing a plastic film to the flange of a tray which had cold water flooding over the flange; (3) High-speed sealing machines to pack and seal the tofu in his plant.

1975 March–Alec Evans, owner of first of the new breed of Caucasian-run tofu shops, starts to make "Tofu" in Corvallis, Oregon. His Welcome Home Bakery and Tofu Shop is the sixth Caucasian-run tofu company in America.

1975 Dec.–*The Book of Tofu*, by Shurtleff and Aoyagi, is published by Autumn Press. This book, which had sold about 550,000 copies by 1997, played a major role in introducing tofu to the Western World.

1977 Aug.–Takai Tofu & Soymilk Equipment Co. publishes its first English-language equipment catalog, which helps many American and European tofu shops to get started.

1977 Sept.–White Wave, owned by Steve Demos, starts making tofu at 1738 Pearl St., in Boulder, Colorado.

1977–Morinaga Milk Industry Co., Ltd. in Japan introduces the world's first aseptically packaged tofu in a Tetra Brik carton. It is named "Morinaga brand Tofu. Soybean Curd." In 1978 the name was changed to "Morinaga brand Ever-Fresh Silken Tofu."

1977–Swan Foods Corporation, owned by Robert Brooks and Mary Pung, starts making "Tofu–Organic" at The Soybeanery, 5758½ Bird Rd., Miami, Florida. This is the first tofu in the Western World labeled "Organic." Swan Foods is also the first American company to make a wide variety of soyfoods, and the first to open a soy deli—which

had a take-out menu.

1978 April–Nasoya Foods, owned by John Paino and Bob Bergwall, starts making Nasoya Organic Tofu (water pack) at Mechanic Street Exit, Leominster, Massachusetts.

1978 Dec.–*The Book of Tofu*, by Shurtleff and Aoyagi, is published by Ballantine Books in a mass-market edition that retails for \$2.95.

1979 July–*Tofu & Soymilk Production*, by Shurtleff and Aoyagi, is published by Soyfoods Center in California. This book is used to start hundreds of tofu manufacturing companies throughout the Western World and in some Third World countries.

1982 April–There are 242 tofu manufacturers in the Western World, including 173 in the United States.

1985 June–The Library of Congress decides to change its subject heading from “Bean curd” back to “Tofu.” This, perhaps more than any other single thing, makes the word tofu “official.”

1983–House Food Industrial Co., Ltd. of Japan purchases 50% ownership in Yamauchi Enterprises (formerly Hinode Tofu Co., owned by Mr. Shoan Yamauchi) in Los Angeles. The company is renamed House Foods & Yamauchi, Inc.

1989 Dec.–Sixty-five books (each more than 48 pages long) on tofu have been published in the Western World since 1970. Each one has the word “tofu” or its equivalent in the title. Forty of these books were published in the United States, 6 in Canada, 5 in Switzerland, 5 in Japan (but written in English for sale primarily outside of Japan), 3 in West Germany, 3 in France (but 2 of these were published simultaneously and primarily in Quebec, Canada), 2 in England, and 1 each in Italy, Sweden, and Brazil.

1990 Aug. 3–Hong Kong Soya Bean Products Co. Ltd. (makers of Vitasoy) acquires Nasoya Foods of Leominster, Massachusetts.

1993 June–Vitasoy purchases Azumaya Inc. (America’s largest tofu manufacturer, and the low-price leader) in California for an estimated \$4–\$5 million.

1993–House Foods Corp. of Japan purchases the remaining 50% of House Foods & Yamauchi, Inc. from Mr. Shoan Yamauchi. The new company is renamed House Foods American Corporation.

1997 March 12–House Foods America Corporation holds the opening ceremony for America’s largest tofu factory, in Garden Grove, California; the company closes its tofu plant in central Los Angeles.

2157. *SoyaScan Notes*. 2020. Chronology of the Sinaiko family’s work with soybeans. Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** 1891 March 4–Born Joseph Morris Sinaiko in Minsk, western Russia, the eldest of eight children of Alex and Rachel Sinaiko.

1904–The family immigrates to the United States,

settling in Madison, Wisconsin, with relatives. Joseph enters school in the 5th grade. Later he completes two years at the University of Wisconsin, Madison, then leaves to work in his father’s milling company.

1921–Joe moves to Cedar Rapids, Iowa. A year or so later he buys the six-story old Jackson Milling Co. building (it is dilapidated and not operating), changes the name to Iowa Milling Co., and starts his own business milling grains.

1922–Joe Sinaiko and Max Albert are both employed at the Iowa Milling Co., located at 602 Dewey Ave., according to the 1922 *McCoy’s Cedar Rapids city directory*.

1928 spring–Iowa Milling Co. starts crushing soybeans to make oil and meal. This is the first company to crush soybeans west of the Mississippi River or in Iowa. The first years are difficult because soybeans are still a relatively new and unknown crop in America. Not long after he started came the stock market crash of 1929 and the Great Depression. Yet, surprisingly, soybean production and processing thrived during the 1930s, and so (eventually) did Iowa Milling Co.

1935 fall–Processing starts at the Illinois Soy Products Co. in Springfield, Illinois–run by I.D. “Ike” Sinaiko, with three expellers.

1936–The Andreas family moves their family milling company (named R.P. Andreas & Sons) to Cedar Rapids, Iowa (from Lisbon, Iowa), and renames it Honeymead Products Co. Dwayne Andreas (one of the sons) and Joe Sinaiko soon become close friends. Joe, whose is 27 years older than Dwayne, also becomes Dwayne’s mentor in the milling and soybean businesses.

1939 fall–Quincy Soybean Co. begins operations at Quincy, Illinois, run by Irving J. Rosen (who married Marcella Sinaiko, Joe’s younger sister).

1938–Max and Anna (Sinaiko) Albert organize the Galesburg Soy Products Co. in Galesburg, Illinois, and operate it as a family partnership.

1939 Nov. 1–The Decatur Soy Products Co. (the former Hight Co. elevator) starts operating in Decatur, Illinois. The officers are: I.D. “Ike” Sinaiko of Springfield, Illinois (president). Joe Sinaiko of Cedar Rapids, Iowa (vice-president). Jasper Di Giovanna of Decatur (manager).

1940 Feb. 14–A fire destroys the Illinois Soy Products Co. in Springfield, Illinois. It is quickly rebuilt as a modern plant with five expellers.

1942 Aug. A full-page ad in *Soybean Digest* titled “Feed more protein” is sponsored by the following five companies: (1) Decatur Soy Products Company (Decatur, Illinois), (2) Quincy Soybean Products Company (Quincy, Illinois), (3) Illinois Soy Products Company (Springfield, Illinois); (4) Galesburg Soy Products Company (Galesburg, Illinois), and (5) Iowa Milling Company (Cedar Rapids, Iowa). Each company is a small soybean crusher and all are owned (or were once owned) and run by members of the Sinaiko family.

1943 Jan.—Cargill purchases the Iowa Milling Co., a soybean crushing plant and feed mill, in Cedar Rapids, Iowa for \$300,000. The initial push came from Julius Hendel of Cargill.

Joe Sinaiko, former owner of the Iowa Milling company, buys a 160-acre farm located 5½ miles northeast of Marion, in Linn County, Iowa. He will take possession in July.

1943 Sept. 5-7—The American Soybean Association holds its annual convention in Cedar Rapids, Iowa.

1943 Oct. 26—Ike Sinaiko sells the Illinois Soy Products Company in Springfield, Illinois, to Cargill, Inc. of Minneapolis, Minnesota. Cargill has been buying other Mid-West Soybean mills to assure itself of an adequate supply of soybean meal during the war years.

1943 Nov.—An article in *Soybean Digest* states (p. 13): “Joseph Sinaiko, well known soybean processor of the Middle West, has purchased the plant of Mid-Continent Vegetable Oil Co., Galesburg, Missouri. The plant, previously owned by a firm in Kansas City, is in an interior town without railroad facilities, but it is near Carthage, Missouri, in the center of a rich feeding belt. Joe is also installing equipment for a soybean processing plant at Fairfield, Iowa. He was a pioneer in Iowa soybean processing...”

1944 March—An ad in *Soybean Digest* states (p. 24) that Cargill now has soybean processing plants in Springfield, Illinois, and Cedar Rapids, Iowa.

1944 June 27—Cargill officially takes over Joe Sinaiko’s soybean processing plant in Cedar Rapids, Iowa—according to Cargill employment records.

1944 Sept.—An article in *Soybean Digest* titled “Some early processors” states (p. 18-19): “First soybeans processed west of the Mississippi River were at Cedar Rapids, Iowa, by Iowa Milling Co., it is claimed. Joe Sinaiko and Max Albert, partners in the venture, installed the equipment consisting of two expellers, in the fall of 1927 and operations began the next spring. Albert later established the Galesburg Soy Products Co., while Sinaiko operated Iowa Milling until he sold to Cargill in 1943.” Note: Max Albert was Joe’s brother-in-law; he married Joe’s younger sister, Anna Sinaiko.

1944 Oct. 11—The Cargill soybean processing plant in Cedar Rapids burns to the ground. An article in *Soybean Digest* (Nov., p. 13) states: “The plant was the first soybean processing plant to be established west of the Mississippi. It was first operated in 1927 by Joe Sinaiko and Max Albert.”

1945 June—Dwayne Andreas’ draft classification is changed to 1A. In anticipation of his being called into the military, the Andreas family sells 60% of its Honeymead plant (in Cedar Rapids, Iowa) to Cargill, Inc. Dwayne Andreas resigns as vice president of Honeymead and goes to work for Cargill as general manager of their Cedar Rapids plant.

1945 Oct.—Cargill purchases (for \$1.6 million) the entire capital stock of Nutrena Mills Inc., a leading Midwest feed

manufacturer with three mills.

1945 Dec.—Joe Sinaiko, Cedar Rapids, buys the new Washington, Iowa, soybean processing plant of Honeymead Products Co.

1946 Oct.—An article in *Soybean Digest* states (p. 22): “Cargill, Inc., announces the purchase of the solvent process soybean plant at Washington, Iowa, from Joseph M. Sinaiko, pioneer Iowa processor. The firm announces at the same time the sale of its Cedar Rapids, Iowa, expeller plant to Sinaiko. The latter was former owner of the Cedar Rapids plant under the name of Iowa Milling Co.”

Joe Sinaiko enters the very competitive field of corn processing as his Corn Starch and Syrup Co. begins operation near Cedar Rapids. His plant turned out to be more efficient than those of his competitors. 1965 Nov.—Archer Daniels Midland Co. (ADM) purchases the Galesburg Soy Products Co. (Galesburg, Illinois), formerly owned by the Max Albert family.

1966 June 1—Cargill signs the papers by which they purchase the Iowa Milling Co. (for the second time) from Joe Sinaiko. The transition took one year, and was completed on 1 June 1967.

1970 May—Joe (now age 79) announces the groundbreaking for Corn Sweeteners Inc. near Cedar Rapids.

1971—Joe sells his interest in Corn Sweeteners to Archer Daniels Midland Co., which uses the plant to enter the corn processing industry.

1986—Joe Sinaiko’s second wife, Janet Burnstein, dies in Cedar Rapids, Iowa.

2158. *SoyaScan Questions*. 2020. Questions about the work of Archer Daniels Midland Co. and members of the Andreas family. Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** When was ADM’s stock first listed on the New York Stock Exchange (the “big board”)?

In Dec. 2006 did Hain Celestial buy all companies in the Haldane Foods Group? For how much? In dollars or pounds sterling? From ADM?

How long was Michael Andreas in federal prison and how long was he in a halfway house? When was he released from the latter?

What did Michael Andreas do after he was released and gained his freedom? See the book titled *The Informant: A True Story*, by Kurt Eichenwald, a journalist (2000, Random House). The book documents the mid-1990s lysine price-fixing conspiracy case and the involvement of Archer Daniels Midland. It is mostly about informant Mark Whitacre but probably also has information on Michael Andreas.

An asterisk (\*) at the end of the record means that SOYINFO CENTER does not own that document. A plus after eng (eng+) means that SOYINFO CENTER has done a partial

or complete translation into English of that document. An asterisk in a listing of number of references [23\* ref] means that most of these references are not about soybeans or soyfoods.

# Nature locked the cupboard

## ...but ADM found the key

Nature was generous when she created the soybean.

In each tiny bean are precious ingredients ... raw materials for modern industry. The problem, then, is to unlock this rich supply ... to extract and separate, to purify and improve ... to get out everything which nature put in.

Take the meal, for example. It's naturally rich in protein, but without man's help, much of this protein remains "locked-up" in an undigestible form.

ARCHER-DANIELS-MIDLAND has developed a carefully controlled cooking process which

releases the full growth promoting power. The result? 20% greater protein efficiency ... and extra gains worth as much as \$91 more per ton than those produced by some soybean oil meals.

This is nothing new for ADM. For 25 years, it has been a leader in creating new and better uses for the soybeans you grow. Scores of products born in ADM laboratories and produced in ADM processing plants play vital roles in America's daily life.

This is the way your markets are built ... and this is how they will continue to grow.

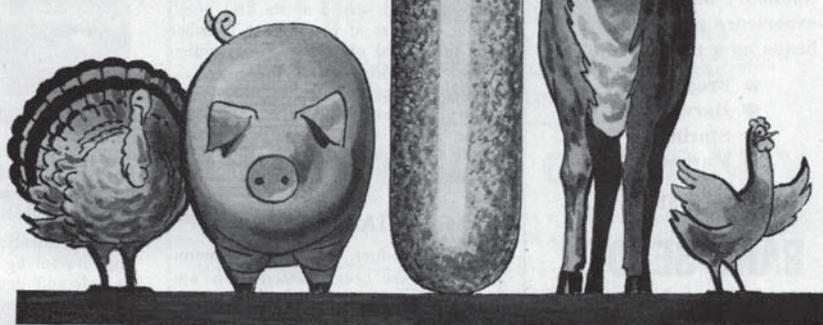
- Some ADM Products made from Soybeans**
- ADM Soybean Brew Flakes
  - Admex 710 (a plasticizer for vinyl resins)
  - Archer "S" (Salad Oil)
  - Archer 44% Soybean Oil Meal, Pea-Size, Pellets, Flakes
  - Archer 50% Low Fibre Soybean Oil Meal
  - Archer Booster Feeds
  - R-Lecin (Soybean Lecithin)
  - Bakers Nutrisoy
  - Daniels' Supreme
  - Kaysoy
  - Nutriwhip
  - Packers Granular
  - Paint Vehicles
  - Soya/Fatty Acids
  - Soy Flour



### Archer-Daniels-Midland Co.

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*Creating New Values from America's Harvests*



**SUBJECT/GEOGRAPHICAL INDEX BY RECORD NUMBERS**

Aarhus Oliefabrik (Aarhus, Denmark) 289, 778, 923, 987, 1042, 1337, 1341, 1431, 1435, 1439, 1463, 1546, 1699, 1764, 1859, 1861, 1862, 1873, 1886, 1996, 1997

Aburagé. *See* Tofu, Fried

Acid-base balance in diet and health. *See* Nutrition–Acid-Base Balance

Acidophilus soymilk or soy acidophilus milk. *See* Soymilk, Fermented

Adhesives, Asphalt Sealants and Preservation Agents, Caulking Compounds, Artificial Leather, Foam, Polyols, and Other Minor or General–Industrial Uses of Soy Oil as a Drying Oil 79, 239, 361, 440, 752, 873, 1899

Adhesives or Glues for Plywood, Other Woods, Wallpaper, Building Materials, Etc.–Industrial Uses of Soy Proteins (Including Soy Flour) 42, 62, 64, 65, 74, 79, 82, 83, 90, 94, 96, 117, 122, 132, 138, 146, 147, 159, 172, 198, 242, 248, 263, 315, 327, 344, 347, 349, 352, 356, 361, 373, 394, 428, 688, 1041, 1109, 1421, 1584

Adjuvants, Carriers, and Surfactants for Pesticides, Herbicides, and Other Agricultural Chemicals–Industrial Uses of Soy Oil as a Non-Drying Oil 305

ADM. *See* Archer Daniels Midland Co.

ADM Agri-Industries Ltd. (Windsor, Ontario, Canada). Formerly named Maple Leaf Monarch, and before that Maple Leaf Mills Ltd. (Including Maple Leaf Milling). Toronto Elevators Ltd. Merged with Maple Leaf Milling in 1962 43, 64, 98, 193, 209, 231, 282, 284, 457, 489, 598, 618, 647, 683, 711, 744, 752, 790, 793, 806, 820, 829, 837, 841, 873, 903, 904, 954, 965, 1030, 1032, 1033, 1068, 1097, 1142, 1203, 1229, 1247, 1266, 1368, 1373, 1374, 1375, 1379, 1383, 1436, 1458, 1461, 1507, 1508, 1600, 1632, 1636, 1640, 1667, 1679, 1695, 1702, 1709, 1710, 1711, 1718, 1727, 1728, 1791, 1827, 1840, 1895, 2074

Adventists, Seventh-day. *See* Seventh-day Adventists

Adzuki bean. *See* Azuki Bean

Aflatoxins. *See* Toxins and Toxicity in Foods and Feeds–Aflatoxins

Africa–Angola 2065

Africa Basic Foods. *See* Harrison, D.W. (M.D.), and Africa Basic Foods (Uganda)

Africa–Botswana (Bechuanaland until 1966) 2065

Africa–Burkina Faso (Upper Volta before 4 Aug. 1984) 2065

Africa–Congo (formerly Zaire). Officially Democratic Republic of the Congo (DRC or DR Congo). Also known as Congo-Kinshasa.

Named Zaire from Oct. 1971 to May 1997. Named Congo Free State from 1855-1908, Belgian Congo (*Congo Belge* in French) from 1908-1960, Republic of the Congo from 1960 to 1964, then Democratic Republic of the Congo from 1964-1971 1772, 2065

Africa–Cote d’Ivoire (Ivory Coast until Oct. 1985; Part of French West Africa from 1895-1959) 2065

Africa–Egypt. Named United Arab Republic (UAR) from 1958-1971 300, 361, 397, 402, 406, 446, 655, 878, 1320, 1381, 1893, 1962, 2068

Africa–Ethiopia (Including Eritrea in Ethiopia PDR from 1952 to May 1993. Formerly Part of Italian East Africa) 1251, 2065

Africa (General) 655, 904, 991, 1075, 1441, 1602, 1891, 2109

Africa–Ghana (Gold Coast before 1957) 476, 2065, 2109, 2122, 2135

Africa–Kenya (British East Africa Protectorate from 1895. Renamed Kenya Protectorate in 1920) 539, 578, 706, 909, 2065

Africa–Lesotho (Basutoland before 1966). Constitutional Monarchy Surrounded by South Africa.. 1106

Africa–Madagascar (Malagasy Republic or Republique Malgache before 1975) 1007, 1022, 1026, 1179, 1304

Africa–Malawi (Nyasaland from 1891-1964) 2065, 2135

Africa–Mali (Part of French West Africa from 1895-1960. Senegal & Sudanese Republic from June 20 to August 20, 1960. Formerly also called French Sudan (*Soudan français*, created on 18 Aug. 1890) and Upper Senegal-Niger (*Haute-Sénégal et Niger*)) 1950

Africa–Morocco, Kingdom of (Including Western Sahara. Divided into French Morocco and Spanish Morocco from 1912-1956) 1962

Africa–Mozambique (Moçambique; Portuguese East Africa before 1975) 1106, 2065, 2068, 2109

Africa–Namibia (German South-West Africa from 1885 to 1915, and South-West Africa from 1919 to 1966 as a mandate of the Union of South Africa. Namibia came into popular use in 1966 and became official in March 1990) 2135

Africa–Nigeria, Federal Republic of 446, 542, 655, 701, 1107, 1179, 1962, 2065, 2109, 2135

Africa–Senegal (Part of French West Africa from 1895-1959. Sénégal & Sudanese Republic from June 20 to August 20, 1960. Includes Senegambia) 1055, 2000, 2065, 2109, 2135

Africa–South Africa, Republic of (Including four former Homelands–Bophuthatswana, Transkei, Venda, and Ciskei). Named Union of South Africa from May 1910 to May 1961 481, 496, 655, 668, 701, 1550, 1599, 1601, 1962, 2065, 2068, 2109

Africa–Soybean Production, Area and Stocks–Statistics, Trends,

- and Analyses 1181, 1962
- Africa–Sudan (Anglo-Egyptian Sudan from 1899-1956) 984
- Africa–Tanzania, United Republic of (Formed the Bulk of German East Africa 1895-1946. Tanganyika existed 1920-1961. Created in 1964 by Merger of Tanganyika and Zanzibar) 706, 1332, 2065
- Africa–Tunisia 769, 1055
- Africa–Uganda 511, 542, 1962, 2065, 2151
- Africa–Zambia (Northern Rhodesia from 1899-1964) 1181, 1962, 2109
- Africa–Zimbabwe (Southern Rhodesia from 1923-1970, Rhodesia from 1970-79) 496, 1181, 1414, 1528, 1962, 2065, 2068
- Ag Processing Inc a cooperative (AGP) 1002, 1027, 1084, 1103, 1104, 1249, 1266, 1415, 1416, 1443, 1444, 1503, 1541, 1639, 1702, 1719, 1840, 1846, 1877, 1905, 1923, 2005, 2006, 2007, 2046, 2055
- AGRI Industries, Inc. (Iowa) 827, 899, 903, 905, 1103, 1266, 1551, 1702, 1840
- Agricultural Adjustment Administration (AAA). *See* United States Department of Agriculture (USDA)–Agricultural Adjustment Administration
- Agricultural Chemistry and Engineering, Bureau. *See* United States Department of Agriculture (USDA)–Bureau of Agricultural and Industrial Chemistry
- Agricultural Experiment Stations in the United States 26, 27, 58, 90, 94, 115, 156, 171, 206, 251, 283, 288, 301, 386, 440, 476, 557, 559, 615, 674, 690, 715, 983, 1144, 1407, 2102, 2132
- Agricultural Research Service of USDA. *See* United States Department of Agriculture (USDA)–Agricultural Research Service (ARS)
- Agricultural Service of USDA. *See* United States Department of Agriculture (USDA)–Agricultural Cooperative Service. Including Farmer Cooperative Service (1926)
- Agronomy, soybean. *See* Cultural Practices, Soybean Production
- Aihara, Herman and Cornelia–Their Life and Work with Macrobiotics 715
- Ajinomoto Co. Inc. (Tokyo, Japan) 830, 1028, 1041, 1581, 1631, 1663, 1773
- Akwarius Almere. *See* Manna Natural Foods (Amsterdam, The Netherlands)
- Albert's Tofuhaus (Lautersheim, Germany). Formerly named Albert Hess Tofuhaus Rittersheim, Tofuhaus Tiefenthal, and Das Tofuhaus 1049, 1183, 1269
- Alfa-Laval (Lund, Sweden) 629, 995, 1007, 1042, 1179, 1273, 1301, 1304, 1317, 1319, 1509, 1772, 1859
- Alfalfa or Lucerne / Lucern (*Medicago sativa*) 330, 620, 1464, 1667
- Alkaline food, ash, reaction, or balance in diet and health. *See* Nutrition–Acid-Base Balance
- Allergies. *See* Nutrition–Biologically Active Phytochemicals–Allergens
- Allied Mills, Inc. (Formed 6 Aug. 1929) by the Merger of American Milling Co. (Peoria, Illinois) and McMillen Feed Co. Maker of Wayne Feeds 26, 27, 29, 37, 62, 70, 75, 76, 81, 115, 132, 137, 138, 139, 142, 157, 159, 160, 170, 172, 179, 209, 225, 242, 245, 251, 254, 310, 313, 319, 361, 457, 558, 623, 667, 690, 691, 827, 972, 1029, 1104, 1455, 1913, 2020, 2149
- Allis-Chalmers Manufacturing Co. (Milwaukee, Wisconsin). Made Farm Equipment (Tractors, Combines) and Soybean Processing Equipment (Driers, Rolling and Flaking Mills, Solvent Extraction Units) 129, 175, 288, 300, 520, 750, 1455
- Almond Milk and Cream. *See also*: Almonds Used to Flavor Soymilk, Rice Milk, etc.. 570, 1571, 1914, 2045
- Almonds Used to Flavor Commercial Soymilk, Soy Ice Cream, Soy Cheese, Amazake, Rice Milk, or Other Commercial Non-Dairy Products 1133, 1139, 1259
- Almonds (*Prunus dulcis* syn. *P. amygdalus*)–Especially Origin and Early History of the Almond. Including Almond Bread, Almond Meal, and Almonds Seasoned with Soy Sauce / Tamari 1162, 2100
- Alpro (Wevelgem, Belgium), Including the Provamel and Belsoy Brands Sold in Health Foods Stores 877, 919, 1004, 1006, 1007, 1022, 1024, 1026, 1031, 1042, 1128, 1150, 1160, 1248, 1254, 1263, 1301, 1302, 1303, 1304, 1317, 1325, 1332, 1333, 1339, 1354, 1356, 1370, 1391, 1486, 1498, 1499, 1509, 1569, 1645, 1859, 1956, 2001, 2044, 2075
- Alternative medicine. *See* Medicine–Alternative
- Aluminum in Soybeans and Soyfoods 1254
- Amaranth, Grown for Grain / Seed (*Amaranthus hypochondriacus*, *A. caudatus*, and *A. cruentus*. Genus formerly spelled *Amarantus*) 1081, 1240, 1442
- Amazake. *See* Rice Milk (Non-Dairy)–Amazake
- American Lecithin Corp. (Incorporated 1930), American Lecithin Company (Re-incorporated 1934-35), and Joseph Eichberg, President of Both 79, 142, 150, 163, 207, 289, 313, 957, 985, 987, 1079, 1080, 1085, 1088, 1091, 1384, 1439, 1861, 1873, 1894, 2118
- American Milling Co. *See* Allied Mills, Inc.
- American Miso Co. (Rutherfordton, North Carolina) 1689

- American Natural Snacks (St. Augustine, Florida) 1570
- American Philosophical Society (Philadelphia). *See* Franklin, Benjamin
- American Soy Products (Michigan). *See* Natural Foods Distributors and Manufacturers in the USA–Eden Foods
- American Soybean Association (ASA)–Activities in the United States and Canada, and General Information (Headquarters in St. Louis, Missouri. Established 3 Sept. 1920. Named National Soybean Growers' Association until 1925) 79, 115, 132, 172, 187, 245, 267, 301, 376, 435, 715, 816, 849, 885, 925, 1075, 1176, 1247, 1298, 1348, 1668, 2080
- American Soybean Association (ASA)–Activities, Offices, and Influence in Africa 406, 2076
- American Soybean Association (ASA)–Activities, Offices, and Influence in Asia 406, 446, 447, 1668, 1953, 2076
- American Soybean Association (ASA)–Activities, Offices, and Influence in Europe (Western and Eastern) 247, 325, 326, 331, 341, 406, 629, 999, 1004, 1042, 1303, 1645, 1870
- American Soybean Association (ASA)–Activities, Offices, and Influence in Latin America 406, 446, 447, 1177, 1250, 1258, 1933
- American Soybean Association (ASA)–Activities, Offices, and Influence Worldwide (General) 721, 925, 1668, 1938
- American Soybean Association (ASA)–Checkoff Programs (Legislated / Mandatory Funding. State Programs Starting in North Carolina in Sept. 1966, National Programs–SPARC–Starting in 1989-1991), and State Promotion Boards (Research & Promotion Councils) 1538, 1590, 1698, 1799, 1854, 1903, 1921, 1970
- American Soybean Association (ASA)–Honorary Life Members 281, 472, 499, 558
- American Soybean Association (ASA)–Japanese-American Soybean Institute (JASI) 361, 2156
- American Soybean Association (ASA)–Legislative Activities 320, 826
- American Soybean Association (ASA)–Meetings / Conventions (Annual) and Meeting Sites 39, 198, 233, 532
- American Soybean Association (ASA) or United Soybean Board–Activities Related to Food Uses of Soybeans / Soyfoods, or Soy Nutrition, Outside the United States (Not Including Soy Oil) 247, 446, 447, 629, 721, 1004, 1006, 1042, 1177, 1250, 1258, 1546, 1714, 1891, 1953
- American Soybean Association (ASA)–Periodicals, Including Soybean Digest, Proceedings of the American Soybean Assoc., Soybean Blue Book, Soya Bluebook, Late News, etc.. 320, 361, 376, 435
- American Soybean Association (ASA)–Soybean Council of America (June 1956-1969). Replaced by American Soybean Institute (Est. 11 July 1969) 325, 326, 331, 341, 348, 350, 354, 361, 364, 382, 384, 397, 404, 406, 419, 446, 447, 452, 769, 826
- American Soybean Association (ASA)–State Soybean Associations and Boards (Starting with Minnesota in 1962) 1416, 1482, 1590, 1643, 1645, 1689, 1693, 1698, 1747, 1780, 1831, 1841, 1854, 1855, 1888, 1891, 1903, 1978, 1992
- American Soybean Association (ASA)–State Soybean Associations and United Soybean Board–Activities Related to Food Uses of Soybeans / Soyfoods, or Soy Nutrition, in the United States (Not Including Soy Oil or Edible Oil Products) 39, 79, 117, 198, 376, 476, 532, 722, 1348, 1482, 1565, 1573, 1622, 1643, 1645, 1681, 1689, 1693, 1747, 1780, 1799, 1831, 1841, 1854, 1855, 1867, 1888, 1903, 1911, 1921, 1960, 1967, 1970, 1978
- American Soybean Association (ASA)–Strayer. *See* Strayer Family of Iowa
- American Soybean Association (ASA)–United Soybean Board (USB, Established 1991, Chesterfield, Missouri) 1416, 1443, 1482, 1538, 1565, 1645, 1698, 1767, 1799, 1846, 1847, 1865, 1867, 1870, 1888, 1903, 1911, 1921, 1967, 1978, 2000, 2056, 2064, 2075, 2091, 2101, 2107, 2135
- Amino Acids and Amino Acid Composition and Content. *See also* Nutrition–Protein Quality; Soy Sauce, HVP Type 71, 94, 96, 128, 171, 234, 247, 291, 338, 361, 382, 449, 504, 556, 576, 577, 587, 603, 607, 615, 687, 721, 766, 770, 840, 1055, 1089, 1106, 1505, 1539, 1544, 1554, 1581, 1583, 1586, 1593, 1597, 1601, 1618, 1631, 1663, 1672, 1676, 1691, 1694, 1704, 1772, 1773, 1843, 1849, 1882, 1886, 2046
- Anatomy, soybean. *See* Soybean–Morphology, Structure, and Anatomy
- Anderson International Corp. (Cleveland, Ohio). Manufacturer of Expellers for Soybean Crushing, Solvent Extraction Equipment, and Extrusion Cooking Equipment. Formerly V.D. Anderson Co. and Anderson IBEC 43, 58, 61, 175, 216, 361, 520, 690, 971, 1079, 1082, 1668, 1846, 2092
- Andreas Family of Minnesota and Iowa–Incl. Reuben Peter Andreas, and his sons Albert, Glenn, Dwayne (1918-2016), and Lowell Andreas (1922-2009) 3, 18, 19, 48, 49, 52, 63, 89, 91, 114, 132, 133, 172, 180, 216, 225, 232, 243, 254, 255, 275, 306, 307, 316, 317, 318, 319, 327, 335, 342, 353, 365, 366, 367, 368, 375, 393, 424, 427, 452, 454, 457, 463, 471, 472, 473, 477, 494, 501, 508, 513, 514, 520, 521, 524, 537, 558, 590, 606, 612, 620, 671, 691, 826, 827, 844, 876, 931, 932, 951, 968, 1081, 1101, 1151, 1164, 1213, 1231, 1239, 1243, 1244, 1260, 1266, 1298, 1305, 1327, 1328, 1329, 1330, 1364, 1380, 1386, 1391, 1396, 1430, 1432, 1455, 1480, 1488, 1505, 1518, 1519, 1521, 1523, 1538, 1540, 1544, 1554, 1566, 1568, 1577, 1581, 1595, 1597, 1598, 1603, 1616, 1623, 1625, 1634, 1641, 1670, 1672, 1673, 1675, 1676, 1680, 1690, 1691, 1694, 1710, 1715, 1719, 1721, 1723, 1757, 1765, 1773, 1777, 1780, 1781, 1794, 1796, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1809, 1810, 1812, 1813, 1819, 1820, 1826, 1837, 1843, 1848, 1874, 1878, 1879,

1882, 1897, 1900, 1904, 1906, 1912, 1932, 1934, 1955, 1963, 1986, 1993, 2019, 2041, 2052, 2069, 2102, 2121, 2122, 2123, 2124, 2132, 2142, 2143, 2145, 2147, 2157, 2158

Animal Rights / Liberation. Avoidance of Exploitation of Animals by Humans 1060, 1388, 1409, 1735

Animal Welfare (Including Protection and Cruel Treatment of Animals). See also: Animal Rights 1351, 1353, 1365

Antinutritional Factors (General). See also: Allergens, Estrogens, Goitrogens, Hemagglutinins (Lectins), Trypsin / Protease Inhibitors. See also: Phytic Acid 205, 816, 849, 1147, 1753, 1772, 1886, 1936

Antioxidants and Antioxidant / Antioxidative Activity (Especially in Soybeans and Soyfoods) 64, 175, 440, 813, 1460, 1544, 1554, 1635, 1667, 1781, 1814

APV Systems, Soya Technology Division. Named Danish Turnkey Dairies Ltd., Soya Technology Division until 1987 (Aarhus, Denmark; DTD / STS) 1006, 1042, 1074, 1094, 1107, 1179, 1273, 1301, 1317, 1339, 1391

Aquaculture. See Fish or Crustaceans (e.g. Shrimp) Fed Soybean Meal Using Aquaculture or Mariculture

Archer Daniels Midland Co. (ADM) (Decatur, Illinois; Minneapolis, Minnesota until 1969) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451,

452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195,

- 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494, 1495, 1496, 1497, 1498, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521, 1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546, 1547, 1548, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1626, 1627, 1628, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638, 1639, 1640, 1641, 1642, 1643, 1644, 1645, 1646, 1647, 1648, 1649, 1650, 1651, 1652, 1653, 1654, 1655, 1656, 1657, 1658, 1659, 1660, 1661, 1662, 1663, 1664, 1665, 1666, 1667, 1668, 1669, 1670, 1671, 1672, 1673, 1674, 1675, 1676, 1677, 1678, 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687, 1688, 1689, 1690, 1691, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1707, 1708, 1709, 1710, 1711, 1712, 1713, 1714, 1715, 1716, 1717, 1718, 1719, 1720, 1721, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729, 1730, 1731, 1732, 1733, 1734, 1735, 1736, 1737, 1738, 1739, 1740, 1741, 1742, 1743, 1744, 1745, 1746, 1747, 1748, 1749, 1750, 1751, 1752, 1753, 1754, 1755, 1756, 1757, 1758, 1759, 1760, 1761, 1762, 1763, 1764, 1765, 1766, 1767, 1768, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1776, 1777, 1778, 1779, 1780, 1781, 1782, 1783, 1784, 1785, 1786, 1787, 1788, 1789, 1790, 1791, 1792, 1793, 1794, 1795, 1796, 1797, 1798, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158
- Argentina. *See* Latin America, South America–Argentina
- Arkady, British. *See* British Arkady Co. Ltd.
- Arkansas Grain Corp. *See* Riceland Foods
- Arrowhead Mills (Hereford, Deaf Smith County, Texas). Established in Aug. 1960 by Frank Ford. Including Arrowhead Distributing 839, 1021, 1613, 1648, 1898, 2150
- Asgrow (Des Moines, Iowa). Incl. Associated Seed Growers, Inc. Acquired in Feb. 1997 by Monsanto Co. from Empresas La Moderna, S.A. (ELM) 1621, 1725, 1859
- Asia, Central (General) 2018
- Asia, Central–Kazakhstan / Kazakstan (Formerly Kazakh SSR, a Central Asian Soviet Republic from 1917 to Dec. 1991) 2018
- Asia, Central–Tajikistan (Formerly Tadzhik SSR, a Central Asian Soviet Republic from 1917 to Dec. 1991. Also spelled Tadzhikistan) 2018, 2028
- Asia, Central–Turkmenistan (Formerly Turkmen SSR, a Central Asian Soviet Republic from 1917 to Dec. 1991) 2018, 2028
- Asia, Central–Uzbekistan (Formerly Uzbek SSR, a Central Asian Soviet Republic from 1917 to Dec. 1991) 2018, 2028
- Asia, East–China–Chinese Restaurants Outside China, or Soy Ingredients Used in Chinese-Style Recipes, Food Products, or

Dishes Outside China 621, 2028

Asia, East–China–English–Language Documents that Contain Cantonese Romanization, Transliteration, or Pronunciation of Numerous Soyfood Names. There Is No Standard Way of Romanizing Cantonese 1056

Asia, East–China (People’s Republic of China; Zhonghua Renmin Gonghe Guo). See also Hong Kong, Manchuria, and Tibet 42, 79, 129, 137, 139, 153, 175, 198, 298, 299, 324, 470, 559, 655, 662, 688, 766, 767, 789, 925, 945, 971, 995, 1028, 1055, 1056, 1179, 1208, 1214, 1414, 1456, 1503, 1544, 1554, 1566, 1598, 1642, 1680, 1694, 1714, 1719, 1886, 1901, 1904, 1952, 1954, 1963, 1978, 1981, 1989, 1997, 2011, 2013, 2017, 2038, 2048, 2084, 2095, 2156

Asia, East–China–Shennong / Shên Nung / Shen Nung–The Heavenly Husbandman and Mythical Early Emperor of China 137, 139, 688

Asia, East–China–Soybean Production, Area and Stocks–Statistics, Trends, and Analyses 789, 2048

Asia, East–Chinese overseas. *See* Chinese Overseas, Especially Work with Soy (Including Chinese from Taiwan, Hong Kong, Singapore, etc.)

Asia, East (General) 376, 467, 629, 653, 655, 869, 987, 1042, 1185, 1421, 1827

Asia, East–Hong Kong Special Administrative Region (SAR) (British Colony until 1 July 1997, then returned to China) 446, 447, 496, 534, 577, 578, 1050, 1150, 1320, 1342, 1381, 1414, 1436, 1507, 1642, 1709, 1859, 2095, 2156

Asia, East–Japan (Nihon or Nippon) 40, 115, 198, 301, 361, 375, 470, 481, 576, 577, 603, 618, 655, 671, 723, 769, 791, 810, 830, 839, 878, 896, 945, 960, 982, 1018, 1028, 1041, 1050, 1055, 1056, 1073, 1075, 1088, 1090, 1105, 1107, 1108, 1147, 1150, 1179, 1210, 1214, 1231, 1264, 1278, 1320, 1368, 1376, 1387, 1388, 1414, 1436, 1507, 1509, 1544, 1567, 1581, 1620, 1645, 1646, 1661, 1663, 1668, 1671, 1700, 1709, 1714, 1736, 1759, 1764, 1772, 1773, 1781, 1791, 1834, 1852, 1859, 1916, 2027, 2083, 2095, 2103, 2156

Asia, East–Japan–Soybean Production, Area and Stocks–Statistics, Trends, and Analyses 115

Asia, East–Japanese overseas. *See* Japanese Overseas, Especially Work with Soy

Asia, East–Korea (North and South; Formerly Also Spelled Corea and Called “Chosen” by the Japanese [1907-1945]) 115, 769, 822, 1056, 1069, 1320, 1338, 1342, 1381, 1414, 1834, 1868, 1995, 2028, 2048, 2089

Asia, East–Koreans overseas. *See* Koreans Overseas, Especially Work with Soy

Asia, East–Manchuria (Called Manchoukuo or Manchukuo by Japanese 1932-45; The Provinces of Heilongjiang [Heilungkiang], Jilin [Kirin], and Liaoning Were Called Northeast China after 1950)

15, 40, 115, 129, 137, 139, 153, 157, 175, 298, 299, 559, 987, 995, 1007, 1081, 1304, 1954, 1989, 2048

Asia, East–Manchuria–Soybean Production, Area and Stocks–Statistics, Trends, and Analyses 115

Asia, East–Soybean Production, Area and Stocks–Statistics, Trends, and Analyses 789

Asia, East–Taiwan (Republic of China. Widely called by its Portuguese name, Formosa, from the 1870s until about 1945) 115, 493, 496, 578, 596, 1332, 1338, 1414, 2027, 2048

Asia, East–Taiwan–Soybean Production, Area and Stocks–Statistics, Trends, and Analyses 115

Asia (General, Including East, Southeast, South, Middle East, and Central) 870, 1056, 1441, 1504, 1543, 1598, 1691, 1739, 1797, 1826, 1845, 1866

Asia, Middle East–Afghanistan, Islamic State of 2065

Asia, Middle East–Iran, Islamic Republic of (Jomhori-e-Islami-e-Îrân; Persia before 1935) 769, 1081, 1377, 1820, 2018

Asia, Middle East–Israel and Judaism (State of Israel, Medinat Israel; Established May 1948; Including West Bank, Gaza Strip, and Golan Heights Since 1967) 300, 576, 684, 690, 970, 1058, 1271, 1343, 1365, 1377, 1435, 1558, 1699, 1764, 1818, 1830, 1853, 1886, 1898, 1969, 1996, 1997, 2001, 2035

Asia, Middle East–Lebanon (al-Jumhuriya al-Lubnaniya) 517

Asia, Middle East, Mideast, or Near East (General) 655

Asia, Middle East–Saudi Arabia, Kingdom of (al-Mamlaka al-`Arabiya as-Sa`udiya) 998, 1414

Asia, Middle East–Turkey (Including Anatolia or Asia Minor) 406, 1544, 2018, 2127

Asia, South–Bangladesh, People’s Republic of (East Bengal [See India] from 1700s-1947, and East Pakistan [See Pakistan] from 1947-1971) 2038, 2065, 2076

Asia, South–India (Bharat, Including Sikkim, and Andaman and Nicobar Islands) 79, 324, 406, 446, 447, 452, 481, 539, 576, 578, 607, 655, 662, 706, 766, 800, 807, 809, 869, 944, 958, 959, 984, 989, 1028, 1041, 1046, 1117, 1128, 1179, 1187, 1200, 1214, 1320, 1331, 1350, 1464, 1746, 1772, 1953, 1962, 2018, 2038, 2043, 2065, 2076, 2126, 2151

Asia, South (Indian Subcontinent) 2038

Asia, South–Nepal, Kingdom of 945, 2076

Asia, South–Pakistan, Islamic Republic of (Part of British India until 1947. Divided into West Pakistan and East Pakistan 1947-1971, when East Pakistan Became Independent as Bangladesh) 361, 406, 446, 447, 527, 539, 577, 578, 655, 869, 2038, 2065, 2075,

2076

Asia, South–Soybean Production, Area and Stocks–Statistics, Trends, and Analyses 989, 1504, 2038

Asia, South–Sri Lanka, Democratic Socialist Republic of (Ceylon before 22 May 1972. Serendib was the ancient Arabic name) 706, 859, 946, 956, 1011, 1012, 1013, 1028, 1117, 1170, 1172, 1185, 1194, 1200, 1206, 1211, 1299, 1428, 1504, 2076, 2151

Asia, South–Trade (Imports or Exports) of Soybeans, Soy Oil, and / or Soybean Meal–Statistics. See also Trade (International) 1194

Asia, Southeast–Cambodia, Kingdom of (Kampuchea from 1979 to the 1980s; Also Khmer Republic) 2065

Asia, Southeast (General) 691

Asia, Southeast–Indonesia (Netherland(s) Indies, Netherlands East Indies, or Dutch East Indies before 1945) (Including Islands of Java, Borneo, Celebes, Lesser Sunda, Moluccas, New Guinea [West Irian], and Sumatra) 115, 139, 476, 496, 578, 655, 662, 672, 706, 766, 1056, 1107, 1214, 1338, 1342, 1414, 2065

Asia, Southeast–Indonesia–Soybean Production, Area and Stocks–Statistics, Trends, and Analyses 115

Asia, Southeast–Indonesians overseas. See Indonesians Overseas, Especially Work with Soy

Asia, Southeast–Malaysia, Federation of (Including East Malaysia Composed of Sarawak and Sabah. British Borneo or North Borneo from about 1881 to 1963). Federation of Malaya before 1963 1214, 1414, 1507

Asia, Southeast–Myanmar / Burma. Officially Union of Myanmar 446, 447

Asia, Southeast–Philippines, Republic of the 446, 447, 706, 822, 1028, 1338, 1342, 1456, 1969

Asia, Southeast–Singapore (Part of the Straits Settlements [British] from 1826 to 1946) 1094, 1179, 1338, 1436, 1507, 1954, 1969, 2027, 2038

Asia, Southeast–Thailand, Kingdom of (Siam before 1939) 527, 539, 576, 577, 578, 810, 945, 1056, 1381, 1414, 1914, 2022, 2027, 2056, 2151

Asia, Southeast–Vietnam / Viet Nam, Socialist Republic of (North and South) (Divided by French into Tonkin, Annam, and Cochinchine from 1887-1945) 2065

Asia, Southeast–Vietnamese overseas. See Vietnamese Overseas, Especially Work with Soy

Asia, soyfoods movement in. See Soyfoods Movement in Asia

Asia, Transcaucasia–Armenia (Formerly Armenian SSR, a Transcaucasian Soviet Republic from 1917 to Dec. 1991) 1890

Asia, Transcaucasia–Georgia, Republic of (Formerly Georgian SSR, a Transcaucasian Soviet Republic from 1921 to Dec. 1991) 2018

Aspergillus oryzae. See Koji, Miso, or Soy Sauce

Associated Seed Growers, Inc. See Asgrow (Des Moines, Iowa)

Auenland Tofu und Soja Produkte (Prien-Chiemsee, Germany). Founded by Peter Wiegand in March 1982 1049, 1269

Australasia. See Oceania

Australia. See Oceania–Australia

Azuki Bean. *Vigna angularis* (Willd.) Ohwi & H. Ohashi. Also called Adzuki, Aduki, Adsuki, Adzinki, Red Bean, Chinese Red Bean, Red Mung Bean, Small Red Bean. Japanese–Kintoki, Komame, Shōzu. Chinese–Xiaodou, Chixiaodou, Hsiao Tou [Small Bean], Ch'ih Hsiao Tou [Red Small Bean]. Former scientific names: *Phaseolus radiatus* (L.), *Dolichos angularis* (Willd.), *Phaseolus angularis* (Willd.) Wight, or *Azukia angularis* (Willd.) Ohwi 665, 839, 1018, 1056, 1059, 1121, 1161, 1637, 1684, 1732, 1971, 2083

Azumaya, Inc. (Started Making Tofu in 1930 in San Francisco, California). Acquired by Vitasoy on 27 May 1993 945, 1090, 1150, 1180, 1859, 2156

Bacon or bacon bits, meatless. See Meat Alternatives–Meatless Bacon, Ham, Chorizo and Other Pork-related Products

Bacteria causing toxicity. See Toxins and Toxicity in Foods and Feeds–Microorganisms, Especially Bacteria, and that Cause Food Poisoning

Bacteria in intestines–beneficial. See Intestinal Flora / Bacteria

Balanced Foods, Inc. (New York City, and North Bergen, New Jersey). Wholesale Distributor of Health Foods and Natural Foods. Founded in 1939 by Maurice “Doc” Shefferman, Sam and Will Reiser. Purchased in Dec. 1986 by Tree of Life 1187

Barges used to transport soybeans. See Transportation of Mature Soybeans to Market, Transportation of Soybeans or Soy Products to Market by Water Using Barges, Junks, etc

Barricini Foods (Mountain Lakes, New Jersey)–Soy Ice Cream Company. Acquired Farm Foods and Ice Bean on 31 May 1985. Sold Farm Foods to 21st Century in 1993 1107, 1150, 1278, 1859

Bars–Energy Bars or Nutrition Bars Made with Soy (Not Including Frozen Dessert Bars) 1747, 1799

Battle Creek Food Co. See Kellogg, John Harvey (M.D.)

Bean curd. See Tofu

Bean curd skin. See Yuba

- Bean curd sticks, dried. *See* Yuba–Dried Yuba Sticks
- Bean paste. *See* Miso
- Beef alternatives. *See* Meat Alternatives–Beef Alternatives, Including Beef Jerky, etc. *See also* Meatless Burgers
- Bees, Honeybees (*Apis mellifera*), and Apiculture–Soy Flour Fed in Pollen Substitutes or Supplements 616, 842, 846
- Belleme, John. *See* American Miso Co. (Rutherfordton, North Carolina)
- Benni, Benne, Benniseed. *See* Sesame Seed
- Benzene / Benzine / Benzol solvents for extraction. *See* Solvents
- Berczeller, Laszlo (1890-1955) 42, 79, 629, 923, 1042, 1109, 1331, 1350, 1463, 1546, 1712, 1778, 1846, 2120
- Bibliographies and / or Reviews of the Literature (Contains More Than 50 References or Citations) 137, 139, 153, 175, 195, 218, 251, 283, 287, 298, 299, 522, 555, 603, 629, 658, 666, 696, 716, 770, 773, 781, 805, 815, 830, 870, 871, 1090, 1147, 1204, 1331, 1339, 1347, 1350, 1356, 1421, 1427, 1461, 1474, 1475, 1509, 1563, 1614, 1772, 1910, 1914, 1915, 1938, 1988, 2067, 2074, 2090, 2112
- Binder for Sand Foundry Cores / Core Oil–Industrial Uses of Soy Oil as a Drying Oil 65, 74, 94, 96, 139, 157, 256, 305, 313, 330, 344, 394, 1075
- Biographies, Biographical Sketches, and Autobiographies–*See also*: Obituaries 84, 126, 281, 324, 472, 499, 558, 570, 627, 651, 694, 738, 925, 1075, 1164, 1396, 1497, 1604, 1674, 1879, 1996, 1997, 2001, 2045, 2066
- Biological control. *See* Integrated Pest Management (IPM)
- Biotechnology applied to soybeans. *See* Genetic Engineering, Transgenics, Transgenic Plants and Biotechnology / Biotech
- Black soybeans. *See* Soybean Seeds–Black, Soybean Seeds–Black in Color
- Black-eyed pea. *See* Cowpea–*Vigna unguiculata*
- Blaw-Knox Co. (Pittsburgh, Pennsylvania). Maker of Soybean Crushing Equipment, Especially the Rotocel 236, 288, 327, 361, 520, 2020
- Boca Burger. *See* Kraft Foods Inc.
- Boca Burger Inc. Founded 1993. Acquired Feb. 2000 by Kraft Foods Inc.. 1570, 1571, 1572, 1618
- Boone Valley Cooperative Processing Association (Eagle Grove, Iowa) 172, 209, 211, 242, 254, 319, 579, 790, 899, 903, 905, 1002, 1103, 2006, 2007
- Borden, Inc. (Columbus, Ohio; New York City, New York; Waterloo, Iowa; Elgin and Kankakee, Illinois) 142, 209, 242, 245, 251, 254, 310, 319, 402, 496, 991, 1082, 1427
- Boyer, Robert. *See* Ford, Henry
- Brady Crop Cooker. *See* Extruders and Extrusion Cooking, Low Cost–Brady Crop Cooker
- Bragg, Paul Chappius (1895-1975) Author and Health Foods Advocate 1611
- Bran, soy. *See* Fiber, Soy
- Brassica napus. *See* Rapeseed
- Brassica napus (L.) var. napus. *See* Canola
- Brazil. *See* Latin America, South America–Brazil
- Brazil, Deforestation in. *See* Latin America, South America–Brazil, Deforestation in
- Breeding of soybeans. *See* Genetic Engineering, Transgenics, Transgenic Plants and Biotechnology / Biotech, Variety Development and Breeding
- Breeding of Soybeans and Classical Genetics 823, 1030, 1033
- Breeding or Selection of Soybeans for Use as Soy Oil or Meal 1030
- Breeding soybeans for food uses. *See* Variety Development, Breeding, Selection, Evaluation, Growing, or Handling of Soybeans for Food Uses
- Brew flakes, soybean. *See* Soy Flour or Flakes–Use in Brewing
- Briggs, George M. (1884-1970, Univ. of Wisconsin) 558
- British Arkady Company Ltd. and British Arkady Holdings Ltd. (Manchester, England). Subsidiary of ADM of the USA. Including the Haldane Foods Group 16, 24, 84, 99, 339, 340, 390, 396, 411, 437, 438, 441, 442, 443, 444, 474, 496, 530, 563, 591, 602, 625, 628, 630, 633, 634, 644, 663, 682, 704, 728, 743, 759, 778, 780, 813, 898, 915, 916, 917, 918, 920, 936, 963, 964, 966, 967, 977, 988, 1004, 1006, 1007, 1015, 1042, 1051, 1124, 1143, 1145, 1159, 1188, 1192, 1197, 1199, 1208, 1222, 1226, 1228, 1257, 1270, 1274, 1278, 1286, 1287, 1288, 1302, 1317, 1318, 1321, 1327, 1328, 1344, 1345, 1351, 1353, 1356, 1380, 1381, 1387, 1391, 1393, 1431, 1441, 1448, 1462, 1513, 1516, 1518, 1519, 1520, 1521, 1539, 1578, 1579, 1594, 1715, 1859, 2049, 2085, 2094, 2121
- British Columbia. *See* Canadian Provinces and Territories–British Columbia
- Broad Bean. *Vicia faba* L., formerly *Faba vulgaris*, Mönch. Also called Faba Bean, Fava Bean, Horse Bean. Chinese–Candou (“silkworm bean”). Japanese–Soramame. German–Ackerbohne, Saubohne or Buschbohne. French–Grosse Fève, Fève de Marais, Féverole, Faverole, Gourgane 767, 1018

- Brown rice. *See* Rice, Brown
- Bruno Fischer GmbH (Aetorf, Germany). Sold to DE-VAU-GE on 31 Dec. 1998. Fischer Then Started a New Company Named Natumi GmbH 1787, 1859
- Buckeye Cotton Oil Co. *See* Procter & Gamble Co.
- Building materials. *See* Adhesives or Glues for Plywood, Other Woods, Wallpaper, or Building Materials
- Bunge Corp. (White Plains, New York). Including Lauhoff Grain Co. (Danville, Illinois) since 1979 540, 683, 769, 789, 790, 824, 849, 855, 899, 900, 903, 905, 932, 1055, 1103, 1104, 1147, 1149, 1150, 1212, 1214, 1249, 1251, 1278, 1376, 1435, 1455, 1503, 1529, 1597, 1699, 1700, 1702, 1719, 1762, 1764, 1852, 1871, 1880, 1886, 1930, 1931, 1938, 1940, 1944, 1946, 1962, 1965, 1993, 1996, 1997, 1998, 2011, 2014, 2017, 2030, 2037, 2038, 2039, 2040, 2048, 2054, 2060, 2064, 2065, 2071, 2073, 2081, 2092, 2095, 2099, 2106, 2109, 2115, 2116, 2119, 2134
- Burgers, meatless. *See* Meat Alternatives–Meatless Burgers and Patties
- Burke, Armand. *See* Soya Corporation of America and Dr. Armand Burke
- Burlison, William Leonidas (1882-1958, Univ. of Illinois) 26, 27, 62, 115, 118, 132, 137, 139, 172, 301, 558, 925, 1668, 2103
- Burma. *See* Asia, Southeast–Myanmar
- Butter made from nuts or seeds. *See* Nut Butters
- Butter-beans. *See* Lima Bean
- Cacoja (France). *See* Sojinal / Biosoja
- Cake or meal, soybean. *See* Soybean Meal
- Calf, Lamb, or Pig Milk Replacer  
Replacers 95, 695, 992, 1337, 1349, 1435, 1764, 1852, 1886, 1996
- California. *See* United States–States–California
- Canada 38, 40, 43, 61, 64, 75, 79, 98, 150, 193, 195, 209, 210, 231, 282, 284, 290, 291, 298, 299, 328, 361, 452, 457, 489, 570, 598, 607, 618, 647, 655, 678, 681, 682, 683, 694, 711, 744, 752, 790, 793, 806, 820, 822, 826, 829, 837, 840, 841, 860, 873, 888, 902, 903, 904, 911, 954, 960, 965, 979, 999, 1009, 1030, 1032, 1033, 1050, 1068, 1070, 1083, 1084, 1087, 1088, 1090, 1097, 1106, 1142, 1147, 1182, 1203, 1214, 1229, 1231, 1247, 1266, 1270, 1299, 1338, 1343, 1368, 1373, 1374, 1375, 1376, 1379, 1383, 1393, 1418, 1436, 1444, 1447, 1455, 1458, 1461, 1479, 1507, 1508, 1509, 1537, 1541, 1544, 1571, 1572, 1600, 1604, 1632, 1636, 1640, 1642, 1645, 1667, 1679, 1680, 1686, 1695, 1702, 1709, 1710, 1711, 1718, 1727, 1728, 1749, 1761, 1790, 1791, 1800, 1824, 1827, 1840, 1846, 1850, 1859, 1863, 1871, 1872, 1887, 1895, 1905, 1938, 1945, 1956, 1969, 1980, 2016, 2027, 2045, 2056, 2057, 2060, 2063, 2065, 2074, 2079, 2097, 2100, 2156
- Canada. *See* Ontario Soybean Growers (Marketing Board)
- Canada soy pioneers. *See* Zavitz, Charles Ambrose (1863-1942)
- Canada–Soybean crushers, early. *See* Soybean Crushers (Canada), Early (Before 1941)
- Canada–Soybean Crushing–Soy Oil and Meal Production and Consumption–Statistics, Trends, and Analyses 806, 1507
- Canada–Soybean Production, Area and Stocks–Statistics, Trends, and Analyses 61, 361, 489, 598, 618, 1033, 1231, 1383, 1507, 1709
- Canada, soyfoods associations in. *See* Soyfoods Associations in Canada
- Canadian Provinces and Territories–Alberta 210, 291, 1376, 1458, 1461, 1541, 1709, 2074
- Canadian Provinces and Territories–British Columbia 210, 960, 979, 1461, 1686, 1709, 1749, 1790, 1872, 1956, 1980, 2074, 2079, 2097
- Canadian Provinces and Territories–Manitoba 210, 678, 840, 873, 1083, 1376, 1436, 1458, 1461, 1507, 1537, 1709, 2074
- Canadian Provinces and Territories–New Brunswick 1461, 2074
- Canadian Provinces and Territories–Newfoundland and Labrador 1461, 2074
- Canadian Provinces and Territories–Northwest Territories 1461, 2074
- Canadian Provinces and Territories–Nova Scotia 1343, 1461, 2074
- Canadian Provinces and Territories–Ontario 38, 43, 61, 64, 75, 98, 193, 195, 209, 210, 231, 282, 284, 290, 361, 457, 489, 570, 598, 607, 618, 647, 682, 683, 694, 711, 744, 752, 790, 793, 806, 820, 829, 837, 841, 860, 873, 903, 904, 954, 965, 1009, 1030, 1032, 1033, 1068, 1070, 1084, 1097, 1142, 1203, 1229, 1247, 1266, 1338, 1368, 1373, 1374, 1375, 1376, 1379, 1383, 1436, 1458, 1461, 1507, 1508, 1537, 1600, 1604, 1632, 1636, 1640, 1645, 1667, 1679, 1686, 1695, 1702, 1709, 1710, 1711, 1718, 1727, 1728, 1761, 1790, 1791, 1827, 1840, 1846, 1850, 1859, 1872, 1887, 1895, 1945, 2045, 2056, 2065, 2074, 2100
- Canadian Provinces and Territories–Prince Edward Island 1461, 2074
- Canadian Provinces and Territories–Québec (Quebec) 61, 64, 193, 210, 452, 826, 837, 873, 1088, 1182, 1368, 1376, 1418, 1455, 1458, 1461, 1507, 1709, 1871, 2074, 2156
- Canadian Provinces and Territories–Saskatchewan 1376, 1461, 1537, 1709, 1710, 2074
- Canadian Provinces and Territories–Yukon Territory 1461, 2074

- Canadian soybean varieties. *See* Soybean Varieties Canada
- CanAmera Foods (Plant at Hamilton, Ontario, Canada). Includes Maple Leaf Foods. Named Central Soya of Canada Ltd. (May 1991-March 1992). Named Canadian Vegetable Oil Products (CVOP; Div. of Canada Packers, Hamilton, Ontario) Before the mid-1980s. Named Canadian Vegetable Oil Processing (1942-1984) 489, 598, 806, 903, 954, 1032, 1033, 1068, 1229, 1375, 1376, 1379, 1458, 1461, 1636, 1695, 1711, 1895, 2074
- Cancer and diet. *See* Diet and Cancer. *See also*—Vegetarian Diets—Medical Aspects—Cancer
- Cancer, breast, prevention and diet. *See* Diet and Breast Cancer Prevention
- Cancer, prostate, prevention and diet. *See* Diet and Prostate Cancer Prevention
- Candles, Crayons, and Soybean Wax—Industrial Uses of Soy Oil as an Hydrogenated Oil 74, 1914, 1918, 1970, 1975, 1976, 2050
- Cannabis sativa. *See* Hemp
- Canola (*Brassica napus* (L.) var. *napus*)—An Improved Variety of the Rape Plant or Rapeseed Having Seeds with Little or No Erucic Acid 904, 1032, 1214, 1247, 1373, 1375, 1376, 1383, 1436, 1447, 1458, 1544, 1667, 1710, 1899, 1907, 1963
- Cantonese. *See* Asia, East—China—English—Language Documents that Contain Cantonese Romanization / Transliteration
- Carbohydrates—Dietary Fiber (Including Complex Carbohydrates, Bran, Water-Soluble and Water-Insoluble Fiber) 776, 777, 779, 815, 914, 1018, 1265, 1348, 1435, 1607
- Carbohydrates—Effects of Dietary Carbohydrates (Especially Fiber and Saponins) on Blood Lipids (Especially Cholesterol) 777, 779, 815, 1265
- Carbohydrates (General). *See also*: Starch, Dietary Fiber, and Oligosaccharides (Complex Sugars) 324, 671, 730, 825
- Cardiovascular Disease and Diet Therapy, Especially Heart Disease and Stroke, But Including Cholesterol Reduction, and Hypertension (High Blood Pressure). Soy Is Not Always Mentioned 1482, 1524, 1645, 1865, 1921, 1978
- Cargill. *See* Lucas Meyer GmbH (Hamburg, Germany)
- Cargill, Inc. (Minneapolis, Minneapolis) 134, 141, 172, 180, 209, 211, 218, 225, 242, 244, 245, 251, 254, 255, 310, 319, 338, 361, 402, 405, 457, 464, 470, 472, 475, 480, 520, 521, 540, 554, 559, 566, 581, 586, 601, 609, 611, 612, 620, 623, 629, 631, 638, 645, 651, 655, 656, 667, 671, 680, 681, 683, 691, 696, 701, 721, 769, 778, 783, 786, 789, 790, 806, 821, 824, 827, 830, 850, 855, 870, 871, 887, 890, 899, 903, 905, 923, 932, 934, 938, 971, 972, 976, 986, 1001, 1006, 1041, 1042, 1047, 1048, 1055, 1084, 1088, 1090, 1103, 1104, 1107, 1108, 1109, 1149, 1150, 1164, 1166, 1177, 1204, 1212, 1214, 1216, 1221, 1225, 1227, 1239, 1249, 1251, 1261, 1266, 1276, 1279, 1376, 1396, 1415, 1427, 1431, 1443, 1455, 1463, 1473, 1503, 1529, 1548, 1562, 1576, 1597, 1602, 1607, 1613, 1639, 1687, 1692, 1698, 1702, 1719, 1720, 1762, 1768, 1779, 1825, 1831, 1840, 1846, 1865, 1871, 1879, 1880, 1904, 1907, 1908, 1909, 1910, 1918, 1920, 1921, 1926, 1931, 1935, 1938, 1955, 1961, 1965, 1969, 1975, 1976, 1978, 1988, 1993, 1996, 1997, 1998, 1999, 2003, 2011, 2012, 2013, 2014, 2030, 2033, 2034, 2037, 2038, 2040, 2044, 2048, 2051, 2056, 2063, 2064, 2065, 2071, 2084, 2091, 2095, 2096, 2101, 2107, 2109, 2114, 2116, 2120, 2123, 2134, 2136, 2141, 2157
- Caribbean. *See* Latin America—Caribbean
- Caribbean, soyfoods movement in. *See* Soyfoods Movement the Caribbean
- Cartoons or Cartoon Characters 771
- Carver, George Washington (ca. 1864-1943, Tuskegee Inst., Alabama)—Work with Soybeans, Soyfoods, Peanuts, or Chemurgy, and the Carver Laboratory in Dearborn, Michigan 570, 1070, 1475, 1497, 2045
- Casein or Caseinates—Problems in So-Called Non-Dairy Products 1150, 1205
- Catering. *See* Foodservice and Institutional Feeding or Catering
- Catsup or Catchup. *See* Ketchup, Catsup, Catchup, Ketchop, Ketchap, Katchup, etc. Word Mentioned in Document
- Cattle, Bullocks, Bulls, Steers, or Cows for Beef / Meat or Unspecified Uses Fed Soybeans, Soybean Forage, or Soybean Cake or Meal as Feed 287, 826
- Cauldron Foods Ltd. (Bristol, England). Founded by Philip Marshall and Peter Fagan. Sold in Sept. 1987 to Rayner Burgess Ltd. 1993 Oct. Cauldron. part of the Hero Group of companies, builds a big new factory in Bristol 935, 936, 1004, 1006, 1042, 1049, 1160, 1183, 1208, 1219, 1271, 1296, 1302, 1317, 1322, 1335, 1354, 1356, 1370, 1391, 1545
- Celebrities—vegetarians. *See* Vegetarian Celebrities—Noted Personalities and Famous People
- Cenex. *See* CHS Cooperatives
- Central America. *See* Latin America—Central America
- Central America, soyfoods movement in. *See* Soyfoods Movement in Mexico and Central America
- Central Soya Co. (Fort Wayne, Indiana). Maker of Master Mix Feeds. Acquired in Oct. 1987 by the Ferruzzi Group in Ravenna, Italy. In 1991 became part of CSY Agri-Processing, Inc. [a holding company], operating as a member of the Eridania / Beghin-Say agro-industrial group, within Ferruzzi-Montedison. Acquired in Oct. 2002 by Bunge 15, 92, 129, 132, 134, 137, 138, 139, 142, 150, 153, 157, 159, 160, 163, 169, 170, 172, 175, 179, 195, 209, 211, 218, 220, 225, 235, 242, 245, 251, 254, 288, 300, 310, 319, 351,

361, 386, 397, 402, 457, 465, 466, 467, 470, 472, 476, 496, 497, 526, 532, 536, 537, 538, 540, 542, 558, 559, 580, 581, 585, 586, 595, 604, 609, 611, 617, 623, 629, 631, 646, 651, 655, 658, 667, 671, 680, 681, 683, 684, 696, 708, 709, 721, 750, 778, 783, 788, 789, 790, 806, 814, 821, 824, 825, 830, 852, 854, 855, 860, 870, 871, 887, 890, 896, 899, 903, 914, 923, 925, 932, 938, 980, 986, 991, 1055, 1068, 1069, 1070, 1071, 1072, 1075, 1078, 1079, 1080, 1082, 1083, 1084, 1085, 1088, 1090, 1091, 1103, 1104, 1107, 1109, 1141, 1149, 1150, 1166, 1175, 1177, 1204, 1214, 1216, 1221, 1232, 1249, 1260, 1261, 1266, 1276, 1278, 1279, 1337, 1338, 1347, 1349, 1373, 1374, 1375, 1376, 1379, 1380, 1383, 1384, 1427, 1431, 1435, 1443, 1458, 1463, 1466, 1467, 1468, 1471, 1472, 1473, 1482, 1503, 1506, 1529, 1537, 1544, 1546, 1548, 1554, 1558, 1597, 1602, 1611, 1613, 1614, 1639, 1645, 1668, 1698, 1699, 1702, 1719, 1720, 1739, 1747, 1754, 1764, 1791, 1799, 1818, 1828, 1840, 1853, 1856, 1859, 1861, 1862, 1865, 1869, 1871, 1886, 1888, 1894, 1895, 1904, 1908, 1909, 1910, 1913, 1921, 1926, 1927, 1930, 1996, 1997, 2001, 2067, 2096, 2116, 2118

Cereol. *See* Ferruzzi-Montedison (Italy)

Certification of soybean seeds. *See* Seed Certification (Soybeans)

Ceylon. *See* Asia, South–Sri Lanka

Checkoff programs (state and national). *See* American Soybean Association (ASA)–Checkoff Programs

Cheese. *See* Soy Cheese, Soy Cheese or Cheese Alternatives

Cheese, cream. *See* Soy Cream Cheese

Cheese–Non-Soy Dairy-Based Cheeses 896, 1621

Cheesecake or cream pie. *See* Soy Cheesecake or Cream Pie

Chemical / Nutritional Composition or Analysis of Seeds, Plants, Foods, Feeds, Nutritional Components 145, 175, 218, 324, 762, 855, 1460, 1536, 1560, 1563, 1736

Chemistry and Soils, Bureau. *See* United States Department of Agriculture (USDA)–Bureau of Agricultural and Industrial Chemistry

Chemurgy, the Farm Chemurgic Movement, and the Farm Chemurgic Council (USA, 1930s to 1950s, Including Wheeler McMillen, William J. Hale, and Francis P. Garvan) 62, 90, 118, 194, 279, 313, 342, 356, 375, 427, 440, 629, 1023, 1075, 1082, 1088, 1298, 1421, 1474, 1475, 1480, 1481

Chenopodium quinoa Willd. *See* Quinoa

Chicago Board of Trade (CBOT, organized in April 1848) 73, 74, 393, 470, 1244, 1261, 1455, 1668

Chicago Heights Oil Co. (Chicago Heights, Illinois; Started by I.C. Bradley and George Brett) 15, 42, 58, 1079, 1080

Chicken, meatless. *See* Meat Alternatives–Meatless Chicken, Goose, Duck, and Related Poultry Products. *See also* Meatless

Turkey

Chickens (esp. Layers & Broilers) Fed Soybeans, Soybean Forage, or Soybean Cake or Meal as Feed 79, 81, 97, 109, 112, 128, 148, 173, 202, 285, 287, 291, 302, 334, 356, 386, 690, 837

Chickpea / Chickpeas / Chick-Peas, Garbanzo / Garbanza Beans. *Cicer arietinum* L. Including Hummus / Hummous 1437, 1496, 1561

Chico-San Inc. (Chico, California). Maker and Importer of Macrobiotic and Natural Foods. Founded in March 1962 839, 1021

China. *See* Asia, East–China

Chinese Overseas, Especially Work with Soy (Including Chinese from Manchuria, Taiwan, Hong Kong, Singapore, etc.) 142, 324, 678, 848, 886, 944, 960, 1049, 1296, 1489, 1495, 2102, 2132

Chinese restaurants outside China, or Chinese recipes that use soy ingredients outside China. *See* Asia, East–China–Chinese Restaurants Outside China

Cholesterol. *See* Carbohydrates–Effects of Dietary Carbohydrates (Especially Fiber and Saponins) on Blood Lipids (Especially Cholesterol), Lipids–Effects on Blood Lipids, Protein–Effects on Blood Lipids

Christian Nagel Tofumanufaktur. *See* Tofumanufaktur Christian Nagel GmbH (Hamburg, Germany)

Chronology / Timeline 137, 139, 520, 521, 723, 826, 860, 873, 931, 960, 979, 1050, 1107, 1108, 1109, 1150, 1668, 1725, 1787, 1856, 1957, 2044, 2056, 2068, 2074, 2121, 2156, 2157

CHS Cooperatives, Including Cenex, Inc. and Harvest States Cooperatives (Which Includes Honeymead) 1101, 1103, 1305, 1364, 1384, 1432, 1503, 1551, 1590, 1685, 1871, 1907, 1957

*Cicer arietinum*. *See* Chickpeas or Garbanzo Beans

Civil War in USA (1861-1865) 559

Claim or Claims of Health Benefits–Usually Authorized by the U.S. Food and Drug Administration (FDA) 1567, 1698, 1787, 1793, 1799, 1853, 1860, 1863, 1869, 1870, 1888, 1892, 1973, 1974

Cleaning soybean seeds. *See* Seed Cleaning–Especially for Food or Seed Uses

Cliffrose. *See* Natural Food Distributors and Master Distributors–General and Other Smaller: Cliffrose, Shadowfax, etc.

Climate change. *See* Global Warming / Climate Change as Environmental Issues

Coconut Milk and Cream. Or Coconuts Used to Flavor Soymilk, Rice Milk, etc.. 1098

Coffee Creamer, Whitener or Lightener (Non-Dairy–Usually

Contains Soy) 526, 603, 952, 1054, 1070, 1102, 1362, 1423, 1914, 1937, 2097

Coffee, soy. *See* Soy Coffee

Coffee Substitutes or Adulterants, Non-Soy—Usually Made from Roasted Cereals, Chicory, and / or Other Legumes 782, 863, 1292

Cognitive / Brain Function. Including Alzheimer's Disease 1254, 1767, 1775, 1787, 1832, 1860, 1868

Color of soybean seeds. *See* Soybean Seeds (of different colors)

Combines. Also called the Combined Harvester-Thresher in the 1920s and 1930s (Combine) 281, 558, 925, 1033, 1834, 2099

Commercial soy products—earliest. *See* Historical—Earliest Commercial Product

Commercial Soy Products—New Products, Mostly Foods 17, 22, 23, 24, 33, 34, 35, 43, 45, 54, 57, 69, 78, 98, 107, 108, 113, 127, 144, 161, 162, 167, 174, 176, 177, 216, 222, 223, 224, 226, 227, 228, 259, 262, 263, 276, 323, 339, 357, 358, 368, 369, 387, 388, 391, 401, 417, 443, 445, 462, 495, 502, 503, 506, 518, 519, 530, 572, 573, 602, 625, 628, 657, 659, 660, 661, 670, 685, 686, 695, 725, 726, 727, 728, 746, 747, 751, 754, 761, 763, 764, 765, 774, 780, 785, 796, 797, 798, 799, 800, 807, 811, 831, 832, 833, 834, 835, 836, 851, 861, 862, 863, 864, 865, 866, 867, 868, 877, 891, 910, 912, 913, 914, 915, 916, 917, 918, 919, 920, 933, 935, 936, 940, 947, 949, 950, 962, 963, 964, 965, 966, 967, 977, 978, 1011, 1012, 1013, 1014, 1015, 1024, 1035, 1036, 1038, 1039, 1040, 1044, 1045, 1051, 1052, 1053, 1061, 1062, 1063, 1064, 1065, 1066, 1076, 1077, 1086, 1092, 1093, 1096, 1098, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1125, 1127, 1133, 1135, 1137, 1138, 1139, 1148, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1163, 1165, 1168, 1189, 1190, 1191, 1192, 1193, 1195, 1196, 1197, 1198, 1199, 1200, 1206, 1223, 1224, 1234, 1235, 1236, 1237, 1242, 1248, 1253, 1255, 1256, 1259, 1267, 1280, 1282, 1286, 1287, 1289, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1327, 1340, 1345, 1355, 1357, 1358, 1359, 1360, 1361, 1362, 1371, 1372, 1390, 1397, 1398, 1399, 1405, 1413, 1423, 1424, 1425, 1426, 1442, 1445, 1448, 1449, 1450, 1451, 1452, 1453, 1459, 1478, 1491, 1492, 1523, 1530, 1531, 1532, 1550, 1555, 1556, 1582, 1589, 1608, 1609, 1610, 1626, 1627, 1628, 1629, 1647, 1651, 1652, 1653, 1654, 1655, 1656, 1722, 1724, 1729, 1730, 1769, 1783, 1798, 1821, 1839, 1890, 1892, 1973, 1974

Commercial soymilk. *See* Soymilk Production—How to Make Soymilk on a Commercial Scale

Commercial tofu. *See* Tofu Production—How to Make Tofu on a Commercial Scale

Component / value-based pricing of soybeans. *See* Seed Quality

Composition of soybeans, soyfoods, or feeds. *See* Chemical / Nutritional Composition or Analysis

Computerized Databases and Information Services, Information or Publications About Those Concerning Soya 1538

Concentrated soymilk. *See* Soymilk, Concentrated or Condensed (Canned, Bottled, or Bulk)

Concerns about the Safety, Toxicity, or Health Benefits of Soy in Human Diets 1707, 1748, 1752, 1753, 1755, 1756, 1758, 1815, 1984, 2014, 2022, 2058, 2075

Condensed soymilk. *See* Soymilk, Concentrated or Condensed (Canned, Bottled, or Bulk)

Conservation of soils. *See* Soil Science—Soil Conservation or Soil Erosion

Continental Grain Co. *See* ContiGroup Companies, Inc.

Continental Grain Co. Named ContiGroup Companies from 1999 until 2008 (New York, New York) 254, 475, 480, 540, 683, 789, 790, 824, 827, 899, 903, 998, 1029, 1055, 1103, 1104, 1191, 1212, 1214, 1249, 1266, 1279, 1455, 1696, 1702, 1913, 1993, 2020

Cookbooks, macrobiotic. *See* Macrobiotic Cookbooks

Cookbooks, vegan. *See* Vegetarian Cookbooks—Vegan Cookbooks

Cookbooks, vegetarian. *See* Vegetarian Cookbooks

Cookery, Cookbooks, Cooking Videos, and Recipes—Mostly Using Soy, Mostly Vegetarian. *See* also: the Subcategories—Vegetarian Cookbooks, Vegan Cookbooks 79, 128, 160, 324, 418, 437, 474, 488, 543, 552, 581, 604, 626, 627, 658, 661, 664, 665, 668, 669, 672, 688, 714, 724, 732, 738, 773, 784, 794, 802, 803, 805, 809, 812, 814, 817, 818, 838, 839, 840, 869, 872, 895, 897, 921, 922, 924, 935, 943, 948, 973, 1000, 1017, 1018, 1056, 1058, 1059, 1060, 1089, 1118, 1120, 1121, 1129, 1146, 1161, 1162, 1201, 1250, 1281, 1283, 1284, 1290, 1291, 1343, 1346, 1365, 1395, 1400, 1403, 1408, 1454, 1457, 1483, 1490, 1497, 1542, 1552, 1553, 1588, 1596, 1612, 1618, 1635, 1637, 1643, 1644, 1650, 1665, 1677, 1678, 1681, 1684, 1686, 1693, 1731, 1732, 1734, 1735, 1737, 1738, 1742, 1745, 1770, 1788, 1789, 1790, 1800, 1823, 1836, 1841, 1858, 1888, 1914, 1937, 1941, 1942, 1943, 1971, 1992, 2023, 2025, 2050, 2061, 2062, 2082, 2083, 2087, 2088, 2097, 2098, 2104, 2105, 2113, 2125, 2130

Cooperative Enterprises, Ventures, Research, or Experiments, and Cooperatives / Co-ops, Worldwide. *See* also: Soybean Crushers (USA)—Cooperative Crushers 38, 43, 61, 64, 281, 496, 548, 576, 581, 585, 586, 604, 608, 609, 618, 631, 651, 654, 680, 696, 715, 724, 783, 820, 848, 932, 1008, 1014, 1042, 1075, 1136, 1143, 1147, 1181, 1208, 1221, 1303, 1317, 1332, 1334, 1343, 1356, 1418, 1473, 1479, 1480, 1486, 1489, 1495, 1589, 1698, 1728, 1825, 1846, 1995

Cooperative soybean crushers. *See* Soybean Crushers (USA), Cooperative

Cooperatives. *See* United States Department of Agriculture (USDA)—Agricultural Cooperative Service

Corn / Maize (*Zea mays* L. subsp. *mays*)—Including Corn Oil, Corn Germ Oil, Meal, Starch, and Corn Gluten 15, 37, 73, 82, 182, 225, 251, 272, 281, 299, 399, 440, 457, 466, 467, 478, 570, 650, 671, 705, 706, 730, 766, 767, 769, 771, 776, 777, 821, 824, 835, 836,

844, 847, 848, 907, 937, 944, 959, 971, 1002, 1005, 1020, 1043, 1070, 1075, 1119, 1121, 1131, 1144, 1210, 1214, 1215, 1225, 1227, 1231, 1239, 1251, 1292, 1407, 1415, 1417, 1418, 1436, 1442, 1455, 1459, 1480, 1481, 1503, 1526, 1535, 1539, 1540, 1554, 1562, 1581, 1585, 1586, 1597, 1603, 1616, 1621, 1631, 1643, 1667, 1672, 1673, 1681, 1696, 1697, 1713, 1719, 1773, 1777, 1778, 1817, 1820, 1828, 1833, 1849, 1850, 1877, 1879, 1907, 1920, 1923, 1935, 1950, 1957, 1990, 2007, 2029, 2032, 2039, 2045, 2046, 2054, 2060, 2073, 2081, 2092, 2099, 2106, 2115, 2119, 2157

Cornell University (Ithaca, New York), and New York State Agric. Experiment Station (Geneva, NY)—Soyfoods Research & Development 324, 400, 580, 715

Cottage cheese, non-dairy. *See* Dairylike Non-dairy Soy-based Products, Other

Cotton Cloth, Fabric, Textile, Yarn, Fibers or Raw Cotton in Bales, All from the Boll of the Cotton Plant (*Gossypium sp. L.*) 65, 857, 1472

Cotton Plant and Crop (*Gossypium sp. L.*). *See* also Cottonseed Oil, Cake, and Meal 821

Cottonseed Flour. Previously Spelled Cotton-Seed Flour 579

Cottonseed Meal and Cake (Defatted). Previously Spelled Cotton-Seed Cake 225, 298, 299, 750, 1033

Cottonseed Oil. Previously Spelled Cotton-Seed Oil or Cotton Oil 15, 58, 82, 129, 137, 139, 159, 182, 218, 220, 233, 242, 251, 299, 305, 313, 361, 565, 709, 750, 1907

Cottonseeds / Cottonseed. Previously Spelled Cotton Seeds / Seed 242, 955, 1621

Cowpea or Black-Eyed Pea. *Vigna unguiculata* (L.) Walp. Formerly spelled Cow Pea. Also called Blackeye Pea, Cowpeas, Pea Bean, Yardlong Cowpea. Chinese: Jiangdou. Previous scientific names: *Vigna sinensis* (L.) (1890s-1970s), *Vigna catjang* (1898-1920), *Vigna Katiang* (1889) 1033, 1211

Cows / Cattle for Dairy Milk and Butter Fed Soybeans, Soybean Forage, or Soybean Cake or Meal as Feed 95, 136, 173, 188

Crayons. *See* Candles, Crayons, and Soybean Wax

Cream, sour, alternative. *See* Sour Cream Alternatives

Cream, soymilk. *See* Soymilk Cream

Creamer or soy cream for coffee. *See* Coffee Creamer / Whitener

Crop Rotation Using Soybean Plants for Soil Improvement 82, 201, 844, 1602, 2018

Crown Iron Works Co. (Minneapolis, Minnesota). Maker of Soybean Processing Equipment. Acquired by CPM (Formerly California Pellet Mill, Waterloo, Iowa) on 16 Aug. 2007 242, 361, 1846, 1997, 2056, 2115, 2119

Crushing, soybean—equipment manufacturers. *See* Allis-Chalmers, Anderson International Corp., Blaw-Knox Co. and Rotocel, Crown Iron Works Co., French Oil Mill Machinery Co.

Crushing statistics for soybeans, and soy oil and meal production and consumption. *See* individual geographic regions (such as Asia, Europe, Latin America, United States, World, etc.) and nations within each region

CSY Agri-Processing, Inc. *See* Central Soya Co. (Fort Wayne, Indiana)

Cultural Practices, Cultivation & Agronomy (Including Crop Management, Erosion, Planting, Seedbed Preparation, Water Management / Irrigation) 39, 79, 137, 324, 1033

Cultures of nitrogen fixing bacteria for soybeans. *See* Nitrogen Fixing Cultures

Curds Made from Soymilk (Soft, Unpressed Tofu) as an End Product or Food Ingredient. In Japanese: Oboro. In Chinese: Daufu-fa, Doufu-hua, Doufu-hwa, Douhua, Tofu-hwa, Tow-foo-fah (“Bean Curd Flowers”) or Doufu-nao, Fu-nao (“Bean Curd Brains”). In Filipino: Taho (Often Served as a Dessert with a Sugary Syrup) 995, 1456, 1546

Dairy alternatives (soy based). *See* Coffee Creamer / Whitener or Cream Alternative, Sour Cream Alternatives, Soy Cheese—Fermented, Soy Cheese—Non-Fermented, Soy Cheese or Cheese Alternatives, Soy Cheesecake or Cream Pie, Soy Cream Cheese, Soy Pudding, Custard, Parfait, or Mousse, Soy Yogurt, Soymilk, Soymilk, Fermented, Soymilk, Fermented—Soy Kefir, Tofu (Soy Cheese), Whip Topping

Dairylike Non-dairy Soy-based Products, Other (Cottage Cheese, and Icing). *See* also Non-dairy Whip Topping, Soy Ice Cream, Soy Yogurt, Soy Cheese, Cream Cheese or Cheesecakes, Coffee Creamer / Whitener or Cream, and Sour Cream 1070, 1102, 1477, 1513, 1514, 1644

Daitokuji / Daitoku-ji natto. *See* Daitokuji Fermented Black Soybeans—from Japan

Daitokuji Fermented Black Soybeans—from Japan. In Japan called Daitokuji Natto or Daitoku-ji Natto 945

Dannen Mills (St. Joseph, Missouri). Sold (Oct. 1963) to Farmers Union Cooperative Marketing Assoc. (CMA) in Kansas City 132, 159, 172, 242, 254, 579, 654, 827, 905

Dansk Sojakagefabrik (Islands Brygge, Copenhagen, Denmark). Owned by the East Asiatic Company 778, 1439, 1873

Dawson Mills (Dawson, Minnesota) (Tri-County Soy Bean Cooperative Association until 1969) and Dawson Food Ingredients (from 1974)—Cooperative 286, 319, 457, 579, 683, 790, 855, 871, 896, 903, 905, 932, 991, 992, 1002, 1027, 1084, 1476, 1529, 1856, 1871, 2005

- Daylength Neutrality. *See* Soybean–Physiology–Photoperiod Insensitivity
- Death certificates. *See* Obituaries, Eulogies, Death Certificates, and Wills
- Deceptive or misleading labeling or products. *See* Unfair Practices–Including Possible Deceptive / Misleading Labeling, Advertising, etc. *See also*: Adulteration
- Deforestation in Brazil. *See* Latin America–South America–Brazil, Deforestation in
- Delphos Grain & Soya Products Co. (Delphos, Ohio) 172, 209, 254, 319, 457, 683, 790, 903, 1084, 1266, 1702, 1840
- Delsoy Products, Inc. (Dearborn, Michigan). Soy Protein Company. Renamed Whitehouse Products in 1963. Purchased by C.J. Christoff & Sons in 1983 (Lowell, Michigan). Renamed Chadalee Farms, Inc.. 1070, 1072, 1078, 2153
- Demos, Steve. *See* White Wave, Inc. (Boulder, Colorado)
- Detection of soy proteins. *See* Soy Proteins–Detection
- Detergents or soaps made from soy oil. *See* Soaps or Detergents
- DE-VAU-GE Gesundheitswerk GmbH (Lueneburg, Germany) 481, 736, 763, 877, 878, 880, 919, 1022, 1024, 1026, 1042, 1076, 1094, 1107, 1179, 1236, 1294, 1301, 1302, 1303, 1304, 1317, 1320, 1325, 1339, 1342, 1354, 1356, 1381, 1391, 1410, 1411, 1433, 1486, 1498, 1499, 1519, 1626, 1787, 1859
- Developing nations. *See* Third World
- Development, sustainable. *See* World Problems–Sustainable Development and Growth
- Diabetes and Diabetic Diets 74, 79, 83, 117, 142, 328, 578, 776, 779, 1265, 1435, 1539, 1618, 1732, 1741, 1742, 1753, 1775, 1776, 1888, 1915, 2087, 2090, 2135
- Diamond, Holton W. “Rex” 1070, 1072
- Dies, Edward Jerome (1891-1979) 62, 90, 115, 132, 137, 139, 153, 172, 191, 195, 267, 558, 691, 826, 827
- Diesel Fuel, SoyDiesel, Biodiesel–Interchem Industries, Inc., Interchem Environmental, Inc., Midwest Biofuels, Ag Environmental Processing (AEP), Bill Ayres and Doug Pickering. Pioneer Biodiesel Makers and Marketers in the USA 1443, 2007
- Diesel Fuel, SoyDiesel, Biodiesel–Kenlon Johannes, Pioneer in the USA 1416, 1443
- Diesel Fuel, SoyDiesel, Biodiesel, or Artificial Petroleum (Made from Methyl Esters of Soybean Oil) 62, 857, 1055, 1416, 1443, 1539, 1633, 1779, 1842, 1906, 1923, 2007, 2021, 2024, 2032, 2035, 2039, 2044, 2046, 2050, 2051, 2052, 2055, 2095, 2109, 2122
- Diesel, soy. *See* National Biodiesel Board
- Diet and Breast Cancer Prevention (Soy Is Usually Mentioned) 1389, 1524, 1567, 1617, 1642, 1734, 1739, 1741, 1759, 1760, 1767, 1958, 1982
- Diet and Cancer (Vegetarian Diet Is Not Mentioned; Soy May Not Be Mentioned) 1265, 1482, 1617, 1645, 1865, 1978
- Diet and Prostate Cancer Prevention (Soy May Not Be Mentioned) 1567, 1617, 1734, 1739, 1741, 1775, 1832, 1866
- Directories–Soybean Processors (Including Soyfoods Manufacturers), Researchers, Conference Attendees, and Other Names and Addresses Related to Soyfoods, Vegetarianism, Macrobiotics, etc. *See also* Directories–Japanese American in USA 27, 58, 75, 79, 142, 160, 195, 282, 361, 402, 452, 629, 696, 839, 871, 942, 945, 1006, 1041, 1042, 1090, 1229, 1251, 1299, 1338, 1408, 1509, 1643, 1709, 1712, 1778, 1847, 1875, 1901, 1962, 2017, 2039, 2054, 2060, 2073, 2081, 2092, 2099, 2106, 2115, 2119
- Diseases of Soybeans (Bacterial, Fungal, and Viral / Virus). *See also*: Nematode Disease Control 959, 1030, 1033
- Diseases, pests, and other types of injury, plant protection from. *See* Plant Protection from Diseases, Pests and Other Types of Injury (General)
- Diseases, plant protection from. *See* Soybean Rust
- District of Columbia. *See* United States–States–District of Columbia
- Diversity, Genetic. *See* Soybean–Genetic Diversity, Variability and Population Structure
- Documents with More Than 20 Keywords 15, 27, 42, 58, 61, 62, 64, 65, 74, 75, 79, 82, 83, 90, 115, 123, 129, 132, 137, 139, 142, 143, 153, 159, 160, 172, 175, 179, 195, 198, 209, 211, 218, 220, 225, 242, 245, 254, 288, 289, 298, 299, 300, 305, 310, 313, 319, 324, 361, 376, 399, 406, 440, 446, 447, 452, 457, 465, 466, 467, 470, 472, 481, 489, 496, 520, 526, 533, 540, 558, 559, 570, 571, 576, 577, 578, 579, 598, 603, 609, 618, 629, 631, 651, 653, 655, 658, 672, 680, 683, 688, 690, 691, 696, 706, 715, 723, 736, 750, 767, 769, 771, 778, 790, 791, 803, 806, 816, 826, 827, 830, 839, 848, 849, 855, 857, 860, 880, 890, 898, 899, 902, 903, 904, 905, 911, 924, 925, 932, 934, 945, 960, 971, 973, 987, 991, 1004, 1006, 1007, 1023, 1028, 1031, 1033, 1041, 1042, 1049, 1050, 1055, 1056, 1070, 1071, 1072, 1075, 1078, 1081, 1084, 1085, 1088, 1090, 1091, 1103, 1104, 1106, 1107, 1108, 1109, 1146, 1147, 1150, 1160, 1162, 1164, 1179, 1180, 1183, 1205, 1214, 1227, 1231, 1240, 1263, 1266, 1269, 1278, 1292, 1294, 1301, 1302, 1303, 1304, 1317, 1320, 1322, 1325, 1331, 1332, 1333, 1339, 1342, 1344, 1346, 1348, 1349, 1350, 1353, 1354, 1356, 1365, 1370, 1381, 1387, 1388, 1391, 1393, 1414, 1418, 1421, 1427, 1431, 1435, 1436, 1441, 1455, 1456, 1461, 1464, 1471, 1476, 1479, 1480, 1496, 1497, 1503, 1507, 1509, 1514, 1529, 1536, 1539, 1544, 1546, 1566, 1570, 1571, 1593, 1620, 1642, 1645, 1667, 1668, 1689, 1698, 1702, 1709, 1715, 1725, 1734, 1741, 1742, 1747, 1764, 1772, 1778, 1781, 1787, 1799, 1800, 1825, 1840, 1846, 1847, 1856, 1859, 1871, 1888, 1904, 1907, 1914, 1915, 1919, 1921,

- 1937, 1962, 1969, 1988, 1992, 1996, 1997, 2017, 2018, 2027, 2039, 2044, 2045, 2054, 2056, 2060, 2062, 2065, 2073, 2074, 2081, 2083, 2092, 2099, 2106, 2115, 2119, 2153, 2156, 2157
- Dogs, Cats, and Other Pets / Companion Animals Fed Soybeans, Soybean Forage, or Soybean Cake or Meal as Feed / Pet Food / Petfood 143, 173, 541, 609, 691
- Dorsett, Palemon Howard (1862-1943, USDA) 79
- Dorsett-Morse Expedition to East Asia (Feb. 1929 to Feb. 1931) 79
- Douchi or doushi or dow see or dowsi. *See* Fermented Black Soybeans
- Drackett Co. (The) (Cincinnati and Sharonville [or Evendale], Ohio) 121, 132, 137, 139, 159, 172, 175, 195, 198, 242, 245, 254, 310, 319, 329, 336, 357, 373, 416, 509, 553, 653, 857, 898, 1001, 1003, 1023, 1075, 1421, 1470, 1471, 1472, 1474, 1475, 1856, 2140, 2153, 2154
- Dried yuba sticks. *See* Yuba–Dried Yuba Sticks
- Dried-frozen tofu. *See* Tofu, Frozen, Dried-frozen, or Dried Whole
- Drying of soybeans. *See* Storage of Seeds
- DTD–Danish Turnkey Dairies. *See* APV Systems, Soya Technology Division
- DuPont (E.I. Du Pont de Nemours & Co., Inc.) and DuPont Agricultural Enterprise / Products (Wilmington, Delaware). Formerly spelled Du Pont 65, 129, 288, 769, 1075, 1621, 1701, 1703, 1725, 1747, 1754, 1826, 1848, 1852, 1859, 1870, 1904, 1908, 1965, 1966
- Dust Suppressants and Dust Control–Industrial Uses of Soy Oil as a Non-Drying Oil 1348
- Earliest commercial soy products. *See* Historical–Earliest Commercial Product
- Earliest document seen... *See* Historical–Earliest Document Seen
- Eastern Foods, Inc. *See* Mainland Express (Spring Park, Minnesota)
- Ecology (“The Mother of All the Sciences”) and Ecosystems 715, 1016, 1260, 1409, 1479, 1570, 2040
- Economic Research Service of USDA. *See* United States Department of Agriculture (USDA)–Economic Research Service (ERS)
- Economics of soybean production and hedging. *See* Marketing Soybeans
- Edamamé. *See* Green Vegetable Soybeans, Green Vegetable Soybeans–Edamamé
- Edelsoja Whole (Full-Fat) Soy flour. Developed by Laszlo Berczeller in Austria and Launched in May 1928 629, 1042
- Eden Foods, Inc. (Clinton, Michigan; Founded 4 Nov. 1969) and American Soy Products (Saline, Michigan; Founded Aug. 1986) 715, 1021, 1050, 1150, 1179, 1509, 1547, 1570, 1571, 1689, 1709, 1799, 2027, 2113
- Edible or food-grade soybeans. *See* Green Vegetable Soybeans–Vegetable-Type, Garden-Type, or Edible Soybeans
- Edible Soy Products, makers of Pro-Nuts (Hudson, Iowa). *See* Solnuts B.V.
- Edmondson, J.B. “Ben” (1846-1929). Soybean Pioneer in Indiana, and in Hendricks County, Indiana 558
- Effect of Soy on Development–Early Onset of Puberty, Menarche, 1753
- Efficiency of animals in converting feeds into human foods. *See* Feeds–Efficiency
- Egypt. *See* Africa–Egypt
- Eichberg, Joseph. *See* American Lecithin Corp.
- El Molino Mills (Los Angeles Area. Founded by Edward Allen Vandercook. Began Operations on 1 March 1926 in Alhambra, California) 75, 142, 538
- Elizabeth City Oil and Fertilizer Co. (Elizabeth City, North Carolina; 1915) 15, 58, 137, 139, 559
- Embargoes, tariffs, duties. *See* Trade Policies (International) Concerning Soybeans, Soy Products, or Soyfoods–Tariffs, Duties, Embargoes, Moratoriums
- Energy bars. *See* Bars–Energy Bars or Nutrition Bars Made with Soy
- Energy, renewable, from soybeans. *See* Diesel Fuel, SoyDiesel, Biodiesel, or Artificial Petroleum
- England. *See* Europe, Western–United Kingdom
- Environmental issues, concerns, and protection. *See* Vegetarianism, the Environment, and Ecology, Water Use, Misuse, and Scarcity
- Environmental Issues, Concerns, and Protection (General, Including Deep Ecology, Pollution of the Environment, Renewable Energy, etc.). *See* also Global Warming / Climate Change, and Water Use 1571, 2139
- Enzyme active soy flour. *See* Soy Flour, Grits, and Flakes–Enzyme Active
- Enzymes–Commercial Enzyme Preparations Used in Making Soyfoods by Hydrolyzing or Modifying Soy Protein, Carbohydrates, or Lipids (Including Phosphatides) 603, 801, 1028, 1078, 1091, 1187, 1427

Enzymes in Soybean Seeds–Lipoxygenase (Formerly Called Lipoxidase) and Its Inactivation 24, 42, 390, 603, 630, 633, 762, 816, 855, 916, 1075, 1145, 1288, 1318, 1387, 1607

Enzymes in Soybean Seeds–Other 149, 175, 496

Enzymes in Soybean Seeds–Urease and Its Inactivation 213, 339, 443

Enzymes Produced During Fermentations Involving Koji or *Aspergillus Oryzae* (Including Enzymes in Miso and Fermented Soy Sauce) 1407

Enzymes Produced During Fermentations Involving Tempeh, Natto, Fermented Tofu, or Fermented Black Soybeans 1407

Equipment for making soymilk. *See* Soymilk Equipment

Equipment for making tofu. *See* Tofu Equipment

Equipment for soybean crushing–manufacturers. *See* Anderson International Corp., Blaw-Knox Co. and Rotocel, Crown Iron Works Co., French Oil Mill Machinery Co.

Equipment for Soybean Processing (Not Including Farm Machinery) 1181

Equol–A Metabolite of Daidzein Derived by the Action of Intestinal Bacteria on Soy Isoflavones 1755

Ewhon (Boston, Massachusetts). Founded April 1966 by Aveline and Michio Kushi in Boston. Merged with U.S. Mills in 1986 715, 839, 1050, 1388, 1417

Erosion of soils. *See* Soil Science–Soil Conservation or Soil Erosion

Essene Traditional Foods (Philadelphia, Pennsylvania) 1689

Estrogens in plants. *See* Phytoestrogens

Ethanol (ethyl alcohol). *See* Solvents

Etymology. *See* the specific product concerned (e.g. soybeans, tofu, soybean meal, etc.)

Etymology of the Word “Soy” and its Cognates / Relatives in English 1482, 1642, 1645

Etymology of the Word “Soyfoods” and its Cognates / Relatives in Various Languages 138, 206, 1090

Etymology of the Words “Soya,” “Soy,” and “Soybean” and their Cognates / Relatives in Various Languages 559, 826, 945, 1203, 1990

Euronature (Paris, France). *See* Lima N.V. / Lima Foods (Sint-Martens-Latem, Belgium; and Mezin, France)

Europe, Eastern–Belarus (Formerly Byelorussian SSR, a Soviet Republic from 1922 to Dec. 1991). Named Belorussia, Byelorussia, or White Russia before 1991 1225, 2157

Europe, Eastern–Bulgaria 115, 139, 721, 1544

Europe, Eastern–Croatia (Hrvatska; Declared Independence from Yugoslavia on 21 June 1991; Includes Istria or Istrian Peninsula and Rijeka (formerly Fiume)) 1034

Europe, Eastern–Czech Republic (Ceská Republika; Including Bohemia or Cechy, and Moravia or Morava. From 1918 until 1 Jan. 1993, Western Part of Czechoslovakia, which also included Slovakia or Slovensko) 2122

Europe, Eastern–Czechoslovakia (From 1918 until 1 Jan. 1993; then divided into The Czech Republic [formerly Bohemia and Moravia], and Slovakia [officially “The Slovak Republic”]) 139, 721, 1393, 1544

Europe, Eastern (General) 655, 1301, 1349, 1828, 1904, 1940, 2030, 2116

Europe, Eastern–Hungary (Magyar Köztársaság) 220, 655, 721, 999, 1004, 1006, 1238, 1281, 1300, 1489, 1495, 1544, 1930

Europe, Eastern–Poland 139, 655, 701, 716, 721, 932, 999, 1349, 1489, 1495, 1861, 1862, 1930, 2122

Europe, Eastern–Romania (Including Moldavia and Bessarabia until 1940-44). Also spelled Rumania 721, 1930

Europe, Eastern–Russian Federation (Russia); Formerly Russian SFSR, a Soviet Republic from 30 Dec. 1922 to Dec. 1991 716, 925, 1227, 1244, 1327, 1328, 1344, 1386, 1406, 1430, 1434, 1447, 1488, 1554, 1881, 1890, 2028

Europe, Eastern–Slovakia (Slovak Republic, or Slovensko; Eastern Part of Czechoslovakia from 1918 until 1 Jan. 1993) 1657

Europe, Eastern–Soybean Production, Area and Stocks–Statistics, Trends, and Analyses 1178

Europe, Eastern–Ukraine (Ukrayina; Formerly Ukrainian SSR, a Soviet Republic from 1917 to Dec. 1991) 1186, 1349, 1488, 1500, 1503, 1527, 1554, 1566, 1930, 2127

Europe, Eastern–USSR (Union of Soviet Socialist Republics or Soviet Union; called Russia before 30 Dec. 1922. Ceased to exist on 26 Dec. 1991) 115, 139, 452, 655, 716, 721, 723, 860, 925, 932, 989, 999, 1055, 1164, 1178, 1214, 1231, 1244, 1277, 1323, 1327, 1328, 1329, 1330, 1344, 1349, 1386, 1393, 1396, 1406, 1430, 1434, 1455, 1500, 1507, 1772, 1806, 1935, 2018, 2049, 2122

Europe, Eastern–Yugoslavia. Existed from 1918 to Jan. 1992. Composed of Serbia / Servia, Croatia, Bosnia and Herzegovina, Slovenia, Macedonia, and Montenegro. Included Carnaro, Fiume / Rijeka / Rieka 1947-1992; Formerly Also Spelled Jugoslavia. *See* also Serbia and Montenegro 115, 139, 326, 341, 612, 721, 999, 1034, 1115, 1116, 1337

- Europe–European Union (EU) or European Economic Community (EEC; also known as the Common Market), renamed the European Community (Headquarters: Brussels, Belgium) 341, 406, 645, 778, 830, 954, 1007, 1055, 1147, 1150, 1171, 1231, 1245, 1247, 1301, 1323, 1393, 1431, 1503, 1507, 1520, 1539, 1569, 1593, 1602, 1614, 1621, 1696, 1709, 1787, 2011, 2038, 2048
- Europe, soyfoods associations in. *See Soyfoods Associations in Europe*
- Europe, soyfoods movement in. *See Soyfoods Movement in Europe*
- Europe, Western 255, 402, 470, 629, 655, 671, 730, 743, 896, 987, 1042, 1081, 1214, 1543, 1694, 1710, 1767, 1791, 1826, 1827, 1860, 2040, 2116
- Europe, Western–Austria (Österreich) was independent before 8 June 1876 when the dual monarchy was formed. As the Austro-Hungarian Empire began to break up, the Republic of Austria declared independence on 12 Nov. 1918 27, 42, 139, 290, 325, 326, 542, 697, 789, 826, 999, 1006, 1049, 1120, 1294, 1320, 1325, 1408, 1633, 1645, 1692
- Europe, Western–Belgium, Kingdom of 220, 406, 629, 720, 778, 830, 850, 877, 909, 919, 934, 1004, 1006, 1007, 1022, 1024, 1026, 1031, 1042, 1049, 1050, 1108, 1128, 1147, 1150, 1160, 1254, 1263, 1278, 1297, 1301, 1302, 1303, 1304, 1317, 1322, 1325, 1333, 1339, 1354, 1370, 1388, 1486, 1498, 1499, 1509, 1566, 1602, 1633, 1645, 1700, 1764, 1828, 1859, 1870, 1901, 1940, 1956, 1999, 2044, 2153, 2156
- Europe, Western–Denmark (Danmark; Including the Province of Greenland [Kalaallit Nunaat]) 42, 65, 289, 406, 481, 529, 629, 659, 660, 778, 830, 833, 834, 878, 880, 923, 987, 1006, 1042, 1049, 1099, 1294, 1301, 1320, 1325, 1337, 1342, 1381, 1435, 1439, 1453, 1463, 1513, 1696, 1699, 1764, 1859, 1862, 1996, 1997
- Europe, Western–Finland (Suomen Tasavalta) 283, 659, 833, 834, 860, 1294, 1319, 1320, 1325, 1381, 1393, 1513, 1514, 1645, 1696, 1868, 1997, 2001, 2075
- Europe, Western–France (République Française) 99, 220, 283, 290, 300, 406, 439, 481, 496, 561, 630, 644, 655, 728, 778, 821, 822, 830, 850, 875, 920, 923, 934, 945, 966, 967, 987, 1004, 1006, 1007, 1015, 1031, 1042, 1049, 1050, 1055, 1094, 1124, 1147, 1150, 1159, 1179, 1183, 1188, 1199, 1278, 1294, 1301, 1302, 1303, 1317, 1320, 1322, 1325, 1331, 1333, 1339, 1350, 1354, 1356, 1370, 1431, 1435, 1441, 1463, 1499, 1509, 1515, 1521, 1539, 1579, 1602, 1633, 1645, 1646, 1696, 1699, 1764, 1778, 1859, 1886, 1940, 1956, 1996, 1997, 1999, 2156
- Europe, Western–Germany (Deutschland; Including East and West Germany, Oct. 1949–July 1990) 15, 42, 44, 47, 50, 58, 65, 68, 86, 129, 138, 163, 175, 179, 198, 207, 218, 220, 225, 247, 252, 253, 255, 268, 269, 272, 283, 288, 289, 300, 312, 324, 325, 331, 361, 406, 452, 481, 514, 551, 629, 655, 658, 691, 697, 701, 710, 719, 721, 750, 763, 769, 778, 790, 814, 821, 822, 830, 850, 860, 878, 880, 885, 890, 903, 923, 945, 957, 959, 960, 973, 983, 985, 986, 987, 991, 1004, 1006, 1007, 1009, 1022, 1026, 1028, 1042, 1049, 1055, 1059, 1075, 1079, 1082, 1088, 1098, 1107, 1124, 1130, 1132, 1143, 1145, 1147, 1148, 1150, 1151, 1169, 1179, 1182, 1183, 1195, 1202, 1214, 1217, 1224, 1266, 1269, 1278, 1280, 1289, 1290, 1294, 1297, 1301, 1302, 1303, 1304, 1307, 1317, 1320, 1322, 1325, 1331, 1337, 1339, 1341, 1342, 1347, 1350, 1354, 1381, 1384, 1385, 1387, 1391, 1401, 1408, 1410, 1411, 1422, 1431, 1435, 1439, 1441, 1463, 1498, 1499, 1503, 1509, 1514, 1515, 1519, 1521, 1546, 1566, 1593, 1614, 1626, 1633, 1667, 1696, 1702, 1710, 1712, 1731, 1732, 1772, 1778, 1781, 1787, 1830, 1842, 1859, 1861, 1862, 1873, 1894, 1956, 1997, 2024, 2062, 2063, 2067, 2071, 2075, 2114, 2116, 2118, 2120, 2122, 2128, 2156
- Europe, Western–Greece (Hellenic Republic–Elliniki Dimokratia–Hellas. Including Crete, Kríte, Kriti, or Creta, and Epirus or Epeiros) 300, 325, 331, 446, 447, 697, 805, 895, 998, 1325, 1351, 1353, 1544
- Europe, Western–Iceland (Lydhveldidh or Lyoveldio Island) 1325
- Europe, Western–Ireland, Republic of (Éire; Also Called Irish Republic) 1147, 1325, 1333, 1441, 1514, 1521, 1579, 1593, 1944, 2027, 2094
- Europe, Western–Italy (Repubblica Italiana) 220, 325, 326, 331, 334, 341, 404, 406, 447, 452, 576, 629, 655, 658, 767, 826, 830, 857, 885, 969, 973, 983, 1004, 1006, 1019, 1028, 1041, 1049, 1050, 1088, 1104, 1147, 1150, 1260, 1261, 1278, 1301, 1313, 1317, 1325, 1333, 1337, 1339, 1341, 1354, 1383, 1431, 1443, 1499, 1506, 1513, 1514, 1521, 1620, 1633, 1645, 1772, 1832, 1868, 1895, 1930, 2063, 2071, 2156
- Europe–Western–Italy–Soy Ingredients Used in Italian-Style Recipes, Food Products, or Dishes Worldwide 564, 575, 797, 798, 960, 1050, 1127, 1205, 1442, 2062
- Europe, Western–Luxembourg, Grand Duchy of (Occasionally spelled Luxemburg) 1325
- Europe, Western–Malta 1325, 1351, 1353
- Europe, Western–Netherlands, Kingdom of the (Koninkrijk der Nederlanden), Including Holland 115, 220, 361, 520, 607, 629, 641, 645, 656, 659, 695, 697, 719, 720, 769, 778, 822, 833, 834, 850, 923, 934, 950, 1006, 1041, 1042, 1049, 1050, 1075, 1084, 1093, 1130, 1132, 1143, 1147, 1150, 1151, 1182, 1183, 1189, 1190, 1259, 1263, 1268, 1269, 1277, 1294, 1297, 1303, 1320, 1322, 1323, 1325, 1333, 1334, 1337, 1341, 1342, 1354, 1356, 1370, 1388, 1393, 1401, 1431, 1436, 1447, 1463, 1497, 1499, 1507, 1509, 1515, 1527, 1539, 1546, 1551, 1593, 1657, 1667, 1698, 1699, 1714, 1764, 1772, 1818, 1845, 1856, 1859, 1880, 1886, 1921, 1931, 1940, 1969, 1996, 1997, 2027
- Europe, Western–Norway, Kingdom of (Kongeriket Norge) 406, 1294, 1320, 1325, 1342, 1381, 1453, 1513, 1514, 1696, 1834
- Europe, Western–Portugal (República Portuguesa; Including Macao / Macau {Until 1999} and the Azores) 446, 447, 1009, 1049, 1325, 1333, 1431, 1436, 1507, 1513, 1514, 1521, 1642, 1778
- Europe, Western–Scotland (Part of United Kingdom since 1707)

79, 577, 682, 872, 1042, 1099, 1283, 1353, 1606, 1687, 2106, 2115, 2119

Europe, Western–Spain, Kingdom of (Reino de España) 325, 331, 406, 446, 447, 464, 655, 697, 769, 853, 934, 1009, 1049, 1124, 1164, 1294, 1301, 1320, 1325, 1339, 1342, 1431, 1443, 1448, 1499, 1513, 1514, 1521, 1762, 1772

Europe, Western–Sweden, Kingdom of (Konungariket Sverige) 496, 629, 860, 1042, 1049, 1179, 1269, 1294, 1301, 1319, 1320, 1322, 1325, 1354, 1381, 1453, 1512, 1513, 1514, 1587, 1696, 2156

Europe, Western–Switzerland (Swiss Confederation) 218, 220, 255, 481, 515, 555, 697, 703, 866, 921, 984, 987, 1004, 1006, 1008, 1019, 1042, 1049, 1050, 1108, 1127, 1183, 1263, 1278, 1294, 1301, 1303, 1317, 1320, 1322, 1325, 1339, 1342, 1354, 1370, 1499, 1509, 1581, 1773, 1859, 2156

Europe, Western–United Kingdom of Great Britain and Northern Ireland (UK–Including England, Scotland, Wales, Channel Islands, Isle of Man, Gibraltar) 16, 24, 61, 64, 79, 84, 99, 127, 138, 169, 218, 300, 312, 331, 339, 340, 371, 390, 392, 396, 406, 411, 417, 437, 438, 441, 442, 443, 444, 445, 451, 452, 474, 481, 482, 489, 496, 510, 511, 512, 530, 543, 552, 555, 563, 570, 572, 573, 577, 591, 602, 603, 612, 625, 628, 633, 652, 655, 656, 658, 659, 660, 663, 665, 669, 682, 686, 697, 700, 703, 704, 719, 720, 726, 727, 732, 736, 737, 738, 743, 746, 747, 748, 751, 759, 765, 769, 771, 778, 780, 782, 785, 796, 797, 798, 799, 802, 813, 822, 830, 833, 834, 845, 850, 851, 857, 861, 862, 863, 864, 865, 869, 872, 877, 878, 879, 880, 898, 910, 915, 916, 917, 918, 919, 922, 923, 935, 936, 940, 941, 950, 954, 963, 964, 974, 977, 988, 989, 1004, 1006, 1007, 1011, 1012, 1016, 1018, 1022, 1024, 1026, 1035, 1036, 1037, 1038, 1039, 1040, 1042, 1044, 1045, 1049, 1051, 1052, 1053, 1057, 1058, 1060, 1074, 1076, 1077, 1086, 1087, 1089, 1092, 1093, 1094, 1096, 1098, 1099, 1104, 1107, 1110, 1111, 1112, 1113, 1114, 1118, 1122, 1124, 1125, 1126, 1128, 1133, 1135, 1136, 1137, 1139, 1140, 1143, 1147, 1148, 1153, 1154, 1155, 1156, 1157, 1158, 1160, 1161, 1163, 1165, 1168, 1171, 1173, 1174, 1179, 1182, 1183, 1186, 1188, 1192, 1193, 1196, 1197, 1198, 1208, 1209, 1219, 1220, 1222, 1223, 1224, 1226, 1228, 1233, 1234, 1235, 1236, 1237, 1244, 1248, 1252, 1253, 1254, 1255, 1256, 1257, 1259, 1265, 1267, 1269, 1270, 1271, 1274, 1275, 1278, 1282, 1283, 1286, 1287, 1288, 1291, 1292, 1293, 1294, 1295, 1296, 1301, 1302, 1303, 1304, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1324, 1325, 1326, 1327, 1328, 1331, 1332, 1333, 1335, 1336, 1339, 1340, 1341, 1342, 1344, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1360, 1361, 1362, 1363, 1365, 1366, 1370, 1371, 1380, 1381, 1387, 1388, 1390, 1391, 1392, 1393, 1397, 1401, 1402, 1404, 1405, 1410, 1411, 1412, 1413, 1420, 1423, 1424, 1425, 1426, 1431, 1433, 1438, 1441, 1445, 1446, 1447, 1448, 1449, 1450, 1452, 1453, 1457, 1462, 1463, 1465, 1479, 1485, 1486, 1492, 1498, 1499, 1500, 1501, 1509, 1510, 1511, 1512, 1513, 1514, 1516, 1518, 1519, 1520, 1521, 1523, 1531, 1532, 1545, 1546, 1569, 1578, 1579, 1593, 1606, 1608, 1609, 1610, 1612, 1626, 1627, 1628, 1629, 1638, 1646, 1651, 1652, 1653, 1654, 1655, 1656, 1658, 1687, 1690, 1696, 1699, 1715, 1743, 1752, 1755, 1756, 1759, 1764, 1781, 1786, 1787, 1815, 1819, 1859, 1863, 1899, 1956, 1999, 2023, 2027, 2044, 2045, 2047, 2049, 2056, 2057, 2066, 2075, 2085, 2094, 2106, 2115, 2119, 2131

Europe, Western–Vatican City (Officially The Holy See) 1723

Exercise. *See* Physical Fitness, Physical Culture, and Exercise

Expellers. *See* Soybean Crushing–Equipment–Screw Presses and Expellers

Experiment Stations, Office of. *See* United States Department of Agriculture (USDA)–Office of Experiment Stations

Experiment stations (state) in USA. *See* Agricultural Experiment Stations in the United States

Explosions or fires. *See* Soybean Crushing–Explosions and/or Fires in Soybean Solvent Extraction Plants

Explosives Made from Soy Oil or Glycerine–Industrial Uses of Soy Oil as a Non-Drying Oil 74, 239

Exports. *See* Trade of Soybeans, Oil & Meal, or see Individual Soyfoods Exported

Extruder / Extrusion Cooker Manufacturers–Wenger International, Inc. (Kansas City, Missouri; Sabetha, Kansas), Incl. Extru-Tech, Inc.. 493, 496, 541, 595, 807, 809, 849, 906, 932, 944, 959, 1042, 1071, 1466, 1473, 1871, 1969, 1997, 2001, 2033, 2091, 2101, 2107

Extruders and Extrusion Cooking, Low Cost–Brady Crop Cooker, Thriposha, etc.. 706, 723, 809, 1025, 1299, 2151

Extruders and Extrusion Cooking: Low Cost Extrusion Cookers (LECs) 807, 848, 849, 878, 880, 959, 1331

Extruders and Extrusion Cooking, Low Cost–Including Triple “F” Inc., Insta-Pro International, Soy Innovations International, and Heartland Agri Partners, LLC 706, 1181, 1846, 2018, 2033, 2068, 2091, 2101, 2107

Extruders, Extrusion Cooking, Extrusion Cookers and Expanders. *See also* Low Cost Extrusion Cookers (LEC / LECs) 462, 465, 533, 535, 541, 555, 576, 584, 587, 603, 609, 611, 650, 655, 666, 686, 694, 698, 735, 742, 762, 768, 778, 788, 801, 808, 849, 857, 891, 893, 906, 911, 922, 959, 1003, 1071, 1115, 1116, 1187, 1221, 1230, 1264, 1377, 1378, 1387, 1412, 1459, 1579, 1718, 1729, 1871, 1895, 2155

Extru-Tech, Inc. *See* Extruder / Extrusion Cooker Manufacturers–Wenger International, Inc.

Faba bean or fava bean. *See* Broad Bean (*Vicia faba*)

Family history. *See* Genealogy and Family History

Fantastic Foods, Inc. (Petaluma, California) 1021, 1525, 1571, 1572, 1648

FAO. *See* United Nations (Including UNICEF, FAO, UNDP, UNESCO, and UNRRA) Work with Soy

Farm Food Co. (San Rafael, then San Francisco, California), Farm Foods, and Farm Soy Dairy (Summertown, Tennessee). Div. of

Hain Food Group (Uniondale, New York). Merged with Barracini Foods on 31 May 1985. Acquired by 21st Century Foods from Barracini Foods in mid-1993 715, 764, 803, 804, 817, 839, 860, 886, 960, 973, 979, 1106, 1107, 1205, 1269, 1278, 1859

Farm machinery. *See* Tractors

Farm (The) (Lanark, ONT, Canada). *See* Plenty Canada

Farm (The) (Summertown, Tennessee). *See also* Soyfoods Companies (USA)–Farm Food Co.. 672, 715, 724, 764, 803, 804, 817, 838, 839, 886, 960, 973, 1090, 1106, 1107, 1201, 1278, 1395, 1409, 1454, 1483, 1490, 1494, 1542, 1619, 1669, 1716, 1735, 1751, 1898, 1919, 1964, 2102, 2132

Far-Mar-Co, Inc. (A Cooperative; Hutchinson, Kansas). Created on 1 June 1968 by the merger of four regional grain cooperatives including Farmers Union Cooperative Marketing Assn., which had owned the former Dannen soybean crushing plant in St. Joseph, Missouri, since Sept. 1963. Parts later sold to PMS Foods, Inc.. 457, 540, 576, 579, 581, 585, 586, 604, 609, 631, 651, 654, 680, 681, 683, 696, 783, 903, 905, 932, 1014, 1075, 1221, 1279, 1334, 1473, 1529, 1551, 1698, 1825, 1871

Farmers Union Grain Terminal Association (GTA). Established in 1938 in St. Paul, Minnesota 365, 366, 367, 368, 391, 393, 420, 421, 422, 423, 424, 425, 429, 430, 432, 433, 434, 440, 454, 463, 472, 473, 477, 501, 520, 521, 579, 612, 620, 683, 754, 755, 790, 844, 871, 899, 903, 905, 931, 1101, 1164, 1305, 1364, 1432, 1455, 1551, 1597, 1685, 1955, 1957

Farmland Industries, Inc. Named Consumers Cooperative Association from 1934 to 1 Sept. 1966. Declared Bankruptcy in May 2002 182, 209, 211, 242, 254, 540, 579, 683, 790, 827, 855, 899, 903, 905, 1002, 1103, 1551, 1871, 2006

Fatty Acids for Non-Drying or Drying Applications (As in Hot-Melt Glues or the Curing Component of Epoxy Glues)–Industrial Uses of Soy Oil 78, 139, 172, 230, 239, 277, 305, 309, 330, 338, 346, 361, 395, 403, 1041, 1601, 1893, 1976

Fearn, Dr. Charles E. (-1949), and Fearn Soya Foods / Fearn Natural Foods 42, 75, 79, 142, 160, 538, 816, 848, 1107, 1109, 1331, 1350

Feed manufacturing companies. *See* Ralston Purina Company

Feeds–Efficiency of Animals in Converting Feeds into Human Foods 1348, 1350

Feeds / Forage from Soybean Plants–Hay (Whole Dried Soybean Plants, Foliage and Immature Seed Included) 95, 257, 376

Feeds / Forage from Soybean Plants or Full-Fat Seeds (Including Forage, Fodder {Green Plants}, or Ground Soybean Seeds) 37, 58, 70, 71, 128, 879, 1144, 1300

Feeds Made from Soybean Meal (Defatted) 26, 44, 70, 72, 76, 81, 87, 88, 95, 97, 109, 112, 129, 136, 148, 171, 173, 179, 188, 202, 206, 215, 225, 234, 251, 270, 273, 274, 283, 287, 321, 327, 334,

346, 348, 350, 354, 386, 399, 489, 491, 556, 557, 598, 623, 644, 655, 824, 826, 986, 1164, 1178, 1238, 1350

Feeds, Other Types (Okara, Calf Milk Replacers, Soybean Hulls, etc.) 695, 1007, 1337, 1341

Feeds–Soybeans, soybean forage, or soy products fed to various types of animals. *See* The type of animal–chickens, pigs, cows, horses, etc.

Feminization. *See* Reproduction / Reproductive, Fertility, or Feminization Problems

Fermented Black Soybean Extract (*Shizhi / Shih Chih*), and Fermented Black Soybean Sauce (Mandarin: Shiyou / Shih-yu. Cantonese: Shi-yau / Si-yau / Seow. Japanese: Kuki-jiru). *See also* Black Bean Sauce 945

Fermented Black Soybeans–from The Philippines–Tau-si, Tausi, Tao-si, Taosi 945, 1456

Fermented Black Soybeans–Whole Soybeans Fermented with Salt–Also called Fermented Black Beans, Salted Black Beans, Salty Black Beans, Black Fermented Beans, Black Beans, Black Bean Sauce, Black Bean and Ginger Sauce, Chinese Black Beans, Preserved Black Beans or Preserved Chinese Black Beans. In Chinese (Mandarin): Shi, Doushi, or Douchi (pinyin), Tou-shih, Touthih, or Tou-ch'ih (Wade-Giles). Cantonese: Dow see, Dow si, Dow-si, Dowsi, or Do shih. In Japan: Hamanatto, Daitokuji Natto, Shiokara Natto, or Tera Natto. In the Philippines: Tausi or Taosi / Tao-si. In Malaysia or Thailand: Tao si. In Indonesia: Tao dji, Tao-dji, or Tao-djie 767, 902, 945, 995, 1056, 1456, 1971, 1988, 2097, 2113

Fermented Soyfoods and Their Fermentation (General). *See also*: Microbiology and Bacteriology–History of Early Discoveries 814

Fermented Specialty Soyfoods–Soy Wine, Cantonese Wine Starter (Kiu-Tsee / Tsée), Soy Fermentation Pellicle or Bean Ferment (Tou Huang), Soyidli / Idli, Dosa / Dosai, Dhokla, and Soy Ogi 944

Fermented tofu. *See* Tofu, Fermented

Fermented whole soybeans. *See* Natto, Dawa-dawa, Kinema, Thua-nao

Ferruzzi-Montedison (Italy). Purchased Central Soya Co. (USA) in Oct. 1987. European crushing operations renamed Cereol on 1 Jan. 1990. Cereol acquired by Bunge in April 2003 1150, 1260, 1261, 1278, 1341, 1383, 1384, 1431, 1443, 1468, 1506, 1546, 1764, 1870, 1895, 1930, 1931, 1940

Fertilizer, soybean meal used as. *See* Soybean Meal / Cake, Fiber (as from Okara), or Shoyu Presscake as a Fertilizer or Manure for the Soil

Fertilizers / Fertilizer (Incl. Foliar Sprays), Fertilization, Plant Nutrition, Mineral Needs, and Nutritional / Physiological Disorders of Soybeans (Including Chlorosis) 972

Fiber. *See* Carbohydrates–Dietary Fiber

Fiber–Okara or Soy Pulp, from Making Soymilk or Tofu–Value Added Uses (Not Including Livestock Feeds) and Solutions to Disposal Problems 910, 1087, 1319

Fiber–Okara or Soy Pulp, the Residue Left from Making Soymilk or Tofu. Also called Bean Curd Residue, Soybean Curd Residue, Dou-fu-zha (Pinyin) 324, 672, 724, 803, 818, 839, 924, 941, 942, 945, 960, 973, 1007, 1059, 1087, 1099, 1128, 1134, 1146, 1162, 1180, 1264, 1319, 1356, 1464, 1559, 1570, 1657, 1678, 1732, 1733, 1741, 1742, 1933, 1937, 1988, 2001, 2050, 2062, 2087, 2090, 2100, 2105

Fiber–Okara or Soy Pulp, Used as an Ingredient in Commercial Soyfood Products 572, 751, 910, 1040, 1110

Fiber–Seventh-day Adventist Writings or Products (Especially Early) Related to Dietary Fiber 782, 1292, 1858

Fiber, Soy–Bran–Etymology of This Term and Its Cognates / Relatives in Various Languages 1145

Fiber, Soy–Bran (Pulverized Soybean Hulls / Seed Coats) and Other Uses of Soybean Hulls 759, 761, 762, 768, 776, 777, 779, 794, 815, 855, 874, 929, 930, 1134, 1145, 1160, 1184, 1265, 1419, 1435, 1472, 1607, 2016

Fiber–Soy Cotyledon Fiber / Polysaccharides (from Making Soy Protein Isolates) 914, 952, 1134, 1546, 1922

Fibers (Artificial Wool or Textiles Made from Spun Soy Protein Fiber, Including Azlon, Soyilon, and Soy Silk / Soysilk)–Industrial Uses of Soy Proteins 94, 96, 122, 123, 198, 248, 509, 553, 653, 857, 1001, 1003, 1028, 1075, 1091, 1387, 1421, 1470, 1471, 1472, 1474, 1475, 2153, 2154

Fires or explosions. *See* Soybean Crushing–Explosions and/or Fires in Soybean Solvent Extraction Plants

Fish, meatless. *See* Meat Alternatives–Meatless Fish, Shellfish, and Other Seafood-like Products

Fish or Crustaceans (e.g., Shrimp) Fed Soybean Meal or Oil as Feed Using Aquaculture or Mariculture 925, 1717, 1849

Fitness. *See* Physical Fitness, Physical Culture, and Exercise

Flakes, from whole soybeans. *See* Whole Soy Flakes

Flatulence or Intestinal Gas–Caused by Complex Sugars (As the Oligosaccharides Raffinose and Stachyose in Soybeans), by Fiber, or by Lactose in Milk 476, 639, 801, 932, 980, 1187, 1435, 1607, 1611, 1659, 1671, 2155

Flavor / Taste Problems and Ways of Solving Them (Especially Beany Off-Flavors in Soy Oil, Soymilk, Tofu, Whole Dry Soybeans, or Soy Protein Products, and Ways of Masking or Eliminating Them) 42, 195, 198, 310, 324, 338, 353, 589, 603, 801, 1021, 1311, 1471, 1642, 1828

Flax plant or flaxseed. *See* Linseed Oil, Linseed Cake / Meal, or the Flax / Flaxseed Plant

Flour, cottonseed. *See* Cottonseed Flour

Flour, soy. *See* Soy Flour

Flour, soy–Imports, Exports. *See* Soy Flour–Imports, Exports, International Trade

Flour, soy–Industrial uses of. *See* Soy Flour, Industrial Uses of–Other

Foams for Fighting Fires–Industrial Uses of Soy Proteins (Foam, Foaming Agents) 361, 1079, 1082, 1088, 1972

Fodder, soybean. *See* Feeds / Forage from Soybean Plants or Full-Fat Seeds

Food and Drug Administration (FDA, U.S. Dept. of Health and Human Services) 507, 526, 548, 562, 568, 577, 611, 881, 1050, 1107, 1150, 1214, 1247, 1276, 1543, 1567, 1570, 1630, 1659, 1722, 1724, 1743, 1752, 1753, 1755, 1756, 1767, 1787, 1793, 1799, 1815, 1853, 1860, 1883, 1892, 1904, 1906, 1916, 1961, 1965, 1973, 1974, 2080, 2093

Food and Nutrition Service of USDA. *See* United States Department of Agriculture (USDA)–Food and Nutrition Service (FNS)

Food Production and Distribution Administration of USDA. *See* United States Department of Agriculture (USDA)–War Food Administration (WFA)

Food uses of soybeans, breeding for. *See* Variety Development, Breeding, Selection, Evaluation, Growing, or Handling of Soybeans for Food Uses

Foodservice and institutional feeding or catering. *See* School Lunch Program

Foodservice and Institutional Feeding or Catering, Including Quantity or Bulk Recipes 488, 526, 586, 684, 783, 794, 848, 923, 943, 1084, 1180, 1208, 1258, 1271, 1295, 1353, 1385, 1394, 1464, 1501, 1570, 1571, 1572, 1622, 1642, 1782, 1817, 1822, 1825, 1829, 1892, 1903, 1973, 1974

Forage, soybean. *See* Feeds / Forage from Soybean Plants or Full-Fat Seeds

Ford, Henry (1863-1947), and His Researchers–Work with Soy–Robert Boyer, Frank Calvert, William Atkinson, Edsel Ruddiman, Bob Smith, Holton W. “Rex” Diamond, and Jan Willemse 15, 40, 42, 58, 61, 62, 64, 65, 74, 79, 83, 90, 122, 123, 124, 129, 137, 139, 153, 159, 175, 195, 198, 212, 242, 254, 288, 313, 416, 462, 467, 509, 535, 541, 553, 555, 593, 594, 619, 622, 650, 653, 698, 750, 801, 812, 857, 925, 983, 1001, 1003, 1023, 1028, 1070, 1072, 1075, 1081, 1088, 1091, 1109, 1119, 1164, 1268, 1348, 1387, 1421, 1427, 1466, 1467, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1497, 1529,

1570, 1668, 1732, 1780, 1825, 1855, 1856, 1903, 2102, 2132, 2152, 2153, 2154

Foreign Agricultural Service of USDA. *See* United States Department of Agriculture (USDA)–Foreign Agricultural Service (FAS)

Foundry cores, binder. *See* Binder for Sand Foundry Cores

Fouts Family of Indiana–Incl. Taylor Fouts (1880-1952), His Brothers Noah Fouts (1864-1938) and Finis Fouts (1866-1943), Their Soyland Farm (1918-1928), and Their Father Solomon Fouts (1826-1907) 558, 925, 1668

France. *See* Europe, Western–France

Frankfurters, hot dogs, or wieners–meatless. *See* Meat Alternatives–Meatless Sausages

Franklin, Benjamin (1706-1790; American Statesman and Philosopher), Charles Thomson, and the American Philosophical Society (APS–Philadelphia, Pennsylvania) 1081

French Oil Mill Machinery Co. (Piqua, Ohio). Maker of Soybean Crushing Equipment. Also Named French Oil Machinery Co.. 175, 218, 361, 520, 521, 750, 1668, 1846, 2016, 2036, 2092, 2099, 2106, 2115, 2119

Frozen desserts, non-dairy. *See* Soy Ice Cream

Frozen tofu. *See* Tofu, Frozen, Dried-Frozen, or Dried Whole

Fruitarianism. *See* Vegetarianism–Fruitarianism

Fuji Oil Co., Ltd. (Osaka, Japan), Incl. Fuji Purina Protein Ltd.. 576, 655, 982, 1700, 1764, 1852, 1871, 1969

Fuller Life Inc. (Maryville, Tennessee). Formerly Sovex Natural Foods of Collegedale, Tennessee; a Division of McKee Foods Corp. Name Changed to Blue Planet Foods in 2004 858

Functional Foods, Nutraceuticals / Nutriceuticals, Designer Foods, or Medicinal Foods 1543, 1620, 1630, 1645, 1667, 1671, 1698, 1701, 1720, 1722, 1765, 1781, 1925

Funk Brothers Seed Co. (Bloomington, Illinois). Founded in 1901 by Eugene D. Funk, Sr. (1867-1944). Started selling soybeans in 1903. Started Crushing Soybeans in 1924. Renamed Funk Seeds International by 1983 15, 26, 27, 29, 37, 58, 62, 65, 75, 79, 142, 159, 242, 313, 324, 559, 690, 691, 925, 955, 971, 972, 1029, 2149

Galactina S.A. (Belp, Switzerland) 1006, 1042, 1049, 1108, 1183, 1301, 1303, 1317, 1322, 1339, 1354, 1356, 1370

Galaxy Nutritional Foods, Inc. and its Soyco Foods Div. (Orlando, Florida) 1167, 1205, 1571, 1709, 1745, 1747, 1799, 1800, 1872, 1887, 2027

Gandhi, Mohandas K. (“Mahatma”) (1869-1948). Vegetarian Pioneer Worldwide, and in India and England 989

Ganmodoki. *See* Tofu, Fried

Ganmodoki and Hiryozu. *See* Meat Alternatives (Traditional Asian)–Ganmodoki and Hiryozu

Garden Protein International (GPI), Maker of Gardein Meat Alternatives (Founded by Yves Potvin, 2005, Vancouver, British Columbia, Canada) 1980

Gardenburger Inc. Named Wholesome and Hearty Foods, Inc. until 24 Oct. 1997 (Portland, Oregon) 1345, 1525, 1571, 1572, 1782

Gardner, Henry A. *See* Paint Manufacturers’ Association of the U.S.

Gas, intestinal. *See* Flatulence or Intestinal Gas

Genealogy and Family History. *See Also*: Obituaries, Biographies 3, 84, 221, 281, 307, 472, 499, 558, 570, 627, 651, 738, 745, 925, 1164, 1396, 1497, 1674, 2045, 2069, 2123, 2147

General Mills, Inc. (Minneapolis, Minneapolis) 172, 179, 192, 195, 198, 201, 209, 225, 242, 244, 245, 254, 289, 305, 310, 313, 319, 351, 361, 405, 457, 465, 467, 470, 497, 499, 507, 520, 523, 525, 526, 527, 528, 533, 536, 538, 539, 544, 548, 554, 555, 562, 567, 568, 576, 577, 578, 585, 604, 609, 610, 629, 631, 638, 646, 651, 655, 658, 679, 680, 681, 683, 684, 696, 758, 760, 778, 783, 805, 825, 830, 857, 859, 871, 932, 1028, 1071, 1075, 1088, 1427, 1476, 1529, 1558, 1856, 1871, 1908, 1940, 1944, 2027

Genetic Diversity. *See* Soybean–Genetic Diversity, Variability and Population Structure

Genetic Engineering, Transgenics, Recombinant DNA, Transgenic Plants and Biotechnology / Biotech 1108, 1621, 1692, 1694, 1696, 1703, 1707, 1717, 1786, 1787, 1791, 1819, 1826, 1827, 1834, 1850, 1851, 1860, 1863, 1902, 1954, 2105, 2128

Genetically Engineered Foods–Consumer Concern / Response and Labeling. Includes Non-Soy Foods 1694, 1696

Genetics, soybean. *See* Breeding of Soybeans and Classical Genetics

GeniSoy Products Co. (Fairfield, California). Including MLO and Mus-L-On 1689, 1747, 1799

Georgeson, Charles Christian (1851-1931) of Kansas and Alaska 618

Germany. *See* Europe, Western–Germany

Glidden Co. (The) (Chicago, Illinois, and Cleveland, Ohio). Incl. Durkee Famous Foods. *See also*: Julian, Percy 15, 62, 65, 75, 82, 115, 121, 129, 132, 137, 138, 139, 142, 147, 150, 153, 155, 158, 159, 160, 163, 169, 172, 179, 195, 197, 207, 209, 218, 225, 235, 242, 245, 254, 268, 269, 288, 289, 290, 300, 310, 313, 319, 338, 352, 457, 683, 691, 708, 750, 783, 790, 811, 854, 903, 957, 983, 985, 987, 1028, 1041, 1070, 1072, 1079, 1080, 1082, 1083, 1085, 1088, 1091, 1109, 1380, 1421, 1439, 1455, 1466, 1473, 1825, 1856,

- 1861, 1862, 1873, 1894, 1972, 2102, 2132
- Global Warming / Climate Change as Environmental Issues 1713
- Gluten. *See* Wheat Gluten
- Glycerine, explosives made from. *See* Explosives Made from Glycerine
- Goitrogens / Goitrogenic Substances (Which Can Affect Thyroid Function and Cause Goiter) 287, 1753, 1767, 1915, 1983, 2075, 2089, 2090
- Golbitz, Peter. *See* Soyatech (Bar Harbor, Maine)
- Gold Kist, Inc. (Georgia) 579, 683, 790, 827, 899, 903, 905, 1103, 1169, 1503, 1551
- Government policies and programs effecting soybeans. *See* Policies and programs
- Grades and grading of soybeans. *See* Seed Quality of Soybeans—Condition, Grading, and Grades (Moisture, Foreign Material, Damage, etc.)
- Graham, Sylvester (1794-1851). American Health Reformer and Vegetarian (Actually Vegan) (New York) 571
- Grain Farmers of Ontario (GFO). *See* Ontario Soybean Growers (Canada)
- Grain Processing Corporation (GPC—Muscatine, Iowa) 457, 651, 680, 683, 788, 790, 855, 871, 896, 991, 992, 993, 1010, 1027, 1050, 1134, 1141, 1175, 1215, 1276, 1349, 1529, 1828, 1856, 1871, 1904
- Granose Foods Ltd. (Newport Pagnell, Buckinghamshire [Bucks.], England). Founded in 1899 under the name The International Health Association Ltd. Renamed Granose Foods Ltd. in 1926. Acquired by Haldane Foods Group in Jan. 1991 127, 392, 417, 445, 481, 482, 510, 511, 570, 659, 660, 697, 726, 727, 736, 737, 765, 771, 780, 782, 785, 796, 797, 798, 799, 833, 834, 845, 851, 861, 862, 863, 864, 865, 877, 878, 880, 919, 988, 1022, 1024, 1026, 1057, 1074, 1076, 1077, 1087, 1094, 1098, 1099, 1107, 1148, 1160, 1179, 1193, 1224, 1234, 1235, 1236, 1253, 1271, 1291, 1292, 1294, 1301, 1302, 1304, 1307, 1308, 1320, 1332, 1333, 1342, 1351, 1353, 1356, 1360, 1361, 1362, 1363, 1365, 1381, 1390, 1397, 1513, 1514, 1516, 2045
- Granules, from whole soybeans. *See* Whole Soy Flakes
- Granum. *See* Natural Foods Distributors and Master Distributors in the USA—Janus
- Great Eastern Sun and Macrobiotic Wholesale Co. (North Carolina) 960, 1021, 1107, 1205
- Green Manure, Use of Soybeans as, by Plowing / Turning In / Under a Crop of Immature / Green Soybean Plants for Soil Improvement 290, 1033
- Green soybeans. *See* Soybean Seeds—Green
- Green Vegetable Soybeans—Etymology of This Term and Its Cognates / Relatives in Various Languages 116
- Green Vegetable Soybeans—Horticulture—How to Grow as a Garden Vegetable or Commercially 324
- Green Vegetable Soybeans Industry and Market Statistics, Trends, and Analyses—By Geographical Region 123
- Green Vegetable Soybeans—Large-Seeded Vegetable-Type or Edible Soybeans, General Information About, Not Including Use As Green Vegetable Soybeans 826
- Green Vegetable Soybeans—Marketing of 1883
- Green Vegetable Soybeans—The Word Edamame (Japanese-Style, in the Pods), Usually Grown Using Vegetable-Type Soybeans—Appearance in European-Language Documents 1742, 1800, 1823, 1883, 1903, 1967, 1970, 1992, 2050
- Green Vegetable Soybeans, Usually Grown Using Vegetable-Type Soybeans 79, 82, 116, 117, 123, 137, 139, 142, 153, 324, 653, 791, 810, 890, 902, 1240, 1408, 1420, 1497, 1536, 1617, 1708, 1732, 1733, 1742, 1785, 1800, 1823, 1841, 1883, 1888, 1901, 1903, 1928, 1937, 1967, 1970, 1988, 1992, 2002, 2018, 2028, 2050, 2083, 2089
- Green Vegetable Soybeans—Vegetable-Type, Garden-Type, or Edible of Food-Grade Soybeans, General Information About, Including Use As Green Vegetable Soybeans 137, 139, 324
- Griffith Laboratories (Chicago and Alsip, Illinois) 142, 361, 465, 526, 581, 585, 586, 604, 609, 631, 651, 666, 680, 681, 682, 696, 721, 772, 788, 825, 830, 849, 855, 890, 938, 992, 1028, 1072, 1078, 1082, 1083, 1085, 1107, 1109, 1141, 1166, 1427, 1466, 1529, 1871, 2027, 2029
- Grilled tofu. *See* Tofu, Grilled. Japanese-Style
- Grits, roasted soy. *See* Roasted Whole Soy Flour (Kinako—Dark Roasted with Dry Heat, Full-Fat) and Grits
- Groundnuts. *See* Peanut, Peanuts
- Gunther Products, Inc. (Galesburg, Illinois. Founded by J.K. Gunter in 1949. Started in 1950. Acquired in April 1995 by Quest International, a Unit of Unilever) 195, 361, 386, 465, 1072, 1078, 1079, 1080, 1082, 1085, 1109, 1175, 1463, 1856, 1859, 1871
- Haberlandt, Friedrich J. (1826-1878, *Hochschule fuer Bodencultur*, Vienna, Austria) 290
- Haberlandt soybean variety. *See* Soybean Varieties USA—Haberlandt
- Hackleman, Jay C. (1888-1970, Extension Agronomist, Univ. of Illinois) 137, 139, 558, 925, 972, 2102, 2103, 2132
- Hain Celestial Group, Inc. (Uniondale, New York). Hain Food

Group, Inc. before 30 May 2000. Hain Pure Food Co. since Nov. 1931. Founded in Oct. 1926 by Harold Hain as Hain Health Foods 839, 973, 1571, 1725, 1787, 1800, 1859, 1961, 1969, 2012, 2027, 2044, 2056, 2057

Haldane Foods Group Ltd. (Newport Pagnell, Buckinghamshire, England). Including Regular Tofu Co., Realeat Foods, Direct Foods, Haldane Foods, Vegetarian Feasts, Vegetarian Cuisine, Genice, Unisoy, and Granose Foods Ltd. Acquired by The Hain Celestial Group in fall 2006 127, 392, 417, 445, 482, 510, 511, 512, 530, 543, 552, 570, 572, 573, 602, 652, 659, 660, 665, 669, 697, 726, 727, 732, 736, 737, 738, 751, 765, 771, 780, 782, 785, 796, 797, 798, 799, 833, 834, 845, 851, 861, 862, 863, 864, 865, 877, 878, 880, 910, 919, 922, 940, 941, 950, 1018, 1022, 1024, 1026, 1031, 1035, 1036, 1038, 1039, 1040, 1044, 1045, 1049, 1051, 1052, 1053, 1057, 1074, 1076, 1077, 1086, 1087, 1089, 1092, 1093, 1094, 1096, 1098, 1099, 1102, 1110, 1111, 1112, 1113, 1114, 1122, 1125, 1126, 1128, 1133, 1135, 1136, 1137, 1139, 1140, 1143, 1148, 1153, 1154, 1155, 1156, 1157, 1158, 1160, 1161, 1163, 1168, 1171, 1173, 1174, 1179, 1182, 1183, 1186, 1188, 1193, 1196, 1197, 1198, 1208, 1209, 1219, 1222, 1223, 1224, 1226, 1233, 1234, 1235, 1236, 1237, 1248, 1252, 1253, 1254, 1255, 1256, 1257, 1259, 1267, 1269, 1271, 1274, 1275, 1278, 1282, 1291, 1292, 1293, 1294, 1295, 1296, 1301, 1302, 1303, 1304, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1324, 1325, 1326, 1332, 1333, 1335, 1336, 1339, 1340, 1342, 1344, 1351, 1352, 1353, 1354, 1355, 1357, 1360, 1361, 1362, 1363, 1365, 1370, 1371, 1380, 1381, 1388, 1390, 1391, 1392, 1393, 1397, 1402, 1405, 1410, 1411, 1412, 1413, 1423, 1424, 1425, 1426, 1433, 1438, 1441, 1445, 1446, 1448, 1449, 1450, 1452, 1453, 1462, 1479, 1485, 1486, 1492, 1498, 1499, 1509, 1510, 1511, 1512, 1513, 1514, 1516, 1518, 1519, 1520, 1521, 1531, 1532, 1569, 1579, 1593, 1606, 1608, 1609, 1610, 1626, 1627, 1628, 1629, 1638, 1646, 1651, 1652, 1653, 1654, 1655, 1656, 1667, 1715, 1781, 1786, 1859, 1863, 1956, 2044, 2045, 2049, 2056, 2057

Hamanatto Fermented Black Soybeans—from Japan. In Japan called Hamanatto or (formerly) Hamananatto 810, 902, 945, 1988

Hamanatto / Hamananatto. *See* Hamanatto Fermented Black Soybeans—from Japan

Hansa Muehle AG. *See* Oelmuehle Hamburg AG (Hamburg, Germany)

Hansa Muehle / Hansa Mühle (The Hansa Mill) and Hanseatische Muehlenwerke AG. Incl. the Work of Hermann Bollmann and Bruno Rewald, PhD 15, 42, 47, 58, 65, 129, 175, 218, 220, 288, 289, 300, 750, 957, 983, 985, 987, 1079, 1439, 1861, 1862, 1873, 1894, 2118

Harburger Oelwerke Brinckmann und Mergell (Harburg, near Hamburg, Germany) 491, 1862

Harrison, D.W. (M.D.) (1921-2011), and Africa Basic Foods (Uganda) 1109, 2151

Hartwig, Edgar Emerson (1913-1996, North Carolina and Mississippi). Soybean Breeder for the U.S. South 558, 827, 925, 2102, 2132

Hartz (Jacob) Seed Co. (Stuttgart, Arkansas). Founded by Jacob Hartz, Sr. (1888-1963) in 1942. Continued by Jake Hartz, Jr. (1920- ). Acquired by Monsanto in April 1983. Headquarters at Des Moines, Iowa, since Jan. 1998 90, 361, 435, 558, 925, 1278

Harvesting and Threshing Soybeans (Including Use of Chemical Defoliation and Defoliants to Facilitate Harvesting) 281, 618, 1160

Hauser, Gayelord (1895-1984). Health foods pioneer, author, and lecturer in Los Angeles, California 571

Hawaii. *See* United States—States—Hawaii

Hay, soybean. *See* Feeds / Forage from Soybean Plants—Hay

Hayes Ashdod Ltd. (renamed Solbar Hatzor Ltd. in April 1987) and Hayes General Technology (Israel) 1042, 1435, 1463, 1466, 1546, 1699, 1700, 1764, 1830, 1853, 1865, 1886, 1921, 1996, 1997, 2001

Healing arts, alternative. *See* Medicine—Alternative

Health and Dietary / Food Reform Movements, especially from 1830 to the 1930s 570, 571, 771, 880, 1000, 2045

Health claims. *See* Claim or Claims of Health Benefits—Usually Authorized by the FDA

Health foods distributors and wholesalers. *See* Balanced Foods, Inc. (New York City, and New Jersey)

Health Foods Industry—Trade Associations—Natural Products Association (NPA). Named National Nutritional Foods Association (NNFA) from 1970 until 15 July 2006. Founded in 1937 as the National Health Foods Association by Anthony Berhalter of Chicago. Renamed NNFA in 1970 2044

Health Foods—Manufacturers 75, 79, 142, 392, 481, 482, 737, 772, 845, 880, 1292, 1320, 1734, 1858

Health foods manufacturers. *See* El Molino Mills

Health Foods Movement and Industry in the United Kingdom/ England 127, 445, 482, 737, 845, 880, 1291, 1294, 1320, 1342, 1381, 1392

Health Foods Movement and Industry in the United States—General (Started in the 1890s by Seventh-day Adventists) 571, 839, 1342

Health foods movement in Los Angeles, California. *See* Bragg, Paul Chappius, El Molino Mills, Hauser, Gayelord

Health Foods Stores / Shops (mostly USA)—Early (1877 to 1970s) 79, 142, 714

Health Valley (Los Angeles, then Montebello, California). Acquired by Natural Nutrition Group. Acquired by Hain Food Group of Uniondale, New York, on 18 May 1999 839, 1022, 1026, 1404

Heart disease and diet. *See* Cardiovascular Disease, Especially

- Heart Disease and Stroke
- Hemagglutinins (Lectins or Soyin) (Proteins Which Agglutinate Red Blood Cells) 285, 302, 304, 1366, 1772, 1886
- Hemp Oil or Hempseed Oil (from the seeds of *Cannabis sativa*) 1907
- Hemp (*Cannabis sativa*)—Used as a Source of Fiber for Textiles or Paper, Protein (Edestin), or Seeds (*Asanomi*). Includes Marijuana / Marihuana. See Also Hemp Oil or Hempseed Oil. Does NOT include Wild Hemp (*Sesbania macrocarpa*) or Sunn Hemp (*Crotalaria juncea*) or Manila hemp (*Musa textilis*, a species of plantain) 1075, 2054, 2060, 2073, 2081, 2092, 2099, 2106, 2115, 2119
- Henselwerk GmbH (Magstadt near Stuttgart, Germany) 1042, 1183
- Herbicides. *See* Weeds—Control and Herbicide Use
- Heuschen-Schrouff B.V. (Landgraaf, Netherlands), Including Its Subsidiary SoFine Foods (The Latter Acquired by Vandemoortele Group on 23 June 2006) 1042, 1049, 1182, 1183, 1263, 1294, 1297, 1322, 1354, 1356, 1370, 1499, 1657
- Hexane. *See* Solvents
- Hinoichi / Hinode, House Foods & Yamauchi Inc. *See* House Foods America Corporation (Los Angeles, California)
- Historical—Documents on Soybeans or Soyfoods Published from 1900 to 1923 15
- Historical—Earliest Commercial Product Seen of a Particular Type or Made in a Particular Geographic Area 24, 33, 57, 369, 695, 867, 868, 877, 1036, 1115, 2028
- Historical—Earliest Document Seen Containing a Particular Word, Term, or Phrase 6, 19, 21, 42, 54, 60, 72, 79, 106, 115, 116, 138, 159, 178, 181, 206, 282, 341, 492, 548, 576, 585, 595, 618, 638, 666, 672, 678, 691, 730, 791, 804, 830, 857, 945, 971, 973, 1054, 1121, 1240, 1243, 1263, 1323, 1345, 1384, 1389, 1464, 1525, 1538, 1594, 1778
- Historical—Earliest Document Seen on a Particular Geographical Area—a Nation / Country, U.S. State, Canadian Province, or Continent 33, 1115
- Historical—Earliest Document Seen on a Particular Subject 20, 27, 37, 38, 42, 62, 75, 98, 132, 142, 159, 179, 193, 242, 365, 406, 496, 526, 554, 715, 866, 904, 935, 1006, 1042, 1101, 1122, 1175, 1183, 1228, 1620
- Historical—Earliest Document Seen on a Particular Subject 20, 27, 37, 38, 42, 60, 61, 62, 72, 74, 75, 98, 132, 137, 139, 142, 143, 152, 155, 159, 172, 178, 179, 193, 195, 206, 209, 231, 254, 341, 365, 367, 406, 463, 465, 478, 482, 492, 496, 526, 548, 554, 579, 595, 632, 672, 678, 706, 711, 715, 777, 830, 904, 907, 945, 1006, 1042, 1101, 1122, 1145, 1175, 1183, 1228, 1515, 1620
- Historically Important Events, Trends, or Publications 128, 153, 181, 300, 508, 541, 567, 663, 723, 803, 860, 960, 1032, 1050, 1103, 1107, 1108, 1150, 1182, 1215, 1381, 1383, 1391, 1541, 1543, 1633, 1725, 1787, 1877, 1887, 2017, 2039, 2044, 2056
- History—Chronology. *See* Chronology / Timeline
- History of the Soybean—Myths and Early Errors Concerning Its History 137, 139
- History. *See* also Historical—Earliest..., Biography, Chronology / Timeline, and Obituaries 15, 24, 27, 29, 35, 84, 99, 129, 137, 139, 143, 153, 204, 218, 221, 225, 281, 288, 289, 296, 297, 300, 301, 312, 313, 320, 335, 343, 350, 367, 440, 452, 472, 481, 482, 496, 499, 509, 520, 521, 556, 557, 558, 571, 579, 598, 603, 618, 620, 631, 653, 663, 672, 688, 690, 691, 706, 715, 731, 732, 736, 737, 750, 760, 771, 826, 827, 837, 844, 848, 849, 858, 869, 873, 880, 885, 886, 898, 899, 901, 905, 906, 925, 926, 927, 928, 931, 934, 941, 944, 951, 954, 955, 957, 958, 959, 971, 972, 979, 981, 983, 984, 985, 987, 989, 1003, 1008, 1026, 1028, 1030, 1042, 1049, 1070, 1071, 1075, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1087, 1088, 1090, 1091, 1101, 1103, 1104, 1106, 1109, 1124, 1144, 1173, 1180, 1204, 1214, 1226, 1227, 1230, 1239, 1250, 1251, 1265, 1269, 1276, 1294, 1295, 1297, 1298, 1302, 1304, 1305, 1317, 1318, 1320, 1321, 1326, 1331, 1332, 1335, 1336, 1339, 1341, 1343, 1347, 1348, 1350, 1351, 1352, 1353, 1364, 1377, 1388, 1391, 1392, 1396, 1407, 1417, 1418, 1421, 1427, 1432, 1435, 1439, 1455, 1458, 1461, 1464, 1470, 1471, 1473, 1474, 1475, 1476, 1477, 1480, 1481, 1496, 1497, 1498, 1506, 1509, 1511, 1512, 1513, 1514, 1516, 1518, 1519, 1520, 1521, 1528, 1538, 1542, 1558, 1561, 1570, 1598, 1602, 1607, 1611, 1620, 1632, 1640, 1649, 1664, 1668, 1671, 1685, 1694, 1705, 1709, 1725, 1787, 1791, 1827, 1856, 1861, 1862, 1873, 1879, 1881, 1894, 1895, 1904, 1910, 1915, 1917, 1927, 1938, 1955, 1956, 1957, 1959, 1991, 1993, 1995, 1996, 1997, 2001, 2006, 2007, 2015, 2020, 2028, 2044, 2055, 2056, 2063, 2067, 2074, 2103, 2112, 2121, 2122, 2137, 2138, 2144, 2146, 2152, 2153, 2154, 2156, 2157
- Hoisin / Haisien Sauce 1056, 1090
- Holland. *See* Europe, Western—Netherlands
- Homemade fried tofu. *See* Tofu, Fried, Homemade—How to Make at Home or on a Laboratory Scale, by Hand
- Homemade roasted whole soy flour (kinako). *See* Roasted Whole Soy Flour (Kinako), Homemade—How to Make at Home or on a Laboratory Scale, by Hand
- Homemade soy sprouts. *See* Soy Sprouts, Homemade—How to Grow at Home or on a Laboratory Scale, by Hand
- Homemade soymilk. *See* Soymilk, Homemade—How to Make at Home or on a Laboratory or Community Scale
- Homemade tofu. *See* Tofu, Homemade—How to Make at Home or on a Laboratory or Community Scale, by Hand
- Homemade yuba. *See* Yuba, Homemade—How to Make at Home or on a Laboratory Scale, by Hand

Honeybees. *See* Bees

Honeymead (Mankato, Minnesota)–Cooperative 365, 366, 367, 368, 391, 393, 402, 420, 421, 422, 423, 424, 425, 429, 430, 432, 433, 434, 440, 457, 472, 473, 477, 501, 520, 521, 540, 579, 612, 620, 681, 683, 754, 755, 790, 844, 871, 899, 903, 905, 931, 976, 1101, 1103, 1164, 1266, 1305, 1364, 1384, 1396, 1427, 1432, 1551, 1590, 1597, 1685, 1702, 1840, 1871, 1955, 1957, 2069

Honeymead Products Co. (Cedar Rapids, Spencer, and Washington, Iowa, 1938-1945. Then Mankato, Minnesota, 1948-1960). *See also* Andreas Family 19, 48, 132, 133, 159, 162, 172, 174, 177, 183, 187, 216, 218, 225, 232, 242, 254, 288, 316, 317, 318, 319, 327, 332, 335, 337, 342, 347, 349, 351, 360, 365, 366, 367, 472, 499, 612, 620, 931, 934, 1101, 1164, 1239, 1243, 1364, 1396, 1455, 1879, 1955, 2157

Hong Kong. *See* Asia, East–Hong Kong

Hormones from soybeans. *See* Sterols or Steroid Hormones

Horse bean. *See* Broad Bean (*Vicia faba*)

Horvath, Artemy / Arthemey Alexis (1886-1979) and Horvath Laboratories. *See also* Soya Corporation of America and Dr. Armand Burke 39, 42, 62, 79, 142, 160, 242

House Foods America Corporation (Garden Grove, California). Formerly Hinoichi / Hinode, House Foods & Yamauchi Inc.. 945, 1090, 1108, 1180, 1278, 1479, 1573, 1665, 1725, 1859, 1995, 2044, 2091, 2101, 2102, 2107, 2129, 2132, 2133, 2156

Huegli Naehrmitel A.G. (Steinach-Arbon, Switzerland), Yamato Tofuhaus Sojaprodukte GmbH (Tuebingen-Hirschau, Germany), Horst Heirler (Gauting bei Muenchen, Germany), Soyastern Naturkost GmbH / Dorstener Tofu Produktions GmbH (Dorsten, Germany), and KMK (Kurhessische Molkerei Kassel) 1042, 1049, 1182, 1183, 1263, 1278, 1317, 1322, 1354, 1356, 1509, 1859

Hulls, soybean, uses. *See* Fiber, Soy

Human Nutrition–Clinical Trials 205, 402, 439, 493, 587, 596, 674, 815, 969, 997, 1019, 1389, 1524, 1994

Hunger, Malnutrition, Famine, Food Shortages, and Mortality Worldwide 511, 527, 529, 534, 542, 577, 662, 701, 766, 769, 822, 1081, 1717, 1857

HVP. *See* Hydrolyzed Vegetable Protein (Non-Soy), or Soy Protein–Hydrolyzed (General)

HVP type soy sauce. *See* Soy Sauce, HVP Type (Non-Fermented or Semi-Fermented)

Hydraulic presses. *See* Soybean Crushing–Equipment–Hydraulic Presses

Hydrogenated Products (Margarine, Shortening, Soy Oil) Industry and Market Statistics, Trends, and Analyses–By Geographical Region 74, 83, 313, 526, 565, 709, 1007, 1212

Hydrogenation. *See* Margarine, Margarine, Shortening, Trans Fatty Acids, Vanaspati, also Margarine and Shortening

Hydrogenation–General, Early History, and the Process. Soy is Not Mentioned 330, 563, 709, 732

Hydrogenation of Soybean Oil, Soy Fatty Acids, or Soy Lecithin 79, 175, 195, 298, 299, 361, 376, 460, 508, 513, 819, 882, 884, 908, 934, 937, 947, 1030, 1218, 1341, 1432, 2121

Hydrogenation–Safety and Digestibility Issues 1664

Hydrolyzed Vegetable Protein (HVP)–Not Made from Soybeans. *See also*: Soy Proteins–Hydrolyzed and Hydrolysates (General) 655

Ice cream, non-soy, non-dairy. *See* Soy Ice Cream–Non-Soy Non-Dairy Relatives

Ice cream, soy. *See* Soy Ice Cream, Soy Ice Cream (Frozen or Dry Mix)–Imports, Exports, International Trade

Icing, non-dairy. *See* Dairylike Non-dairy Soy-based Products, Other

Identity Preserved / Preservation 1607, 1786, 1791, 1847, 1890

IITA (Nigeria). *See* International Institute of Tropical Agriculture (IITA) (Ibadan, Nigeria)

Illinois. *See* United States–States–Illinois

Illinois Center for Soy Foods (University of Illinois, Urbana-Champaign). Barbara Klein and Keith Cadwallader, Co-Directors 849, 1942, 1943, 1970, 1979, 2009, 2031, 2050, 2053

Illinois, University of (Urbana-Champaign, Illinois). Soyfoods Research & Development 715, 849, 925, 998, 1028, 1348, 1479, 1482, 1538, 1645, 1942, 2031

Illustrations, Not About Soy, Published after 1923. *See also* Photos 771

Illustrations Published after 1923. *See also* Photographs 120, 125, 131, 137, 139, 140, 175, 186, 193, 194, 208, 275, 288, 315, 330, 373, 374, 410, 459, 469, 530, 541, 624, 652, 662, 672, 688, 705, 752, 753, 764, 771, 780, 837, 894, 940, 973, 1098, 1135, 1146, 1148, 1153, 1154, 1164, 1168, 1224, 1227, 1236, 1244, 1267, 1269, 1282, 1307, 1309, 1313, 1355, 1362, 1405, 1423, 1445, 1448, 1478, 1496, 1524, 1556, 1557, 1577, 1583, 1616, 1667, 1672, 1673, 1676, 1687, 1715, 1750, 1781, 1787, 1795, 1814, 1844, 1867, 1875, 1892, 1897, 1906, 1922, 1928, 1947, 1954, 1957, 1973, 1974, 2007, 2039, 2052, 2074, 2075

Imagine Foods, Inc. (Palo Alto & San Carlos, California). Rice Dream / Beverage Manufactured by California Natural Products (CNP, Manteca, California) 1570, 1571, 1787, 1908

Implements, agricultural. *See* Machinery (Agricultural), Implements, Equipment and Mechanization

Important Documents #1–The Very Most Important 20, 24, 27, 29, 37, 38, 42, 61, 62, 72, 75, 98, 132, 137, 139, 142, 153, 158, 159, 175, 178, 179, 181, 193, 195, 242, 283, 289, 341, 365, 402, 406, 463, 478, 482, 492, 496, 526, 548, 554, 558, 579, 595, 618, 620, 629, 672, 678, 696, 710, 715, 750, 803, 826, 866, 876, 904, 907, 934, 935, 1006, 1042, 1101, 1122, 1175, 1183, 1228, 1249, 1339, 1346, 1354, 1458, 1499, 1503, 1536, 1566, 1597, 1602, 1614, 1672, 1673, 1687, 1690, 1719, 1739, 1759, 1760, 1764, 1767, 1810, 1832, 2044, 2056, 2063, 2074, 2112, 2132

Important Documents #2–The Next Most Important 74, 79, 128, 206, 231, 324, 465, 632, 653, 655, 686, 711, 777, 855, 888, 932, 945, 973, 1000, 1001, 1004, 1049, 1090, 1145, 1164, 1166, 1294, 1301, 1303, 1304, 1317, 1331, 1332, 1333, 1349, 1421, 1427, 1456, 1461, 1464, 1475, 1509, 1515, 1524, 1563, 1573, 1645, 1753, 1830

Imports. *See* Trade of Soybeans, Oil & Meal, or see Individual Soyfoods Imported

INARI, Ltd. *See* Sycamore Creek Co.

India. *See* Asia, South–India

Indiana. *See* United States–States–Indiana

Indiana Soy Pioneers. *See* Central Soya Co., Fouts Family, Meharry

Indonesia. *See* Asia, Southeast–Indonesia

Indonesians Overseas, Especially Work with Soy 715

Indonesian-style soy sauce. *See* Soy Sauce, Indonesian Style or from the Dutch East Indies (Kecap, Kécap, Kechap, Ketjap, Kétjap) Ketchup / Catsup

Industrial uses of soy oil. *See* Fatty Acids for Non-Drying or Drying Applications (As in Hot-Melt Glues or the Curing Component of Epoxy Glues), Steroids, Steroid Hormones, and Sterols

Industrial uses of soy oil as a drying oil. *See* Adhesives, Asphalt Preservation Agents, Caulking Compounds, Artificial Leather, and Other Minor or General Uses, Ink for Printing, Paints, Varnishes, Enamels, Lacquers, and Other Protective / Decorative Coatings, Rubber Substitutes or Artificial / Synthetic Rubber (Factice)

Industrial uses of soy oil as a non-drying oil. *See* Dust Suppressants and Dust Control, Lubricants, Lubricating Agents, and Axle Grease for Carts

Industrial Uses of Soy Oil (General) 58, 82, 123, 206, 233, 248, 345, 371, 379, 413, 426, 1068, 1421

Industrial uses of soy proteins. *See* Fibers (Artificial Wool or Textiles Made from Spun Soy Protein Fibers, Including Azlon, Soydon, and Soy Silk / Soysilk), Foams for Fighting Fires, Paints (Especially Water-Based Latex Paints), Paper Coatings or Sizings, or Textile Sizing, Plastics (Including Molded Plastic Parts, Plastic Film, Disposable Eating Utensils and Tableware–From Spoons to Plates, and Packaging Materials)

Industrial Uses of Soy Proteins–General and Minor Uses–Galalith, Sojalith, Celluloid, Cosmetics (Lotions and Soaps), Rubber Substitutes, Insecticides, etc. *See* also Culture Media as for Antibiotics Industry 77, 79, 248, 329, 336, 374, 399, 708, 898, 925, 1091, 1231, 1245, 1474, 1893

Industrial uses of soy proteins (including soy flour). *See* Adhesives or Glues for Plywood, Other Woods, Wallpaper, or Building Materials

Industrial uses of soybeans. *See* Chemurgy, the Farm Chemurgic Movement, and the Farm Chemurgic Council (USA, 1930s to 1950s) Including, Lecithin, Soy–Industrial Uses, New Uses Movement (USA, starting 1987), Successor to the Farm Chemurgic Movement (1930s to 1950s), Soy Flour, Industrial Uses of–Other, Soybean Meal / Cake, Fiber (as from Okara), or Shoyu Presscake as a Fertilizer or Manure for the Soil

Industrial Uses of Soybeans (General Non-Food, Non-Feed) 39, 157, 175, 286, 1421, 1427, 1601

Industrial Uses of Soybeans (Non-Food, Non-Feed)–Industry and Market Statistics, Trends, and Analyses–By Geographical Region 62, 65, 157, 248, 282, 313, 363, 1041, 1298, 1480, 1539, 1590

Industrial Uses of Soybeans (Non-Food, Non-Feed)–Industry and Market Statistics, Trends, and Analyses–Larger Companies (Ford Motor Co., I.F. Laucks, O’Brien Varnish Co., The Drackett Co., ADM, General Mills, etc.) 62, 230, 313, 857, 1471, 1472, 2043

Industry and Market Analyses and Statistics–Market Studies 526, 623, 806, 911, 945, 1090, 1271, 1322, 1339, 1356, 1436, 1509, 1570, 1571, 1709, 1907, 2027, 2114

Infant Foods and Infant Feeding, Soy-based. *See* Also Infant Formulas, Soy-based 123, 142, 493, 570, 596, 662, 766, 923, 2045

Infant Formula / Formulas, Soy-based, Including Effects on Infant Health (Alternatives to Milk. Usually Fortified and Regulated. Since 1963 Usually Made from Soy Protein Isolates) 79, 496, 765, 840, 1023, 1057, 1102, 1146, 1254, 1263, 1349, 1356, 1435, 1593, 1645, 1701, 1703

Information, computerized. *See* Computerized Databases and Information Services, and Websites, Websites or Information on the World Wide Web or Internet

Ink for Printing–Industrial Uses of Soy Oil as a Drying Oil 35, 42, 65, 74, 78, 83, 230, 305, 344, 394, 752, 873, 1348, 1379, 1590, 2050

Innoval / Sojalpe (Affiliate of Les Silos de Valence–Valence, France) 1183, 1273, 1303, 1317, 1339, 1354, 1356, 1509

Inoculum / inocula of nitrogen fixing bacteria for soybeans. *See* Nitrogen Fixing Cultures

Insects–Pest Control. *See* also: Integrated Pest Management 82, 215, 290, 419, 1505, 1621, 1972

- Institutional feeding. *See* Foodservice and Institutional Feeding or Catering
- Integrated Pest Management (IPM) and Biological Control 1505
- Interchem Industries (Kansas). *See* Diesel Fuel, SoyDiesel, Biodiesel–Interchem
- International Institute of Tropical Agriculture (IITA) (Ibadan, Nigeria) 1107
- International Nutrition Laboratory. *See* Miller, Harry W. (M.D.) (1879-1977)
- International soybean programs. *See* INTSOY–International Soybean Program (Univ. of Illinois, Urbana, Illinois), International Institute of Tropical Agriculture (IITA) (Ibadan, Nigeria), United Nations (Including UNICEF, FAO, UNDP, UNESCO, and UNRRA) Work with Soy
- Internet. *See* Websites or Information on the World Wide Web
- Intestinal Flora / Bacteria and Toxemia–Incl. Changing and Reforming (*L. Acidophilus*, *Bifidus*, *L. Bulgaricus* etc.) 570, 1435, 1514, 1781, 2045
- Introduction of foreign plants to the USA. *See* United States Department of Agriculture (USDA)–Section of Foreign Seed and Plant Introduction
- INTSOY–International Soybean Program (Univ. of Illinois, Urbana, Illinois). Founded July 1973. Initially (from 1971) named Program for International Research, Improvement and Development of Soybeans (PIRIDS) 816, 848, 849, 1181, 1705, 1816, 1846, 2033, 2091, 2101, 2107
- Iodine number. *See* Soy Oil Constants–Iodine Number
- Iowa. *See* United States–States–Iowa
- Iowa State University / College (Ames, Iowa), and Univ. of Iowa (Iowa City) 58, 129, 288, 816, 848, 1421, 1427, 1460, 1536, 1564, 1689
- Iron Availability, Absorption, and Content of Soybean Foods and Feeds 414, 448
- Island Spring, Inc. (Vashon, Washington). Founded by Luke Lukoskie and Sylvia Nogaki 715, 723, 860, 945, 960, 979, 1090, 1150, 1179, 1269, 1509, 1995
- Isoflavone or Phytoestrogen Content of Soyfoods, Soy-based Products, Soy Ingredients, and Soybean Varieties (Esp. Genistein, Daidzein, and Glycitein) 1460, 1536, 1560, 1613, 1659, 1929
- Isoflavones. *See* Estrogens (in Plants–Phytoestrogens, Especially in Soybeans and Soyfoods), Including Isoflavones (Including Genistein, Daidzein, Glycitein, Coumestrol, Genistin, and Daidzin)
- Isoflavones in soybeans and soyfoods. *See* Estrogens, Incl. Genistein, Daidzein, etc.
- Isoflavones (Soy) Industry and Market Statistics, Trends, and Analyses–Individual Companies 1515, 1543, 1567, 1620, 1630, 1659, 1667, 1698, 1701, 1715, 1720, 1722, 1724, 1725, 1739, 1740, 1750, 1763, 1765, 1769, 1774, 1781, 1785, 1798, 1815, 1818, 1828, 1830, 1832
- Isolated soy proteins. *See* Soy Proteins–Isolates
- Israel. *See* Asia, Middle East–Israel and Judaism
- Italian recipes, soyfoods used in. *See* Europe–Western–Italy
- Ito San soybean variety. *See* Soybean Varieties USA–Ito San
- Itona (Wigan, Lancashire, England). Maker of Soymilk, Soymilk Products, Soynuts, and Meat Alternatives 746, 747, 922, 988, 1042, 1057, 1302, 1333, 1339, 1353, 1356
- Ivory Coast. *See* Africa–Côte d’Ivoire
- Jackson, James Caleb (1811-1881). American Health Reformer and Vegetarian (New York) 392, 570, 771, 2045
- Jang–Korean-Style Fermented Soybean Paste. Includes Doenjang / Toenjang / Doen Jang / Daen Chang (Soybean Miso), and Kochujang / Koch’ujang / Gochujang / Kochu Jang / Ko Chu Jang / Kochu Chang (Red-Pepper and Soybean Paste) 1536
- Janus Natural Foods (Seattle, Washington). And Granum 715
- Japan. *See* Asia, East–Japan
- Japan–Shokuhin Sogo Kenkyujo. *See* National Food Research Institute (NFRI) (Tsukuba, Ibaraki-ken, Japan)
- Japanese Overseas, Especially Work with Soy or Macrobiotics 945, 1006, 1049, 1090, 1370, 1407, 1496, 1509, 1561, 1725, 1992, 2103
- Jerky, Soy. Including Jerky-Flavored Soy Products. *See also*: Tofu, Flavored / Seasoned and Baked, Grilled, Braised or Roasted 1187, 1919
- Jerky, tofu. *See* Tofu, Flavored / Seasoned and Baked, Broiled, Grilled, Braised or Roasted
- Johannes, Kenlon. *See* Diesel Fuel, SoyDiesel, Biodiesel
- Johnson Family of Stryker, Williams County, Ohio. Including (1) Edward Franklin “E.F. Soybean” Johnson (1889-1961) of Johnson Seed Farms (Stryker, Ohio), Delphos Grain and Soya Processing Co. (Ohio), and Ralston Purina Company (Missouri); (2) Elmer Solomon Johnson (1879-1920); (3) Perhaps E.C. Johnson and Hon. Solomon Johnson (1850-1918) 62, 82, 115, 245, 558, 827
- Jonathan P.V.B.A. (Kapellen, Belgium) 1006, 1049, 1263, 1278, 1317, 1322, 1354, 1356, 1859

- Julian, Percy (African-American Organic Chemist). See also Glidden Company 1079, 1080, 1088, 1091, 1861, 1894, 1972, 2102, 2132
- Kecap, Kechap, Ketjap, Ketchup. See Soy Sauce, Indonesian Style or from the Dutch East Indies (Kecap, Kécap, Kechap, Ketjap, Kétjap)
- Kecap manis. See Soy Sauce, Indonesian Sweet, Kecap Manis / Ketjap Manis
- Kefir, soy. See Soymilk, Fermented–Soy Kefir
- Kellogg Co. (breakfast cereals; Battle Creek, Michigan). See Kellogg, Will Keith.... Kellogg Company
- Kellogg, Ella Eaton (1853-1920). Wife of Dr. John Harvey Kellogg. Battle Creek Sanitarium (Battle Creek, Michigan) 392, 570
- Kellogg, John Harvey (M.D.) (1852-1943), Sanitas Food Co., Sanitas Nut Food Co., Battle Creek Sanitarium Health Food Co., and Battle Creek Food Co. (Battle Creek, Michigan). Battle Creek Foods Was Acquired by Worthington Foods in 1960 75, 79, 142, 160, 392, 481, 482, 555, 570, 571, 736, 737, 771, 1028, 1075, 1292, 1570, 2012, 2045, 2112
- Kellogg, Will Keith (1860-1951), Kellogg's Toasted Corn Flake Co. Later Kellogg Company (of breakfast cereal fame; Battle Creek, Michigan) 481, 482, 570, 737, 771, 880, 1075, 1859, 1908, 1940, 1961, 1995, 2012, 2045
- Kerry Ingredients (Formerly the Kerry Group). Purchased Plants from Solnuts B.V. (Tilburg, The Netherlands; and Hudson, Iowa) in Jan. 2002. Name Changed to Nutriant (Jan. 2002 to 2006), Then Changed Back to Kerry 1944, 2027, 2035
- Kesp. See Meat Alternatives–Kesp (Based on Spun Soy Protein Fibers)
- Ketchup, Catsup, Catchup, Ketchop, Ketchap, Katchup, Kitjap, etc. Word Mentioned in Document 1263
- Ketjap manis. See Soy Sauce, Indonesian Sweet, Kecap Manis / Ketjap Manis
- Kibun. See Soymilk Companies (Asia)
- Kidney / Renal Function 1620
- Kikkoman Corporation (Tokyo, Walworth, Wisconsin; and Worldwide). Incl. Noda Shoyu Co. and Kikkoman International Inc., and Kikkoman Shoyu Co.. 715, 848, 945, 1509, 1546, 1709, 1871, 2027, 2033
- Kin, Yamei. See Yamei Kin (1864-1934)
- Kinako. See Roasted Whole Soy Flour (Kinako–Dark Roasted with Dry Heat, Full-Fat) and Grits
- Kinema (Whole Soybeans Fermented with *Bacillus subtilis* strains from Eastern Nepal, Darjeeling Hills, Sikkim, and South Bhutan). Occasionally spelled Kenima. Close relatives are from Northeast India are: *Aakhone*, *Akhoni*, *Akhuni* (Nagaland), *Bekang* (Mizoram), *Hawaijar* (Manipur), *Peruyyan* (Arunachal Pradesh), *Tungrymbai* (Meghalaya) 945
- King, Paul and Gail. See Soy Daily (The)
- Kloss, Jethro. See Seventh-day Adventists–Cookbooks and Their Authors
- Kloss, Jethro (1863-1946) and his Book *Back to Eden* 79, 858
- Koji (Cereal Grains {Especially Rice or Barley} and / or Soybeans Fermented with a Mold, Especially *Aspergillus oryzae*) or Koji Starter. Chinese *Qu* / Pinyin or Ch'ü / Wade-Giles 324, 810, 1407
- Korea. See Asia, East–Korea
- Koreans Overseas, Especially Work with Soy 1689, 1995, 2018
- Korean-style fermented soybean paste. See Jang–Korean-Style Fermented Soybean Paste including Doenjang and Kochujang
- Kosher / Kashrus, Pareve / Parve / Parevine–Regulations or Laws. See also: Kosher Products (Commercial) 1058, 1512
- Kosher Products (Commercial) 1355, 1357, 1359, 1398, 1556, 1582, 1647
- Kraft Foods Inc. (Work with Soy). Including Anderson Clayton, Boca Burger, and Balance Bar 254, 319, 457, 683, 696, 848, 849, 852, 871, 992, 994, 1071, 1349, 1466, 1871, 1908
- Kudzu or Kuzu (*Pueraria montana* var. *lobata*. Formerly *Pueraria lobata*, *Pueraria thunbergiana*, *Pachyrhizus thunbergianus*, *Dolichos lobatus*). For Rhodesian Kudzu Vine see *Neonotonia wightii*. See also Tropical Kudzu or Puero (*Pueraria phaseoloides*) 512, 715, 839, 2083
- Kushi, Michio (17 May 1926 to 28 Dec. 2014) and Aveline (27 Feb. 1923 to 3 July 2001)–Their Life and Work with Macrobiotics, and Organizations They Founded or Inspired 715, 1496
- Kuzu. See Kudzu or Kuzu (*Pueraria*...)
- Kyoto Food Corp. USA (Terre Haute, Indiana) 1561
- La Sierra Industries (La Sierra, California). See Van Gundy, Theodore A., and La Sierra Industries
- Lactose Intolerance or Lactase Deficiency 1570, 1741
- Land O'Lakes, Inc.. 554, 579, 683, 790, 855, 887, 896, 899, 903, 905, 934, 991, 992, 993, 1002, 1027, 1103, 1551, 1871, 1957, 2005
- Large-seeded soybeans. See Green Vegetable Soybeans–Large-Seeded Vegetable-Type or Edible Soybeans
- Latin America–Caribbean–Bermuda (A British Dependent

- Territory) 200, 1931
- Latin America–Caribbean–Cuba 83, 1714, 1796, 1920, 1935
- Latin America–Caribbean–Dominica 1106, 1464
- Latin America–Caribbean–Dominican Republic (Santo Domingo or San Domingo before 1844) 1177
- Latin America–Caribbean–French Overseas Departments–Guadeloupe, and Martinique (French West Indies). Guadeloupe (consisting of two large islands–Basse-Terre and Grande-Terre) administers 5 smaller dependencies–Marie-Galante, Les Saintes, La Désirade, St.-Barthélemy, and St. Martin (shared with Netherlands Antilles) 1464
- Latin America–Caribbean–Jamaica 867, 868, 981, 1106, 1353
- Latin America–Caribbean–Lesser Antilles–Virgin Islands (Including British Virgin Islands and Virgin Islands of the United States–St. Croix, St. John, and St. Thomas), Leeward Islands (Anguilla, Antigua and Barbuda [Including Redonda], Dominica, Guadeloupe, Montserrat, Saint Kitts [formerly Saint Christopher] and Nevis), Windward Islands (Barbados, Grenada, Martinique, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago), and Netherlands Dependencies (Including Aruba, Curaçao or Curacao, and Bonaire off Venezuela, and Saba, St. Eustatius, and southern St. Martin / Maarten in the Lesser Antilles). Note–Guadeloupe and Martinique and the five dependencies of Guadeloupe, which are French Overseas Departments in the Lesser Antilles, are also called the French West Indies, French Antilles, or Antilles françaises 1020, 1106, 1381, 1464
- Latin America–Caribbean or West Indies (General) 904, 1541, 1905
- Latin America–Caribbean–Puerto Rico, Commonwealth of (A Self-Governing Part of the USA; Named Porto Rico until 1932) 399
- Latin America–Caribbean–Saint Lucia 1106, 1464
- Latin America–Caribbean–Soybean Production, Area and Stocks–Statistics, Trends, and Analyses 1177
- Latin America–Caribbean–Trinidad and Tobago 1020, 1381
- Latin America–Central America–Costa Rica 706, 978, 981, 1320, 1381, 1969
- Latin America–Central America–Guatemala 706, 1106, 1528, 1714, 2065, 2151
- Latin America–Central America–Honduras 1342, 2065
- Latin America–Central America–Mexico 655, 880, 981, 1028, 1072, 1250, 1258, 1284, 1320, 1342, 1381, 1393, 1544, 1571, 1691, 1714, 1725, 1933, 1938, 1950, 1969, 2151
- Latin America–Central America–Mexico–Soy Ingredients Used in Mexican-Style Recipes, Food Products, or Dishes Worldwide 575, 599, 696, 722, 794, 803, 811, 818, 903, 905, 943, 998, 1263, 1345, 1346, 1349, 1358, 1365, 1451, 1582, 1729
- Latin America–Central America–Trade (Imports or Exports) of Soybeans, Soy Oil, and / or Soybean Meal–Statistics. See also Trade (International) 1544
- Latin America (General) 452, 629, 655, 870, 2027
- Latin America–South America–Argentina (Argentine Republic) 481, 655, 850, 880, 899, 981, 1055, 1104, 1212, 1214, 1231, 1285, 1320, 1503, 1539, 1544, 1566, 1762, 1772, 1940, 1946, 1952, 1954, 2011, 2048, 2064, 2071
- Latin America–South America–Argentina–Soybean Production, Area and Stocks–Statistics, Trends, and Analyses 1231, 1503, 1544
- Latin America–South America–Bolivia 2011
- Latin America–South America–Brazil, Deforestation in Amazon Basin 2037
- Latin America–South America–Brazil, Federative Republic of 481, 527, 529, 534, 539, 576, 578, 612, 655, 662, 663, 693, 703, 720, 766, 769, 786, 789, 790, 821, 850, 870, 880, 903, 912, 934, 942, 962, 981, 1002, 1009, 1041, 1051, 1055, 1081, 1093, 1104, 1164, 1212, 1214, 1231, 1302, 1320, 1381, 1456, 1473, 1503, 1539, 1544, 1566, 1699, 1700, 1757, 1762, 1764, 1772, 1781, 1834, 1852, 1877, 1880, 1886, 1909, 1940, 1946, 1952, 1954, 1957, 1963, 1997, 1998, 2004, 2007, 2011, 2017, 2037, 2048, 2052, 2064, 2071, 2134, 2156
- Latin America–South America–Brazil–Soybean Production, Area and Stocks–Statistics, Trends, and Analyses 870, 2048
- Latin America–South America–Chile (Including Easter Island) 655, 1381
- Latin America–South America–Colombia 406, 446, 447, 655, 981, 1028, 1061
- Latin America–South America–Ecuador (Including the Galapagos Islands. Formerly also called Equator, the English translation of the Spanish “Ecuador”) 655
- Latin America–South America (General) 767, 1393, 1847, 1938, 2038
- Latin America–South America–Guyana (British Guiana before 1966) 534, 577
- Latin America–South America–Paraguay 655, 1055, 1104, 1414, 1772, 1880, 2011, 2051, 2077
- Latin America–South America–Peru 406, 446, 447, 655
- Latin America–South America–Suriname (Also Surinam before 1978; Dutch Guiana before 1975) 577
- Latin America–South America–Uruguay, Oriental Republic of 481, 655, 981

Latin America–South America–Venezuela 1250

Laucks (I.F.) Co. (Seattle, Washington). Founded by Irving Fink Laucks (3 July 1882 to 9 March 1981) 42, 62, 65, 79, 82, 90, 132, 138, 146, 147, 159, 172, 242, 1079, 1080, 1109, 1421

Lauhoff Grain Co. *See* Bunge Corp. (White Plains, New York)

Lauhoff Grain Co. (Danville, Illinois). Affiliate of Bunge Corp. since June 1979 319, 335, 457, 609, 631, 651, 680, 683, 696, 790, 849, 855, 932, 1251, 1278, 1529, 1871

Laurelbrook Natural Foods (Bel Air, Maryland) 715

Lea & Perrins. *See* Worcestershire Sauce

Leaf Proteins and Leaf Protein Concentrate (LPC) As Alternative Protein Sources 607

Lecithin companies. *See* American Lecithin Corp., Lucas Meyer GmbH (Hamburg, Germany), Ross & Rowe (Yelkin Lecithin, New York City)

Lecithin–Etymology of This Term and Its Cognates / Relatives in Various Languages 1384

Lecithin–Imports, Exports, International Trade 42

Lecithin Industry and Market Statistics, Trends, and Analyses–By Geographical Region 42, 256, 957, 986, 987, 1384, 2067, 2116

Lecithin Industry and Market Statistics, Trends, and Analyses–Individual Companies 957, 986, 1091, 1212, 1344, 1384

Lecithin, Non-Soy References, Usually Early or Medical, Often Concerning Egg Yolk or the Brain 1347, 2067

Lecithin, Soy 35, 40, 42, 45, 65, 79, 82, 119, 129, 130, 134, 139, 142, 143, 149, 150, 163, 175, 179, 189, 195, 201, 207, 215, 220, 248, 254, 256, 277, 288, 289, 309, 312, 313, 319, 323, 324, 328, 337, 340, 346, 347, 349, 351, 361, 376, 391, 393, 399, 405, 411, 440, 457, 492, 503, 519, 540, 550, 557, 563, 597, 650, 683, 692, 750, 762, 768, 784, 790, 794, 839, 855, 869, 874, 884, 890, 894, 898, 903, 908, 929, 930, 942, 945, 957, 964, 965, 967, 970, 977, 985, 986, 987, 1010, 1068, 1079, 1080, 1082, 1085, 1088, 1091, 1109, 1131, 1184, 1190, 1195, 1202, 1212, 1238, 1266, 1279, 1284, 1288, 1300, 1341, 1344, 1347, 1367, 1384, 1419, 1435, 1439, 1471, 1539, 1546, 1594, 1601, 1614, 1658, 1667, 1668, 1702, 1712, 1715, 1731, 1732, 1746, 1778, 1781, 1787, 1830, 1840, 1846, 1847, 1853, 1861, 1862, 1864, 1870, 1873, 1876, 1894, 1899, 1914, 1922, 1939, 1972, 1988, 1996, 2028, 2043, 2063, 2067, 2071, 2093, 2114, 2116, 2118, 2126

Lecithin, Soy–Industrial Uses 35, 65, 143, 150, 163, 175, 189, 207, 248, 312, 328, 399, 440, 957, 987, 1041, 1079, 1091, 1347, 1614, 2067

Lectins. *See* Hemagglutinins (Lectins or Soyin)

Legislative activities. *See* American Soybean Association (ASA)–

Legislative Activities

Legume, Inc. (Fairfield, New Jersey) 860, 960, 979, 1050, 1107, 1108, 1180, 1205, 1571

Lend-Lease (Program and Administration). U.S. Program to Send Key Supplies to Overseas Allies During World War II 138, 160, 179, 452, 1070

Lens culinaris or L. esculenta. *See* Lentils

Lentils. *Lens culinaris*. Formerly: *Lens esculenta* and *Ervum lens* 602, 1365

Lever Brothers Co. *See* Unilever Corp.

Leviton, Richard. *See* Soyfoods Association of North America (SANA)

Li Yü-ying (Li Yu-ying; Courtesy Name: Li Shizeng (pinyin), Li Shih-tseng (W.-G.); Chinese Soyfoods Pioneer in France; born 1881 in Peking, died 1973 in Taipei, Taiwan) and Usine de la Caséo-Sojaïne (Les Vallées, Colombes (near Asnières), a few miles northwest of Paris, and China) 290, 324, 1049, 1109, 1182

Lifestream Natural Foods Ltd. (Vancouver then Richmond, British Columbia, Canada). And Nature's Path Foods, Inc. Both founded by Arran and Ratana Stephens 1869

Lightlife Foods, Inc. (Turners Falls, Massachusetts). Started as The Tempeh Works in Sept. 1979 by Michael Cohen in Greenfield, Massachusetts. Then renamed Tempehworks, Inc. in Sept. 1985. Acquired by ConAgra, Inc. (Omaha, Nebraska) on 14 July 2000. Acquired by Maple Leaf Foods (Ontario, Canada) on 10 March 2017 1100, 1107, 1108, 1418, 1547, 1570, 1571, 1572, 1573, 1642, 1689, 1708, 1747, 1800, 1863, 1969

Lima Bean or Limas. *Phaseolus limensis*. Formerly: *Phaseolus lunatus*. Also called Butter Bean 324

Lima N.V. / Lima Foods (Sint-Martens-Latem, Belgium; and Mezin, France). Owns Jonathan P.V.B.A. Owned by Euronature of Paris, France, since 1989. Owned by the Hain-Celestial Group since 10 Dec. 2001 1007, 1031, 1163, 1263, 1278, 1317, 1322, 1354, 1356, 1388, 1859

Linolenic Acid and Linolenate Content of Soybeans and Soybean Products. *See also* Omega-3 Fatty Acids 816, 1030, 1214, 1218

Linolenic Acid–Omega-3 (Alpha-Linolenic Acid) Fatty Acid Content of Soybeans and Soybean Products 1218

Linoleum, Floor Coverings, Oilcloth, and Waterproof Goods–Industrial Uses of Soy Oil as a Drying Oil 42, 65, 74, 139, 157, 230, 239, 248, 298, 305, 313, 344, 394, 1772

Linseed Oil, Linseed Cake / Meal, Lintseed, or the Flax / Flaxseed Plant (*Linum usitatissimum* L.) 15, 23, 26, 42, 56, 61, 64, 82, 98, 129, 143, 170, 193, 203, 204, 221, 230, 237, 239, 256, 279, 282, 284, 289, 297, 298, 299, 312, 313, 330, 363, 373, 520, 521, 618,

- 663, 671, 691, 711, 755, 759, 768, 898, 904, 934, 1033, 1075, 1101, 1151, 1396, 1436, 1447, 1632, 1858, 1907
- Lipid and Fatty Acid Composition of Soybeans (Seeds or Plant), or Soybean Products (Including Soy Oil), and Lipids in the Human Diet 1030, 1772
- Lipids. *See* Linolenic Acid–Omega-3, Linolenic Acid and Linolenate
- Lipids–Effects of Dietary Lipids (Especially Soy Oil and Lecithin) on Blood Lipids (Especially Cholesterol) 1214
- Lipolytic enzymes in the soybean. *See* Enzymes in the Soybean–Lipoxygenase and Its Inactivation
- Lipoxygenase. *See* Enzymes in the Soybean–Lipoxygenase and Its Inactivation
- Llama Toucan & Crow. *See* Stow Mills, Inc.
- Loma Linda Foods (Riverside, California). Named La Loma Foods from Feb. 1989 to Jan. 1990. Acquired by Worthington Foods in Jan. 1990 142, 445, 481, 496, 526, 538, 670, 736, 765, 771, 805, 848, 864, 868, 878, 880, 932, 991, 1023, 1278, 1294, 1381, 1427, 1476, 1509, 1859, 1871, 2156
- Loma Linda University (Loma Linda, California). Including Loma Linda Hospital (Formerly named Loma Linda Sanitarium and College of Medical Evangelists) 481, 771, 805, 1915
- Los Angeles–City and County–Work with Soyfoods, Natural / Health Foods, and / or Vegetarianism 75, 142, 225, 275, 305, 654, 691, 839, 848, 932, 949, 1026, 1128, 1187, 1278, 1349, 1478, 1496, 1665, 1725, 1828, 1829, 2156
- Low cost extrusion cookers. *See* Extruders and Extrusion Cooking: Low Cost Extrusion Cookers (LECs)
- Low-cost extrusion cookers. *See* Extruders and Extrusion Cooking, Extruders and Extrusion Cooking, Low Cost
- Lubricants, Lubricating Agents, and Axle Grease for Carts–Industrial Uses of Soy Oil as a Non-Drying Oil 65, 295, 305, 440
- Lucas Meyer GmbH (Hamburg, Germany). Founded 1973. Acquired Oct. 2000 by Degussa AG of Germany. Acquired in 2006 by Cargill 629, 658, 923, 957, 985, 991, 1042, 1384, 1431, 1463, 1546, 1712, 1778, 1846, 1847, 1853, 1861, 2116, 2118, 2120
- Lucerne / lucern. *See* Alfalfa or Lucerne
- Lukoskie, Luke. *See* Island Spring, Inc. (Vashon, Washington)
- Lupins or Lupin (Also spelled Lupine, Lupines, Lupinseed; *Lupinus albus*, *L. angustifolius*, *L. luteus*, *L. mutabilis*) 1996, 1997
- Machinery (Agricultural), Implements, Equipment, and Mechanization (Binders, Cultivators, Cutters, Harvesters, Mowers, Pickers, Planters, Reapers, Separators, Thrashers, or Threshers). *See* also: Combines and Tractors 618, 653, 1144, 1668
- Machinery, farm. *See* Combines
- Macrobiotic Cookbooks 665, 838, 839, 1018
- Macrobiotics. *See* Aihara, Herman and Cornelia–Their Life and Work, Kushi, Michio and Aveline–Their Life and Work, Ohsawa, George and Lima
- Macrobiotics–Criticisms of its Dietary Philosophy and Practice 838
- Macrobiotics. *See* also: George Ohsawa, Michio and Aveline Kushi, Herman and Cornelia Aihara 512, 665, 838, 839, 1007, 1018, 1021, 1031, 1100, 1108, 1109, 1209, 1240, 1278, 1317, 1322, 1352, 1354, 1388, 1417, 1451, 1464, 1496, 1859, 1915, 2049, 2066, 2083, 2088
- Madison Foods and Madison College (Madison, Tennessee). Madison Foods (Then a Subsidiary of Nutritional Corp.) Was Acquired by Worthington Foods in Aug. 1964 75, 79, 142, 324, 481, 736, 2156
- Mainland Express (Spring Park, Minnesota). Div. of Goods, Inc. Named Tofu, Inc. and Eastern Foods, Inc., Minneapolis, Minnesota, from 1978 to March 1989 1107
- Maize. *See* Corn / Maize
- Malnutrition, hunger, famine, and food shortages. *See* Hunger, Malnutrition, Famine, Food Shortages, and Mortality
- Malnutrition Matters (Ottawa, Ontario, Canada). Non-Profit Organization. Founded in 2000 by Frank Daller and Brian Herrigan 1969, 2065, 2068
- Mammoth Yellow soybean variety. *See* Soybean Varieties USA–Mammoth Yellow
- Manchu soybean variety. *See* Soybean Varieties USA–Manchu
- Manchuria. *See* Asia, East–Manchuria
- Manna Foods, Inc. (Scarborough, Ontario, Canada) 1479
- Manna Natural Foods (Amsterdam, The Netherlands). Named Stichting Natuurvoeding Amsterdam until 1982. Absorbed by Akwarius Almere in 1987 1006, 1049, 1182, 1263, 1269, 1356, 1388
- Map / Maps 137, 139, 187, 299, 332, 335, 715, 720, 848, 1203, 1376, 1414, 1781, 1913
- Maple Leaf Foods. *See* CanAmera Foods (Hamilton, Ontario, Canada)
- Maple Leaf Monarch or Maple Leaf Mills. *See* ADM Agri-Industries Ltd. (Windsor, Ontario, Canada)
- Margarine 35, 42, 74, 83, 123, 139, 142, 175, 206, 220, 298, 313, 324, 361, 464, 489, 526, 565, 622, 671, 709, 711, 730, 732, 752,

- 768, 849, 873, 945, 954, 957, 987, 1005, 1007, 1043, 1109, 1160, 1161, 1193, 1212, 1229, 1235, 1341, 1368, 1376, 1391, 1441, 1462, 1472, 1497, 1514, 1519, 1520, 1547, 1594, 1636, 1643, 1667
- Margarine Made with Soy 65, 110, 163, 172, 182, 217, 233, 299, 320, 328, 341, 344, 394, 399, 769, 885, 931, 995, 1055, 1059, 1101, 1108, 1329, 1330, 1364, 1379, 1439, 1614, 1741, 1823, 1873, 1894, 1907, 1957
- Margarine Made without Soy Oil 826
- Market statistics. *See* the specific product concerned, e.g. Tofu Industry and Market Statistics
- Market statistics on soybean production. *See* Soybean Production and Trade–Industry and Market Statistics,
- Market studies. *See* Industry and Market Analyses
- Marketing Association, Soybean. *See* Soybean Marketing Association (1929-1932)
- Marketing of soyfoods. *See* Individual foods, e.g., Tofu–Marketing of
- Marketing soybeans. *See* Chicago Board of Trade
- Marketing Soybeans, Market Development, and Economics (Including Futures Markets, Hedging, and Mathematical Models) 21, 74, 82, 83, 151, 155, 256, 298, 299, 316, 317, 318, 325, 384, 466, 470, 489, 522, 574, 598, 618, 716, 820, 821, 841, 1032, 1033, 1081, 1203, 1213, 1229, 1244, 1251, 1260, 1261, 1338, 1348, 1368, 1373, 1480, 1481, 1507, 1508, 1526, 1539, 1544, 1566, 1597, 2060, 2095
- Marketing–Soyfoods and Soy Products 266, 355, 398, 528, 686, 696, 733, 985, 1095
- Marusan-Ai. *See* Soymilk Companies (Asia)
- Massachusetts. *See* United States–States–Massachusetts
- McCay, Clive M. and Jeanette (Cornell Univ.) 400, 1331, 1350
- Meal or cake, soybean. *See* Soybean Meal
- Meals for Millions Foundation (Los Angeles, California), Multi-Purpose Food (MPF), and Freedom from Hunger 324, 411, 452, 497, 808, 848, 1046, 1331, 1350, 1871
- Meals, vegetarian or vegan, served at institutions. *See* Vegetarianism–Vegetarian or Vegan Meals Served at Institutions
- Meat Alternatives–Beef Alternatives, Including Meatless Beef Jerky, Chili Con Carne, Goulash, Lasagna, Meat Balls, Mince, Mincedmeat, Sloppy Joes, Spaghetti Sauce, Steak, Veal, etc. *See* also Meatless Burgers 570, 572, 686, 700, 727, 796, 799, 867, 933, 949, 1036, 1044, 1045, 1111, 1112, 1118, 1187, 1358, 1398, 1399, 1449, 1492, 1582, 1608, 1609, 1629, 1654, 1655, 1919
- Meat Alternatives–Commercial Products (Meatlike Meatless Meat, Poultry, or Fish / Seafood Analogs. *See* Also Meat Extenders) 800, 1011, 1117, 1127, 1198, 1200, 1237, 1308, 1397, 1532, 1652
- Meat alternatives companies. *See* Tofurky Company (Hood River, Oregon. Maker of Tofurky and Tempeh), Yves Veggie Cuisine (Vancouver, BC, Canada)
- Meat Alternatives–Documents About (Meatlike Meatless Meat, Poultry, or Fish / Seafood Analogs. *See* Also Meat Extenders) 541, 576, 608, 615, 639, 655, 666, 687, 689, 735, 743, 1136, 1141, 1208, 1232, 1250, 1290, 1292, 1377, 1378, 1395, 1485, 1571, 1860
- Meat Alternatives–General and Other Meatless Meatlike Products. *See* Also Meat Extenders 127, 541, 561, 610, 627, 636, 639, 655, 659, 660, 678, 686, 700, 728, 760, 785, 797, 798, 833, 859, 865, 902, 906, 945, 1206, 1367, 1465, 1898, 2110, 2112, 2131
- Meat Alternatives–Gluten-Based (Including Seitan, Mianjin / Mian Jin or Mienchin / Mien Chin) 678
- Meat Alternatives–Industry and Market Statistics, Trends, and Analyses–By Geographical Region 526, 684, 1317, 1328, 1386, 1406, 1430, 1434, 1446, 1485, 1488, 1501, 1503, 1539, 1570, 1571, 1572, 1782
- Meat Alternatives–Industry and Market Statistics, Trends, and Analyses–Individual Companies 1208, 1294, 1434, 1502, 1527, 1566, 1571, 1572, 1782
- Meat Alternatives–Kesp (Based on Spun Soy Protein Fibers). *See* Also Meat Extenders 700, 704, 743, 778, 1228, 1387
- Meat alternatives makers. *See* Garden Protein International (GPI), Tivall (Tivol)
- Meat Alternatives–Meatless Bacon, Bacon Bits, Ham, Chorizo, and Other Pork-related Products. *See* also Meatless Sausages 415, 465, 467, 497, 507, 518, 523, 525, 530, 533, 553, 554, 571, 602, 604, 609, 610, 627, 638, 646, 658, 684, 700, 714, 727, 760, 783, 845, 857, 898, 933, 1028, 1071, 1075, 1092, 1102, 1153, 1365, 1418, 1427, 1437, 1476, 1496, 1536, 1708, 1741, 1817, 1856, 1980, 2062
- Meat Alternatives–Meatless Burgers and Patties. *See* Also Meat Extenders 324, 376, 515, 618, 622, 670, 672, 714, 723, 747, 751, 763, 772, 803, 805, 834, 835, 839, 858, 910, 936, 940, 941, 945, 948, 950, 960, 1004, 1007, 1008, 1039, 1087, 1108, 1110, 1118, 1120, 1122, 1125, 1128, 1140, 1150, 1152, 1153, 1154, 1157, 1160, 1162, 1188, 1192, 1197, 1209, 1219, 1226, 1234, 1263, 1270, 1271, 1289, 1292, 1296, 1314, 1315, 1317, 1327, 1328, 1329, 1330, 1332, 1336, 1344, 1345, 1353, 1356, 1359, 1365, 1371, 1372, 1379, 1382, 1386, 1393, 1394, 1403, 1406, 1414, 1417, 1418, 1425, 1429, 1430, 1433, 1434, 1437, 1441, 1446, 1447, 1476, 1484, 1485, 1487, 1488, 1491, 1493, 1496, 1500, 1501, 1502, 1503, 1505, 1517, 1518, 1520, 1521, 1525, 1527, 1533, 1534, 1536, 1539, 1554, 1555, 1557, 1558, 1566, 1567, 1570, 1572, 1580, 1582, 1593, 1596, 1618, 1642, 1644, 1647, 1648, 1653, 1664, 1665, 1667, 1681, 1703, 1708, 1715, 1741, 1771, 1782, 1783, 1786, 1787, 1799, 1817, 1848, 1853, 1859, 1882, 1915, 1937, 1964, 1967, 1973, 1992, 2027, 2082, 2100, 2156

- Meat Alternatives–Meatless Chicken, Goose, Duck, and Related Poultry Products. See also Meatless Turkey 465, 466, 467, 526, 533, 570, 627, 684, 727, 845, 861, 864, 933, 1036, 1077, 1092, 1228, 1294, 1476, 1570, 1610, 1628, 1817, 1985, 2056, 2082
- Meat Alternatives–Meatless Fish, Shellfish, and Other Seafood-like Products 465, 526, 570, 684, 1180, 1365, 1435, 1531, 1570, 1890, 2045, 2062
- Meat Alternatives–Meatless Sausages (Including Frankfurters, Hot Dogs, Wieners, Salami, Pepperoni, Breakfast Pork Sausage, etc.). See Also Meat Extenders 247, 465, 466, 572, 573, 622, 672, 714, 724, 726, 746, 747, 751, 760, 780, 803, 845, 851, 960, 1040, 1076, 1087, 1099, 1107, 1110, 1138, 1160, 1161, 1180, 1197, 1263, 1270, 1271, 1292, 1294, 1328, 1345, 1353, 1360, 1361, 1365, 1390, 1426, 1433, 1435, 1441, 1452, 1469, 1476, 1520, 1536, 1555, 1556, 1582, 1619, 1656, 1665, 1708, 1741, 1817, 1858, 1915, 1937, 1967, 1992, 2062, 2082, 2100
- Meat Alternatives–Meatless Turkey 415, 467, 1429, 1914
- Meat Alternatives or Substitutes, Meatless or Meatlike Products–Etymology of This Term and Its Cognates / Relatives in Various Languages 1778
- Meat Alternatives–Quorn (Based on Mycoprotein). See Also Meat Extenders 1228, 1387
- Meat Alternatives (Traditional Asian)–Ganmodoki/Gammodoki and Hiryozu (Deep-Fried Tofu Burgers and Treasure Balls) 376, 945, 1007, 2156
- Meat Products Extended with Soy Protein, or Meat Extenders (Marketed as Such) 64, 104, 160, 247, 253, 462, 467, 533, 575, 584, 587, 610, 611, 613, 615, 617, 619, 625, 636, 638, 643, 646, 651, 655, 658, 661, 666, 679, 684, 696, 699, 748, 757, 788, 811, 814, 868, 943, 980, 1016, 1102, 1141, 1166, 1188, 1232, 1250, 1262, 1349, 1377, 1435, 1456, 1466, 1530, 1659, 1698, 1729, 1942, 2154
- Meatless burgers. See Vegetarian / Meatless Burgers
- Media, Popular Articles on Soyfoods in Europe, or Related to Europeans in Asia 1031, 1037, 1099, 1126
- Media, Popular Articles on Soyfoods in the USA, Canada, or Related to North Americans in Asia 74, 83, 466, 533, 610, 613, 701, 760, 791, 808, 818, 843, 911, 982, 990, 1617
- Medical aspects of soybeans. See Cognitive / Brain Function. Including Alzheimer’s Disease, Diabetes and Diabetic Diets, Kidney / Renal Function, Menopause–Relief of Unpleasant Menopausal Symptoms, Osteoporosis, Bone and Skeletal Health
- Medical aspects of vegetarian diets. See Vegetarian Diets–Medical Aspects
- Medical / Medicinal-Therapeutic Uses / Effects / Aspects (General) 779, 969, 975, 987, 1346, 1620, 1635
- Medicine–Alternative–Incl. Acupuncture, Chiropractic, Drugless Doctors, Herbal Therapy, Holistic / Wholistic Medicine, Homeopathy, Natural Hygiene, Natural Medicine, Naturopathy, Preventive / Preventative Medicine, 1346, 1618, 1620
- Membrane Technology Processes–Microfiltration (MF), Ultrafiltration (UF, including Diafiltration), Reverse Osmosis (RO–also known as hyperfiltration, HF), Electrodialysis (ED), and Nanofiltration (NF) 595, 1179, 1273, 1317, 1781
- Menarche. See Effect of Soy on Development
- Menopause–Relief of Unpleasant Menopausal Symptoms, Such as “Hot Flashes” and “Night Sweats” 1515, 1536, 1617, 1642, 1645, 1662, 1671, 1701, 1708, 1715, 1733, 1734, 1739, 1741, 1742, 1781, 1785, 1818, 1832, 1858, 1868, 1869, 2042, 2087
- Mesoamerica. See Latin America–Central America
- Messina, Mark (PhD) and Virginia (MPH, RD) (Nutrition Matters, Inc., Port Townsend, Washington state; moved to Pittsfield, Massachusetts in early 2016). Mark is one of the world’s leading experts on soy nutrition 1482, 1524, 1560, 1565, 1567, 1573, 1642, 1645, 1649, 1662, 1689, 1722, 1724, 1733, 1739, 1759, 1760, 1767, 1787, 1832, 1836, 1865, 1921, 1934, 1969, 1978, 1999, 2014, 2022, 2034, 2042, 2044, 2058, 2075, 2089, 2090
- Mexican-style recipes, soyfoods used in. See Latin America, Central America–Mexico
- Mexico. See Latin America, Central America–Mexico
- Mexico and Central America, soyfoods movement in. See Soyfoods Movement in Mexico and Central America
- Meyer, Frank N. (1875-1918). USDA Plant Explorer in Asia 2102, 2132
- Michigan. See United States–States–Michigan
- Microalgae. See Single Cell Proteins (Non-Photosynthetic)
- Microbial Proteins (Non-Photosynthetic Single-Cell Proteins, Including Fungi [Mycoproteins such as Quorn], Yeast, and Bacteria) 607, 1228, 1387, 1431
- Microbiology and fermentation. See Fermented Soyfoods and Their Fermentation
- Microscopic analysis and microscopy. See Soybean–Morphology, Structure, and Anatomy of the Plant and Its Seeds as Determined by Microscopy or Microscopic Examination
- MicroSoy Corporation (Jefferson, Iowa; Osaka, Japan). Formerly Nichii Co. and MYCAL Corp.. 1370, 1414, 1689, 1747, 1992, 2033, 2091, 2101, 2107
- Middle America. See Latin America, Central America, and Latin America, Caribbean or West Indies
- Migros & Conserves Estavayer (Estavayer-le-Lac, Switzerland)

1006, 1008, 1049, 1050, 1108, 1317, 1356

Miles Laboratories. *See* Worthington Foods, Inc. (Worthington, Ohio)

Milk, almond. *See* Almond Milk and Cream. Also—Almonds Used to Flavor Soymilk, Rice Milk, etc.

Milk, coconut / cocoanut. *See* Coconut Milk and Cream

Milk, Non-Dairy, Non-Soy Milks and Creams Made from Nuts, Grains, Seeds, or Legumes, Such as Brazil Nuts, Cashews, Coconuts, Filberts, Hazelnuts, Hemp Seeds, Pecans, Pine Nuts, Pumpkin Seeds, Sunflower Seeds, Walnuts, etc. *See also:* Almond Milk, Amazake / Rice Milk, Peanut / Groundnut Milk, Sesame Milk 570, 838, 1571, 1914, 2045

Milk—Problems with Cow's Milk as a Food, Incl. Use of Bovine Growth Hormone, Price Regulation, etc. (*See also:* Soymilk) 1057, 1486, 1570, 1741

Milk, rice. *See* Rice Milk (Non-Dairy)

Milk, soy. *See* Soymilk

Miller, Harry W. (M.D.) (1879-1977) and International Nutrition Laboratory (Mt. Vernon, Ohio) 137, 139, 142, 153, 198, 324, 511, 558, 578, 771, 848, 925, 1028, 1081, 1109, 1427, 2102, 2132, 2156

Minerals. *See* Aluminum in Soybeans and Soyfoods, Calcium Availability, Absorption, and Content of Soy

Minerals (General) 214, 324, 359, 451, 997

Minerals in a vegetarian diet. *See* Vegetarian Diets—Nutrition / Nutritional Aspects—Minerals

Mink, Foxes and Other Fur-Bearing Animals Fed Soybeans, Soybean Cake or Meal, or Soy Protein Products as Feed to Make Fur 695, 1764

Minnesota. *See* United States—States—Minnesota

Miso companies (USA). *See* American Miso Co. (Rutherfordton, North Carolina), Miyako Oriental Foods (Baldwin Park, California), South River Miso Co. (Conway, Massachusetts)

Miso—Imports, Exports, International Trade 1031, 1388

Miso in Second Generation Products, Documents About 1919

Miso Industry and Market Statistics, Trends, and Analyses—By Geographical Region 911, 945, 1090, 1509

Miso Industry and Market Statistics, Trends, and Analyses—Individual Companies 945, 1090, 1509

Miso (Japanese-style Soybean Paste). *See also:* Jiang—for Chinese-style Miso. Jang—for Korean-style Miso. And Taucho, Tauceo, Tau Chiow, Taoco, Tao-Tjo, Taotjo, Taocho, or Taoetjo for Indonesian-

style Miso (Soybean Chiang, or Jiang [pinyin]) 79, 375, 376, 382, 496, 565, 571, 665, 688, 715, 723, 791, 802, 810, 812, 838, 839, 840, 856, 860, 869, 897, 902, 911, 922, 924, 942, 945, 973, 995, 1000, 1004, 1017, 1018, 1021, 1031, 1050, 1055, 1056, 1059, 1090, 1100, 1107, 1108, 1109, 1120, 1146, 1161, 1180, 1201, 1202, 1218, 1220, 1240, 1263, 1283, 1336, 1343, 1346, 1366, 1388, 1400, 1407, 1408, 1420, 1421, 1422, 1456, 1464, 1509, 1524, 1536, 1553, 1559, 1560, 1601, 1618, 1635, 1644, 1665, 1678, 1684, 1689, 1708, 1731, 1732, 1733, 1734, 1735, 1736, 1741, 1742, 1770, 1772, 1788, 1789, 1790, 1823, 1836, 1888, 1915, 1916, 1937, 1941, 1964, 1971, 1988, 1992, 2018, 2025, 2047, 2050, 2061, 2062, 2066, 2082, 2083, 2087, 2088, 2089, 2090, 2092, 2095, 2097, 2104, 2113, 2130

Miso Soup—Mainly Japanese 571, 665, 1017, 1018, 1120, 1150, 1162, 1263, 1283, 1686, 1790, 1919, 2062, 2066

Miso, soybean—Korean-style. *See* Jang—Korean-Style Fermented Soybean Paste including Doenjang and Kochujang

Miso, Used as an Ingredient in Commercial Products 1196

Missouri. *See* United States—States—Missouri

Missouri Farmers Association (MFA), Mexico and Columbia, Missouri—Cooperative Soybean Crushers 209, 211, 242, 457, 579, 683, 790, 827, 899, 903, 905, 1066, 1144

Mitoku—Natural Foods Exporter and Distributor (Tokyo, Japan) 1021, 1150, 1388, 2066

Miyako Oriental Foods (Baldwin Park, California) 1464

Mizono family. *See* Azumaya, Inc. (San Francisco, California)

Mochi. *See* Rice-Based Foods—Mochi

Molasses, soy. *See* Soy Molasses or Soy Solubles

Monosodium glutamate. *See* MSG

Monsanto Co. (St. Louis, Missouri) and its HybriTech Seed International subsidiary. Acquired Jacob Hartz Seed Co. in April 1983. Acquired Asgrow in April Feb. 1997. Merged with Pharmacia & Upjohn on 31 March 2000 and was renamed Pharmacia Corp 209, 402, 527, 529, 534, 539, 577, 578, 1278, 1551, 1621, 1645, 1689, 1692, 1696, 1701, 1703, 1704, 1725, 1747, 1749, 1787, 1825, 1846, 1851, 1859, 1865, 1867, 1902, 1921, 2003, 2012, 2026, 2034, 2035, 2044, 2064, 2107, 2116, 2122, 2128

Monticello Co-operative Soybean Products Co. (Monticello, Piatt Co., Illinois). Later also called Piatt County Soybean Cooperative Co., and Viobin (Maker of Wheat Germ Oil) 15, 129, 218, 750

Moorman Manufacturing Co. *See* Quincy Soybean Products Co. (Quincy, Illinois)

Morinaga Nutritional Foods, Inc., and Morinaga Nyûgyô (Torrance, California, and Tokyo, Japan) 723, 1099, 1107, 1150, 1160, 1205, 1509, 1547, 1567, 1588, 1617, 1619, 1645, 1648, 1649, 1669, 1709, 1725, 1799, 1919, 2025, 2156

Morphology, soybean. *See* Soybean–Morphology, Structure, Anatomy, Soybean–Morphology, Structure, and Anatomy

Morse, William Joseph (1884-1959, USDA Soybean Expert) 39, 79, 137, 139, 153, 290, 324, 558, 849, 925, 1075, 1081, 1348, 2102, 2132

Morse, W.J., on expedition to East Asia. *See* Tofu Dorsett-Morse Expedition to East Asia (1929-1931)

Motion Pictures or References to Motion Pictures. Also called Movies, Films, or Documentaries 233, 885, 972

Movies or films. *See* Motion Pictures

MSG (Monosodium Glutamate, the Sodium Salt of Glutamic Acid) 198, 324, 571, 780, 1138, 1539, 1581, 1593, 2029

Mull-Soy. *See* Borden Inc.

Mung Bean / Mungbean and Mung Bean Sprouts. *Vigna radiata* L. Formerly *Phaseolus aureus*. Also called Green Gram. Chinese (Mandarin)–Lüdou. Chinese (Cantonese)–Dau Ngah / Dow Ngaah. Japanese–Moyashi. Indonesian: Kacang / katjang + hijau / ijo / hidjau. German–Buschbohne. French–Haricot Mungo 767, 1004, 1056, 1183, 1388, 1464

Muso Shokuhin–Natural Foods Exporter and Distributor (Osaka, Japan) 839, 1050, 1150, 1388

Mycoprotein used in meal alternatives. *See* Meat Alternatives–Quorn (Based on Mycoprotein)

Myths of soybean history–debunking / dispelling. *See* History of the Soybean–Myths and Early Errors Concerning Its History

Naphtha solvents for extraction. *See* Solvents

Nashville Agricultural and Normal Institute (NANI). *See* Madison Foods and Madison College

Nasoya Foods, Inc. (Leominster, Massachusetts). Subsidiary of Vitasoy Since Aug. 1990 945, 960, 979, 1090, 1141, 1150, 1167, 1205, 1269, 1297, 1622, 1709, 1725, 1800, 1859, 1863, 2129, 2156

National Biodiesel Board (NBB). Formerly named National Soy Fuels Advisory Committee (NSFAC) (May 1992–Dec. 1992) and National SoyDiesel Development Board (NSDB) (Dec. 1992–Sept. 1994). *See* also Soy Diesel Fuel, SoyDiesel, or Biodiesel 1779, 1923, 2035

National Center for Agricultural Utilization Research (NCAUR) (USDA-ARS) (Peoria, Illinois). Named Northern Regional Research Laboratory prior to July 1976. Named Northern Regional Research Center prior to 28 Dec. 1991 137, 139, 153, 159, 175, 195, 198, 206, 242, 245, 283, 310, 313, 338, 361, 375, 402, 449, 465, 476, 532, 542, 545, 554, 565, 569, 588, 589, 595, 603, 634, 696, 706, 715, 816, 825, 900, 925, 938, 945, 994, 1027, 1082, 1083, 1204, 1251, 1331, 1332, 1350, 1407, 1421, 1435, 1466, 1480, 1522,

1563, 1584, 1871, 1996

National Food Research Institute (NFRI) (Tsukuba, Ibaraki-ken, Japan) 1105, 1264

National Nutritional Foods Association (NNFA). *See* Health Foods Industry–Trade Associations–National Nutritional Foods Association (NNFA)

National Oilseed Processors Assoc. (NOPA) (National Soybean Oil Manufacturers Association from May 1930 to 1935; National Soybean Processors Assoc. (NSPA) from June 1936 to July 1989. Washington, DC. Including Soy Flour Assoc. [1936-1949], Soya Food Research Council [1936+], and Soybean Nutritional Research Council [1937+]) 27, 28, 29, 42, 62, 82, 90, 94, 95, 96, 97, 115, 116, 132, 134, 137, 139, 153, 169, 172, 175, 188, 191, 192, 195, 197, 201, 206, 234, 245, 253, 254, 266, 267, 269, 283, 310, 319, 331, 338, 361, 419, 457, 499, 540, 556, 557, 559, 566, 586, 610, 683, 690, 691, 717, 790, 826, 827, 885, 903, 971, 972, 1109, 1266, 1276, 1279, 1702, 1840, 1965, 1991, 2136, 2137, 2149

National Soybean Crop Improvement Council. Organized March 1948 301, 319, 402, 457, 683, 790, 816, 826, 827, 903

National Soybean Research Laboratory (NSRL, University of Illinois, Urbana, Illinois) 1538, 1540, 1943, 1979, 2053, 2107

National SoyDiesel Development Board or National Soy Fuels Advisory Committee. *See* National Biodiesel Board

Natto, Daitokuji / Daitoku-ji natto. *See* Daitokuji Fermented Black Soybeans–from Japan

Natto from Nepal. *See* Kinema

Natto from Thailand. *See* Thua-nao

Natto, Hamana. *See* Hamanatto Fermented Black Soybeans–from Japan

Natto Industry and Market Statistics, Trends, and Analyses–By Geographical Region 1090, 1509

Natto (Whole Soybeans Fermented with *Bacillus natto*) 376, 382, 496, 791, 810, 902, 942, 945, 1056, 1090, 1146, 1202, 1240, 1338, 1366, 1421, 1509, 1559, 1635, 1678, 1731, 1736, 1791, 1888, 1937, 1988, 2050, 2105

Natto, Yukiwari. Made in Japan by Mixing Itohiki Natto with Rice Koji and Salt, then Aging the Mixture 810

Natural and Health Foods Retail Chains or Supermarkets: Alfalfa's (Mark Retzlöff, Boulder, CO), Bread & Circus (Tony Harnett, MA), Frazier Farms (Bill Frazier, Southern Calif.), Fresh Fields (Rockville, MD), GNC = General Nutrition Corp. (Pittsburgh, PA), Mrs. Gooch's (Los Angeles, CA), Nature Foods Centres (Wilmington, MA; Ronald Rossetti), Trader Joe's, Wild Oats 848, 932, 998, 1671, 1883, 1892, 1973, 1974

Natural Foods Distributors and Master Distributors (Canada). *See*

- Lifestream Natural Foods Ltd. (Vancouver then Richmond, British Columbia, Canada), Manna Foods, Inc. (Scarborough, Ontario, Canada)
- Natural Foods Distributors and Master Distributors (USA). *See* Arrowhead Mills (Hereford, Deaf Smith County, Texas), Eden Foods, Inc. (Clinton, Michigan). Founded 4 Nov. 1969, Erewhon (Boston, Massachusetts), Essene Traditional Foods (Philadelphia, Pennsylvania), Great Eastern Sun and Macrobiotic Wholesale Co. (North Carolina), Health Valley (Los Angeles, then Montebello, California), Janus Natural Foods (Seattle, Washington), Laurelbrook Natural Foods (Bel Air, Maryland), Stow Mills, Inc. (Brattleboro, Vermont) Lama Trading Co., Tree of Life (St. Augustine, Florida), United Natural Foods, Inc. (UNFI), Well (The), Pure & Simple, and New Age Distributing Co. (San Jose, California), Wessanen, Westbrae Natural Foods, Inc. (Berkeley, California)
- Natural Foods Distributors or Master Distributors in the USA—General and Other Smaller Companies: Cliffrose, Shadowfax 858
- Natural Foods Exporter and Distributor (Japan). *See* Mitoku (Tokyo, Japan)
- Natural Foods Exporters and Distributors (Japan). *See* Muso Shokuhin (Osaka, Japan)
- Natural Foods Movement and Industry in the United States (Started in the Mid-1950s) 672, 723, 839, 858, 860, 960, 1021, 1050, 1107, 1108, 1150, 1294, 1320, 1343, 1352
- Natural Foods Restaurants in the United States (Started in the 1950s and 1960s) 715
- Natural Products Association (NPA). *See* Health Foods Industry—Trade Associations—National Products Association
- Natural / Vegetarian Food Products Companies. *See* American Natural Snacks, Boca Burger, Fantastic Foods, Gardenburger
- Near East. *See* Asia, Middle East
- Nestlé (Nestle—The World's Biggest Food Group) 681, 703, 719, 720, 1042, 1258, 1387, 1431, 1456, 1529, 1606
- Netherlands. *See* Europe, Western—Netherlands
- New England Soy Dairy. *See* Tomsun Foods, Inc.
- New Uses Movement (USA, starting 1986)—Industrial Uses of Soybeans. Successor to the Farm Chemurgic Movement (1930s to 1950s). And Value-Added Industrial Applications. *See also*: Research & Development Centers—USDA-ARS National Center for Agricultural Utilization Research (Peoria, Illinois) 1298, 1480, 1481, 2095
- New York. *See* United States—States—New York
- New York State Agric. Experiment Station (Geneva, NY). *See* Cornell University (Ithaca, New York)
- New Zealand. *See* Oceania—New Zealand
- Nichii Company. *See* Whole Dry Soybean Flakes
- Nigeria. *See* Africa—Nigeria
- Nisshin Oil Mills, Ltd. (Tokyo, Japan) 576, 1041
- Nitragin Inoculant and The Nitragin Company 320, 324
- Nitrogen Fixation, Inoculum, Inoculation, and Nodulation by Rhizobium Bacteria 94, 320, 324, 361, 688, 791, 925, 958, 959, 1033, 1366
- Nitrogen Fixing Cultures / Inoculants (Commercial and Noncommercial from government), of Rhizobium Bacteria for Soybeans (Culture / Inoculant / Inoculum / Inocula) 320, 324, 361, 435
- Noble & Thoerl GmbH (Hamburg, Germany) 1195, 1862
- Nodulation. *See* Nitrogen Fixation, Inoculum, Inoculation, and Nodulation by Rhizobium Bacteria
- Non-Dairy milks. *See* Rice Milk, Almond Milk, Coconut Milk, Sesame Milk, etc
- Non-dairy, non-soy milk. *See* Milk, Non-Dairy, Non-Soy Milks and Creams Made from Nuts, Grains, Seeds, or Legumes
- Non-dairy products (so-called) made from casein or caseinates. *See* Casein or Caseinates—Problems in So-Called Non-Dairy Products
- Nordquist, Ted. *See* WholeSoy & Co. (subsidiary of TAN Industries, Inc., California)
- North America. *See* United States of America, and Canada. For Mexico, *see* Latin America, Central America
- North Carolina. *See* United States—States—North Carolina
- North Iowa Cooperative Processing Association, (Manly, Iowa). Opened Sept. 1944. Renamed North Iowa Soybean Cooperative in 1962. *See also* Glenn Pogeler 172, 209, 242, 254, 319, 457, 579, 905
- Northern Regional Research Center (NRRC) (Peoria, Illinois). *See* National Center for Agricultural Utilization Research (NCAUR) (USDA-ARS)
- Northern Soy, Inc. (Rochester, New York) 715, 945, 1090, 1709
- Northrup King Co. A subsidiary of Sandoz (1995), then Novartis (1996), then Syngenta (2001) 225, 1725
- Noted personalities—vegetarians. *See* Vegetarian Celebrities—Noted Personalities and Famous People
- Novartis, Including Novartis Seeds. Novartis was formed in March 1996 by the Merger of Sandoz AG and Ciba-Geigy (both based in

Basel, Switzerland) 1703, 1725

Nuclear Power, Weapons, War, Fallout, or Radioactivity Worldwide 1186, 1396

Nut Butters, Non-Soy. Including Butter Made from Nuts or Seeds, Such as Brazil Nuts, Cashews, Coconuts, Filberts, Hazelnuts, Hickory Nuts, Hemp Seeds, Macadamia Nuts, Pecans, Pignolias, Pine Nuts, Pistachios, Pumpkin Seeds, Sunflower Seeds, Walnuts, etc. See also: Almond Butter (from 1373), Peanut Butter (from 1896), Sesame Butter, Soynut Butter 839

Nut milk or cream. *See* Milk–Non-Dairy Milks and Creams Made from Nuts

Nutraceuticals. *See* Functional Foods or Nutraceuticals

Nutrition. *See* Carbohydrates (General). *See* also Starch, Dietary Fiber, and Oligosaccharides (Complex Sugars), Carbohydrates–Dietary Fiber, Carbohydrates–Effects of Dietary Carbohydrates (Especially Fiber and Saponins) on Blood Lipids (Especially Cholesterol), Chemical / Nutritional Composition or Analysis, Claim or Claims of Health Benefits–Usually Authorized by the FDA, Concerns about the Safety, Toxicity, or Health Benefits of Soy in Human Diets, Diet and Breast Cancer Prevention, Diet and Cancer. *See* also–Vegetarian Diets–Medical Aspects–Cancer, Diet and Prostate Cancer Prevention, Flatulence or Intestinal Gas, Functional Foods or Nutraceuticals, Human Nutrition–Clinical Trials, Intestinal Flora / Bacteria, Isoflavone or Phytoestrogen Content of Soyfoods, Soy-based Products,, Lactose Intolerance, Lipid and Fatty Acid Composition of Soy, Lipids–Effects on Blood Lipids, Minerals (General), Protein–Effects on Blood Lipids, Protein Quality, and Supplementation, Protein Resources and Shortages, and the “World Protein Crisis / Gap / Problem” of 1950-1979, Toxins and Toxicity in Foods and Feeds, Toxins and Toxicity in Foods and Feeds–General, Toxins and Toxicity in Foods and Feeds–Microorganisms, Especially Bacteria that Cause Food Poisoning, Toxins and Toxicity in Foods and Feeds–Trichloroethylene Solvent and the Duren / Dueren Disease or Poisoning of Cattle / Ruminants, Vitamin E (Tocopherol), Vitamins (General), Vitamins B-12 (Cyanocobalamin, Cobalamins)

Nutrition–Acid-Base Balance in Diet and Health, or Individual Foods, or Acid-Alkaline Ash in Diet, or Acid-Forming and Base-Forming Elements in Foods 324, 571, 1496

Nutrition bars. *See* Bars–Energy Bars or Nutrition Bars Made with Soy

Nutrition–Biologically active phytochemicals. *See* Antioxidants, Phytic Acid, Phytates, and Phytin, Reproductive / Fertility Problems, Saponins, Trypsin / Protease / Proteinase Growth Inhibitors

Nutrition–Biologically Active Phytochemicals–Allergens, Allergy / Allergies, and Allergic Reactions Caused (or Remedied) by Soybeans, Soyfoods, Peanuts, or Animal Milks 198, 511, 578, 896, 1741, 1742, 1764, 1888, 2093

Nutrition–Biologically active substances. *See* Antinutritional

Factors (General), Goitrogens and Thyroid Function, Hemagglutinins (Lectins or Soyin)

Nutrition–Carbohydrates. *See* Oligosaccharides

Nutrition et Nature (Revel near Toulouse, France). Founded in June 1982 as SOY (Cerny, France). Named Nutrition et Soja, Div. of Nutrition et Santé from 1 Aug. 1994 until 1 Jan. 2011 1004, 1006, 1042, 1049, 1183, 1322, 1339, 1354, 1356, 1509, 1645, 1646, 1859

Nutrition (General) 72, 79, 87, 149, 386, 390, 438, 580, 609, 629, 678, 687, 701, 716, 717, 776, 777, 803, 830, 937, 1000, 1121, 1162, 1218, 1250, 1258, 1272, 1617, 1761, 1867, 1868, 1870, 1883, 1897, 1908, 1911, 1916, 1924, 1948, 1949, 1951, 1985, 1987, 1999, 2014, 2022, 2034, 2047, 2089, 2090

Nutrition–Lipids. *See* Linolenic Acid and Linolenate, Sterols or Steroid Hormones

Nutrition–Medical Aspects. *See* Cancer Preventing Substances in Soy, Cardiovascular Disease, Especially Heart Disease and Stroke, Cognitive / Brain Function. Including Alzheimer’s Disease, Diabetes and Diabetic Diets, Kidney / Renal Function, Medical / Medicinal–Therapeutic Uses / Aspects (General), Menopause–Relief of Unpleasant Menopausal Symptoms, Osteoporosis, Bone and Skeletal Health

Nutrition–Minerals. *See* Aluminum in Soybeans and Soyfoods, Calcium Availability, Absorption, and Content of Soy

Nutrition–Protein. *See* Amino Acids and Amino Acid Composition and Content

Nutrition–Protein–Early and basic research. *See* Protein–Early and Basic Research

Nutritional aspects of vegetarian diets. *See* Vegetarian and Vegan Diets–Nutrition / Nutritional Aspects

Nuts made from roasted soybeans. *See* Soynuts

Obituaries, Eulogies, Death Certificates, and Wills. *See* Also: Biographies, Biographical Sketches and Autobiographies 91, 221, 307, 468, 745, 1225, 1227, 1604, 2069, 2123, 2124

Oceania–Australia, Commonwealth of (Including Tasmania, Cocos (Keeling) Islands, Christmas Island, Coral Sea Islands Territory, Norfolk Island, Territory of Ashmore and Cartier Islands, and Australian Antarctic Territory) 481, 612, 642, 655, 661, 736, 771, 772, 878, 880, 934, 1073, 1074, 1075, 1078, 1104, 1147, 1205, 1231, 1282, 1292, 1320, 1367, 1381, 1391, 1414, 1498, 1553, 1606, 1642, 1734, 1739, 1845, 1858, 2027

Oceania (General, Also Called Australasia, or Australia and Islands of the Pacific / Pacific Islands) 1772

Oceania–New Zealand–Including Stewart Island, Chatham Islands, Snares Islands, Bounty Islands, and Tokelau (formerly Union Islands) 481, 655, 771, 772, 1292, 1707, 1748, 1753, 1758, 1815, 2027

Oceania–Papua New Guinea, Independent State of (British New Guinea from 1888, then Territory of Papua and New Guinea until Sept. 1975. The northeast was German New Guinea from 1884 to 1914, then Trust Territory of New Guinea) 1292, 1369

Oceania–Soybean Production, Area and Stocks–Statistics, Trends, and Analyses 642, 1231

Oelmuehle Hamburg AG (Hamburg, Germany). Founded in 1965 by incorporating Stettiner Oelwerke AG (founded 1910), Toepffer's Oelwerke GmbH (founded 1915), and Hansa-Muehle AG (founded 1916 as Hanseatische Muehlenwerke AG) 15, 42, 58, 129, 175, 218, 220, 288, 289, 300, 750, 790, 903, 957, 983, 985, 987, 1143, 1169, 1214, 1266, 1347, 1439, 1503, 1702, 1710, 1781, 1862, 1873, 1894, 2011, 2024, 2067, 2085

Off flavors. *See* Flavor Taste Problems

Ohio. *See* United States–States–Ohio

Ohio Miso Co. (Founded in 1979 by Thom Leonard and Richard Kluding). *See* South River Miso Co. (Conway, Massachusetts)

Ohio Valley Soybean Cooperative (Henderson, Kentucky). Started June 1941 159, 209, 242, 254, 319, 579

Ohsawa, George and Lima–Their Life and Work with Macrobiotics (Also Sakurazawa Nyoichi, or Georges Ohsawa) 839, 1018

Oil or meal, soy, breeding or selection for. *See* Breeding or Selection of Soybeans for Use as Soy Oil or Meal

Oil, soy. *See* Soy Oil

Oil, soy, constants. *See* Soy Oil Constants

Oil, soy–industrial uses. *See* Industrial Uses of Soy Oil

Oil, soy–industrial uses of. *See* Industrial Uses of Soy Oil, Paint Manufacturers' Association of the U.S., Incl. Henry A. Gardner, L.P. Nemzek and Industrial Uses of Soybeans, Steroids, Steroid Hormones, and Sterols

Oil, soy, industrial uses of, as a drying oil. *See* Industrial Uses of Soy Oil

Oil, soy–industrial uses of, as a drying oil. *See* Binder for Sand Foundry Cores, Industrial Uses of Soy Oil, Linoleum, Floor Coverings, Oilcloth, and Waterproof Goods, Resins, Plastics, and Plasticizers (Such as Epoxidized Soy Oil–ESO), Rubber Substitutes or Artificial / Synthetic Rubber (Factice)

Oil, soy–industrial uses of, as a hydrogenated oil. *See* Candles, Crayons, and Soybean Wax

Oil, soy–industrial uses of, as a non-drying oil. *See* Adjuvants, Carriers, and Surfactants for Pesticides, Herbicides, and Other Agricultural Chemicals, Diesel Fuel, SoyDiesel, Biodiesel or Artificial Petroleum, Dust Suppressants and Dust Control,

Explosives Made from Glycerine, Lubricants, Lubricating Agents, and Axle Grease for Carts, Release or Curing Agents for Concrete or Asphalt, Industrial Solvents, Hydraulic Fluids, and Other Minor or General Uses, Soaps or Detergents

Okara. *See* Fiber–Okara or Soy Pulp

Okinawa / Ryukyu Islands / Great LooChoo (Part of Japan Since 1972) 1646, 1916

Oligosaccharides (The Complex Sugars Raffinose, Stachyose, and Verbascose) 1179, 1187, 1435, 1599, 1601, 1611, 1764, 1781, 1988

Olive Oil 300, 399, 769, 1250, 1907, 2013

Olive / Olives (*Olea europaea*). *See* also Olive Oil 1180

Omega-3 fatty acids. *See* Linolenic Acid–Omega-3 Fatty Acid Content of Soybeans and Soybean Products

Ontario. *See* Canadian Provinces and Territories–Ontario

Ontario Soybean Growers (Canada: Name Changes–Ontario Soybean Growers Association, Nov. 1946 to 1949. Ontario Soybean Growers' Marketing Board, 1949 to 1989. Ontario Soybean Growers' Marketing Board, 1989 to 1 Dec. 1999). Merged into Grain Farmers of Ontario 2010 Jan 1 361, 598, 618, 829, 1203, 1338, 1373, 1374, 1375, 1379, 1458, 1461, 1507, 1508, 1600, 1645, 1679, 1709, 1710, 1718, 1727, 1728, 1791, 1846, 1850, 1872, 1887, 1945, 2074

Organic Farming and Gardening (General; Part of Natural Foods Movement). *See* also: Organic Soybean Production (Commercial). *See* also: Soybean Production: Organically Grown Soybeans or Soybean Products in Commercial Food Products 571

Organic Soybean Production (Commercial). *See* also: Soybean Production: Organically Grown Soybeans or Soybean Products in Commercial Food Products 512, 816, 823, 1007, 1263, 1479, 1535, 2127

Organically Grown Soybeans or Organic Soybean Products in Commercial Food Products 1098, 1127, 1158, 1160, 1163, 1168, 1223, 1248, 1253, 1255, 1256, 1267, 1282, 1307, 1309, 1357, 1362, 1397, 1413, 1459, 1478, 1589, 1890, 1974

Organoleptic evaluation. *See* Taste Panel, Taste Test Results, or Sensory / Organoleptic Evaluation

Oriental Show-You Company. Purchased in 1963 by Beatrice / La Choy 79, 142

Osteoporosis, Bone and Skeletal Health 1515, 1617, 1630, 1635, 1642, 1645, 1662, 1701, 1715, 1733, 1734, 1739, 1742, 1763, 1774, 1781, 1868

Pacific Foods of Oregon, Inc. (Tualatin, Oregon) 1479, 1725

Pacific Islands. *See* Oceania

- Packaging Equipment 1094
- Packaging Innovations and Problems 1269, 1332, 1479, 2156
- Paint Manufacturers' Association of the U.S., Incl. Henry A. Gardner, L.P. Nemzek and Industrial Uses of Soybeans 62
- Paints (Especially Water-Based Latex Paints)—Industrial Uses of Soy Proteins 94, 96, 122, 248, 263, 336, 357, 373, 428, 1072, 1079, 1082, 1471, 1472, 1474, 2153
- Paints, Varnishes, Enamels, Lacquers, and Other Protective / Decorative Coatings—Industrial Uses of Soy Oil as a Drying Oil 27, 29, 32, 42, 56, 62, 64, 65, 74, 78, 79, 83, 90, 115, 117, 118, 137, 139, 157, 163, 189, 206, 217, 230, 237, 239, 248, 277, 282, 284, 292, 295, 296, 298, 305, 309, 313, 322, 331, 344, 346, 361, 363, 394, 395, 399, 407, 440, 489, 688, 752, 873, 934, 1041, 1091, 1101, 1379, 1475, 1732, 1772, 1893, 1907, 1972, 2152
- Pakistan. *See* Asia, South-Pakistan
- Paper Coatings or Sizings, or Textile Sizing—Industrial Uses of Soy Proteins 64, 82, 94, 96, 122, 248, 313, 344, 361, 374, 408, 952, 1072, 1075, 1079, 1080, 1344, 1421, 1471, 1474, 1584, 2153
- Papua New Guinea. *See* Oceania—Papua New Guinea
- Patents 77, 322, 352, 371, 395, 403, 407, 413, 505, 535, 541, 563, 591, 650, 698, 707
- Patents—References to a Patent in Non-Patent Documents 58, 93, 218, 230, 288, 289, 462, 465, 467, 478, 482, 520, 553, 555, 570, 592, 593, 594, 595, 599, 611, 622, 628, 671, 720, 737, 750, 794, 813, 857, 957, 985, 987, 1001, 1003, 1010, 1028, 1070, 1071, 1075, 1078, 1085, 1088, 1091, 1215, 1221, 1230, 1232, 1268, 1331, 1334, 1347, 1387, 1407, 1412, 1435, 1471, 1473, 1474, 1475, 1492, 1521, 1529, 1546, 1597, 1606, 1607, 1620, 1659, 1729, 1739, 1825, 1890, 2045, 2067, 2154
- Patties, meatless. *See* Meat Alternatives (Traditional Asian), Meat Alternatives—Meatless Burgers and Patties
- Peanut Butter 324, 467, 533, 570, 571, 678, 771, 860, 882, 886, 891, 893, 970, 1000, 1292, 1367, 1388, 1528, 1856, 1858, 1992, 2013, 2045
- Peanut Butter—Seventh-day Adventist Writings or Products (Especially Early) Related to Peanut Butter 570, 771, 2045
- Peanut Flour (Usually Defatted) 272, 382
- Peanut Meal or Cake (Defatted) 644
- Peanut Oil 182, 289, 399, 821, 1593, 1667, 1906, 1907
- Peanut / Peanuts (*Arachis hypogaea* or *A. hypogaea*)—Also Called Groundnut, Earthnut, Monkey Nut, Goober / Gouber Pea, Ground Pea, or Pindar Pea / Pindars 289, 324, 361, 382, 467, 533, 570, 571, 577, 578, 607, 658, 678, 756, 767, 771, 821, 833, 835, 839, 851, 860, 882, 886, 891, 892, 893, 954, 970, 1000, 1043, 1055, 1075, 1180, 1211, 1263, 1292, 1367, 1388, 1503, 1524, 1528, 1593, 1667, 1710, 1778, 1789, 1856, 1858, 1938, 1992, 2013, 2020, 2039, 2045, 2054, 2060, 2073, 2081, 2092, 2099, 2106, 2115, 2119
- Peking / Peking soybean variety. *See* Soybean Varieties USA—Mammoth Yellow
- Pellets Made from Soybean Meal or Cake. Also Called Soybean Pellets 98, 106, 107, 120, 125, 131, 211, 277, 309, 327, 332, 337, 346, 691, 695, 837, 1239
- Peoria Plan of 1928-29 for Growing, Selling, and Processing Soybeans. Initiated in Illinois by American Milling Co., Funk Bros. Co., and Grange League Federation (GLF) Exchange, New York 301, 925
- Periodicals—American Soybean Association. *See* American Soybean Association (ASA)—Periodicals
- Periodicals—Soyfoods Movement. *See* Soyfoods Movement—Periodicals
- Pesticide carriers and adjuvants. *See* Adjuvants, Carriers, and Surfactants for Pesticides, Herbicides, and Other Agricultural Chemicals
- Pesticides—their Use and Safety (General) 571, 731, 884, 1101, 1106, 1150, 1260
- Pet food. *See* Dogs, Cats, and Other Pets / Companion Animals Fed Soy
- Pfizer, Inc. Including DeKalb-Pfizer Genetics (DeKalb, Illinois) from 1982 to 1990 681, 816, 1581
- Phaseolus limensis or P. lunatus. *See* Lima Bean
- Philippines. *See* Asia, Southeast—Philippines
- Photographs, Not About Soy, Published after 1923. *See* also Illustrations 31, 771, 1265, 1361
- Photographs Published after 1923. *See* also Illustrations 22, 23, 28, 34, 37, 42, 44, 45, 47, 51, 58, 62, 73, 74, 82, 84, 110, 111, 115, 122, 123, 124, 125, 129, 131, 140, 143, 144, 146, 147, 158, 162, 164, 174, 175, 177, 179, 182, 183, 185, 186, 187, 188, 191, 193, 197, 200, 201, 212, 215, 217, 221, 226, 227, 228, 230, 237, 247, 248, 252, 253, 255, 257, 279, 281, 296, 297, 312, 316, 317, 318, 320, 324, 325, 326, 327, 331, 334, 335, 336, 337, 338, 341, 342, 343, 346, 347, 349, 353, 355, 360, 364, 366, 367, 373, 393, 394, 397, 399, 405, 406, 415, 420, 421, 425, 426, 427, 434, 438, 452, 465, 471, 472, 475, 477, 485, 491, 499, 501, 506, 509, 514, 520, 523, 527, 529, 534, 536, 537, 542, 547, 553, 557, 558, 559, 565, 570, 577, 578, 579, 580, 581, 582, 584, 585, 600, 612, 636, 643, 651, 659, 661, 672, 686, 688, 694, 715, 722, 726, 727, 738, 746, 747, 756, 763, 764, 768, 770, 780, 789, 794, 799, 800, 813, 814, 827, 833, 834, 835, 839, 848, 851, 869, 873, 877, 889, 890, 904, 921, 925, 940, 968, 971, 973, 1001, 1005, 1009, 1051, 1087, 1094, 1098, 1102, 1116, 1117, 1121, 1125, 1133, 1135, 1139, 1142, 1143, 1148, 1153, 1154, 1158, 1160, 1162, 1167, 1168, 1171, 1184, 1200, 1206,

- 1224, 1225, 1227, 1228, 1234, 1239, 1253, 1255, 1256, 1259, 1263, 1264, 1269, 1270, 1274, 1275, 1280, 1282, 1285, 1288, 1289, 1290, 1291, 1292, 1298, 1305, 1313, 1340, 1344, 1348, 1357, 1360, 1363, 1364, 1365, 1371, 1379, 1382, 1390, 1393, 1394, 1396, 1410, 1420, 1423, 1424, 1430, 1432, 1440, 1441, 1442, 1443, 1444, 1449, 1455, 1483, 1485, 1486, 1490, 1491, 1492, 1494, 1497, 1523, 1525, 1539, 1541, 1542, 1547, 1552, 1553, 1554, 1555, 1556, 1557, 1567, 1577, 1580, 1582, 1588, 1593, 1596, 1604, 1612, 1616, 1626, 1636, 1642, 1643, 1644, 1645, 1647, 1651, 1652, 1653, 1654, 1655, 1656, 1667, 1668, 1675, 1680, 1685, 1686, 1693, 1708, 1714, 1715, 1718, 1719, 1723, 1728, 1732, 1734, 1736, 1769, 1771, 1776, 1777, 1781, 1783, 1788, 1789, 1795, 1798, 1799, 1813, 1814, 1817, 1820, 1841, 1843, 1845, 1847, 1848, 1873, 1874, 1875, 1877, 1881, 1890, 1892, 1900, 1901, 1905, 1912, 1931, 1932, 1934, 1935, 1942, 1961, 1963, 1969, 1970, 1973, 1974, 1977, 1986, 1988, 1992, 1998, 2000, 2002, 2011, 2016, 2017, 2019, 2039, 2040, 2041, 2043, 2045, 2048, 2049, 2050, 2052, 2054, 2059, 2060, 2065, 2072, 2073, 2074, 2081, 2083, 2092, 2099, 2103, 2106, 2110, 2112, 2115, 2119, 2126
- Photoperiod Insensitivity. *See* Soybean–Physiology–Photoperiod Insensitivity
- Photoperiodism. *See* Soybean–Physiology and Biochemistry
- Physical Fitness, Physical Culture, Exercise, Endurance, Athletics, and Bodybuilding 669, 1914
- Phytic Acid (Inositol Hexaphosphate), Phytates / Phytate, and Phytin 758, 1563, 1753
- Phytochemicals in soybeans and soyfoods. *See* Cancer Preventing Substances in Soybeans and Soyfoods
- Phytoestrogen content. *See* Isoflavone or Phytoestrogen Content of Soyfoods, Soy Ingredients, and Soybean Varieties
- Phytoestrogens (Estrogens in Plants, Especially in Soybeans and Soyfoods), Including Isoflavones (Including Genistein, Daidzein, Glycetein, Coumestrol, Genistin, and Daidzin), Lignans, and Coumestans 175, 938, 1389, 1460, 1482, 1515, 1524, 1530, 1536, 1542, 1543, 1560, 1563, 1564, 1567, 1613, 1617, 1620, 1630, 1642, 1645, 1659, 1662, 1667, 1698, 1701, 1715, 1720, 1722, 1724, 1725, 1726, 1732, 1734, 1739, 1740, 1743, 1748, 1750, 1752, 1753, 1755, 1756, 1758, 1759, 1760, 1761, 1763, 1765, 1767, 1769, 1771, 1774, 1781, 1784, 1785, 1787, 1792, 1793, 1798, 1815, 1818, 1828, 1832, 1833, 1838, 1839, 1845, 1848, 1849, 1852, 1853, 1858, 1860, 1868, 1869, 1882, 1883, 1886, 1888, 1889, 1899, 1906, 1909, 1914, 1915, 1916, 1921, 1926, 1927, 1929, 1958, 1978, 1982, 1983, 1984, 1988, 1996, 1997, 1999, 2001, 2014, 2022, 2042, 2047, 2058, 2075, 2089, 2090, 2109
- Piatt County Soybean Cooperative Co. *See* Monticello Co-operative Soybean Products Co.
- Pigs, Hogs, Swine, Sows, Boars, Gilts, or Shoats / Shotes Fed Soybeans, Soybean Forage, or Soybean Cake or Meal as Feed to Make Pork 37, 76, 173, 287, 2084
- Pillsbury Feed Mills and Pillsbury Co. (Minneapolis, Minnesota) 179, 225, 1003, 1072, 1447, 1487, 1491, 1493, 1501, 1502, 1503, 1517, 1525, 1534, 1544, 1554, 1555, 1556, 1557, 1567, 1570, 1571, 1572, 1593, 1596, 1647, 1664, 1783
- Pioneer Hi-Bred International, Inc. (Des Moines, Iowa) 1379, 1621, 1701, 1703, 1725, 1976, 2030
- Piper, Charles Vancouver (1867-1926, USDA) 137, 139
- Plamil Foods Ltd. (Folkestone, Kent, England) and The Plantmilk Society. Named Plantmilk Ltd. until 1972 732, 988, 1057, 1118, 1160, 1161, 1254, 1302, 1333, 1339, 1354, 1356, 1391, 1433, 1486
- Plant Industry, Bureau of. *See* United States Department of Agriculture (USDA)–Bureau of Plant Industry
- Plant Protection from Diseases, Pests and Other Types of Injury (General) 1164
- Plantmilk Ltd. *See* Plamil Foods Ltd.
- Plastics (Including Molded Plastic Parts, Plastic Film, Disposable Eating Utensils and Tableware–From Spoons to Plates, and Packaging Materials)–Industrial Uses of Soy Proteins 62, 64, 65, 74, 82, 83, 94, 96, 122, 212, 553, 653, 857, 1003, 1023, 1075, 1091, 1421, 1471, 1472, 1474, 1475, 1668, 1893, 2153
- Plastics, plasticizers and resins. *See* Resins, Plastics, and Plasticizers (Such as Epoxidized Soy Oil–ESO)
- Plenty Canada and The Farm in Canada (Lanark, Ontario, Canada) 1106, 1299, 1461, 2074
- Plenty International (Summertown, Tennessee). Starting 1981. Also called Plenty USA 1983-1997 1106, 1933, 2151
- Plenty (The Farm, Summertown, Tennessee). After Sept. 1983 see Plenty Canada and Plenty USA 803, 860, 1106
- Plums (salted / pickled), plum products, and the Japanese plum tree (*Prunus mume*). *See* Umeboshi
- PMS Foods, Inc. *See* Far-Mar-Co., Inc.
- Pogeler, Glenn Henry (1915-1995). Soybean Pioneer. Iowa Cooperatives, Soybean Council of America (SCA), National Soybean Processors Association (NSPA) 172, 254, 319, 579, 827, 905
- Policies and Programs, Government, Effecting Soybean Production, Marketing, Prices, Price Support Programs, Subsidies, Support Prices, or Trade 298, 299, 598, 821, 1032, 1213, 1393, 1436, 1456, 1539
- Pollination, Soybean (Self-Pollination, Cross-Pollination, etc.) 688
- Population Growth (Human) and Related Problems (Including Poverty) Worldwide 527, 662, 766, 769, 1188, 1222, 1270, 1344, 1544, 1680
- Pork, meatless. *See* Meat Alternatives–Meatless Bacon, Ham,

- Chorizo and Other Pork-related Products 496, 510, 511, 539, 605, 907, 917
- Potvin, Yves. *See* Garden Protein International (GPI) and Yves Fine Foods
- Poultry fed soybeans. *See* Chickens, or Turkeys, or Geese & Ducks
- Poultry, meatless. *See* Meat Alternatives— Meatless Chicken, Goose, Duck, and Related Poultry Products. *See also* Meatless Turkey
- Poverty, world. *See* Population Growth (Human) and Related Problems (Including Poverty)
- Precision Agriculture / Farming (Based on GPS—Global Positioning System), Including Auto-Steer, Auto-Guidance, Big Data, Digital Agriculture, Remote Sensing, Satellite Imagery / Technology, Smartphones, Grid Mapping, Variable Rate Technology (VRT), Robot Farming 1717
- Price of Soy Sauce, Worcestershire Sauce, or Early So-Called Ketchup (Which Was Usually Indonesian Soy Sauce) 1263
- Price of Soybeans, Soybean Seeds, and Soybean Products—Except Sauces (Which See) 361, 1216, 1522, 1712, 1778, 1847, 1875, 1901, 1962, 2017, 2039, 2054, 2060, 2073, 2081, 2092, 2099, 2106, 2115, 2119
- Processing capacity of individual soybean crushing plants. *See* Soybean Crushing—Processing Capacity and/or Storage Capacity of Individual Plants—Statistics
- Procter & Gamble Co. (Cincinnati, Ohio). Including the Buckeye Cotton Oil Co.. 37, 65, 132, 137, 139, 159, 160, 172, 179, 195, 209, 242, 245, 254, 310, 313, 319, 457, 598, 651, 683, 750, 790, 827, 871, 903, 1005, 1023, 1072, 1075, 1214, 1247, 1266, 1471, 1472, 1702, 1840, 1907, 2153
- Production of soybeans. *See* Soybean Production
- Products, soy, commercial (mostly foods). *See* Commercial Soy Products—New Products
- ProSoya—including ProSoya Inc. (Ontario, Canada), and ProSoya Corporation (Heuvelton, New York. No longer in Business), ProSoya UK Ltd. (ProSoya PLC) (Livingston, Scotland), Pacific ProSoya Foods, International ProSoya Corp. (IPC—British Columbia) 1689, 1714, 1749, 1761, 1846, 2035, 2056, 2091, 2101, 2107
- Protease inhibitors. *See* Trypsin / Protease  
Proteinase Growth Inhibitors
- Protection of soybeans. *See* Insects—Pest Control. *See also*: Integrated Pest Management, Pesticides (General), Rodents and Birds—Pest Control—Especially Rabbits and Woodchucks
- Protection of soybeans from diseases. *See* Diseases of soybeans
- Protein—Early and Basic Research 160, 362, 397, 446, 447, 455, 496, 510, 511, 539, 605, 907, 917
- Protein—Effects of Dietary Protein (Especially Soy Protein) on Blood Lipids (Especially Cholesterol) 815, 975, 1019, 1524, 1559
- Protein products, soy. *See* Soy Protein Products
- Protein Quality, and Supplementation / Complementarity to Increase Protein Quality of Mixed Foods or Feeds. *See also* Nutrition—Protein Amino Acids and Amino Acid Composition 70, 71, 96, 128, 171, 196, 205, 247, 252, 491, 504, 551, 556, 562, 576, 587, 615, 662, 687, 762, 766, 1089, 1134, 1204, 1601, 1618, 1910
- Protein Resources and Shortages, and the “World Protein Crisis / Gap / Problem” of 1950-1979 382, 397, 402, 510, 542, 791, 822
- Protein sources, alternative, from plants. *See* Amaranth, Azuki Bean, Leaf Proteins, Lupins or Lupin, Microbial Proteins (Non-Photosynthetic), Peanut & Peanut Butter, Peanuts & Peanut Butter, Quinoa, Single Cell Proteins (Non-Photosynthetic), Sunflower Seeds, Wheat Gluten & Seitan, Winged Bean
- Protein supplementation / complementarity to increase protein quality. *See* Nutrition—Protein Quality
- Protein Technologies International (PTI) (St. Louis, Missouri. Established on 1 July 1987 as a Wholly-Owned Subsidiary of Ralston Purina Co.) Sold to DuPont on 3 Dec. 1997 1175, 1333, 1349, 1414, 1427, 1431, 1463, 1467, 1482, 1509, 1511, 1546, 1548, 1605, 1620, 1639, 1645, 1700, 1701, 1703, 1720, 1725, 1739, 1754, 1759, 1764, 1767, 1771, 1787, 1799, 1828, 1852, 1856, 1859, 1865, 1868, 1870, 1888, 1904, 1908, 1909, 1910, 1921, 1926, 1944, 1953, 2153, 2156
- Psophocarpus tetragonolobus. *See* Winged Bean
- Puberty, Early Onset of. *See* Effect of Soy on Development
- Public Law 480 (Food for Peace Program. Formally—Agricultural Trade Development and Assistance Act of 1954) 361, 394, 452, 662, 766, 769, 822, 826, 836, 870, 992, 1055, 1251, 1331, 1350, 1455, 1481, 1539, 1593
- Pudding. *See* Soy Pudding, Custard, Parfait, or Mousse (Usually made from Soymilk or Tofu)
- Pueraria. *See* Kudzu or Kuzu
- Pulmuone Co., Ltd. (founded May 1984 in Korea). Incl. Pulmuone U.S.A., Inc. (founded Jan. 1991, South Gate, California). The Latter Merged with Wildwood Harvest Foods, Inc. in July 2004 to form POM Wildwood, which was soon renamed Pulmuone Wildwood, Inc. Brands include Soga, Azumaya, and Nasoya 1689, 1995, 2133
- Pure & Simple. *See* Well (The), Pure & Simple
- Quality and grades of soybean seed. *See* Seed Quality of Soybeans—Condition, Grading, and Grades (Moisture, Foreign Material, Damage, etc.)

- Quincy Soybean Products Co. (Quincy, Illinois). Purchased by Moorman Manufacturing Co. in 1961 and Renamed Quincy Soybean Company. Purchased by ADM in 1998 132, 159, 172, 209, 254, 293, 319, 457, 559, 683, 690, 691, 790, 806, 899, 903, 1103, 1104, 1249, 1266, 1537, 1702, 1706, 1781, 1840, 1881, 2010, 2015, 2016, 2036, 2157
- Quinoa (*Chenopodium quinoa* Willd.). Also spelled Quinoa 1240, 1708
- Quong Hop & Co. (San Francisco, California) 860, 945, 960, 979, 1090, 1269
- Quorn. *See* Meat Alternatives–Quorn (Based on Mycoprotein)
- Québec. *See* Canadian Provinces and Territories–Québec
- Rabbits as pests. *See* Rodent and Birds–Pest Control–Especially Rabbits and Woodchucks
- Railroad / railway / rail used to transport soybeans. *See* Transportation of Soybeans or Soy Products to Market by Railroad
- Railroads / Railways and Special Trains and/or Exhibit Cars Used to Promote Soybeans and Soybean Production 257, 559, 885, 971, 972
- Ralston Purina Co. (St. Louis, Missouri). Maker of Purina Chows. Including Protein Technologies International, a Wholly Owned Subsidiary from 1 July 1987 to 3 Dec. 1997 37, 59, 62, 65, 79, 82, 90, 115, 132, 134, 137, 139, 153, 159, 172, 179, 209, 225, 242, 245, 254, 301, 310, 319, 402, 416, 457, 465, 466, 467, 470, 476, 497, 523, 526, 528, 529, 533, 534, 538, 540, 541, 542, 553, 555, 561, 566, 576, 581, 586, 590, 592, 593, 594, 595, 604, 609, 610, 611, 613, 623, 629, 631, 651, 653, 655, 658, 667, 671, 680, 681, 683, 690, 691, 696, 698, 701, 721, 769, 778, 790, 806, 821, 824, 825, 830, 849, 855, 857, 870, 871, 887, 890, 896, 899, 903, 906, 938, 980, 991, 992, 993, 999, 1001, 1003, 1006, 1010, 1023, 1027, 1028, 1042, 1050, 1055, 1069, 1071, 1072, 1075, 1083, 1084, 1088, 1090, 1103, 1107, 1108, 1109, 1134, 1141, 1150, 1167, 1175, 1221, 1230, 1258, 1266, 1268, 1276, 1279, 1333, 1334, 1339, 1349, 1414, 1427, 1431, 1463, 1467, 1473, 1475, 1476, 1482, 1509, 1511, 1529, 1546, 1548, 1597, 1605, 1620, 1639, 1642, 1645, 1700, 1701, 1702, 1703, 1718, 1720, 1725, 1825, 1840, 1856, 1859, 1871, 1904, 1955, 2153, 2154, 2156
- Rapeseed Meal 829
- Rapeseed Oil 289, 711, 767, 904, 1032, 1151, 1214, 1247, 1503
- Rapeseed or the rape plant. *See* Canola
- Rapeseed, the Rape Plant (*Brassica napus*), or Colza. *See* also Canola 489, 598, 658, 789, 1217, 1712, 1778, 1847, 1875, 1901, 1962, 2017, 2039, 2054, 2060, 2073, 2081, 2092, 2099, 2106, 2115, 2119
- Recipes. *See* Cookery
- Regional Soybean Industrial Products Laboratory (Urbana, Illinois). *See* U.S. Regional Soybean Industrial Products Laboratory (Urbana, Illinois). Founded April 1936)
- Regulations or laws concerning foods (Use, processing, or labeling). *See* Kosher / Kashrus, Pareve / Parve / Parevine Regulations Products (Commercial), Kosher Products (Commercial)
- Regulations or Laws Concerning Foods (Use, Processing, or Labeling), Especially Soyfoods and Food Uses of Soybeans 507, 568, 772, 788, 830, 893, 1028, 1204, 1569
- Release or Curing Agents for Concrete or Asphalt, Industrial Solvents, Hydraulic Fluids, Antimicrobial Agents, and Other Minor or General–Industrial Uses of Soy Oil as a Non-Drying Oil 74, 83, 1480
- Religious aspects of vegetarianism. *See* Vegetarianism–Religious Aspects
- Rella Good Cheese Co. (Santa Rosa, California). Named Brightsong Tofu from June 1978 to June 1980; Redwood Valley Soyfoods Unlimited from June 1980 to June 1982; Brightsong Light Foods from June 1982 to June 1987; Rose International until 1990; Sharon’s Finest until Oct. 1997 1167, 1205, 1509, 1525, 1571, 1709
- Remote sensing and satellite imagery. *See* Precision Agriculture / Farming (Based on GPS)
- Reproduction / Reproductive, Fertility, or Feminization Problems in Animals Caused by Phytoestrogens, Isoflavones, or Unknown Causes 1753, 2058, 2075
- Republic of China (ROC). *See* Asia, East–Taiwan
- Research & Development Centers. *See* Cornell University (Ithaca, New York), and New York State Agric. Exp. Station, Illinois, University of (Urbana-Champaign, Illinois). Soyfoods, Iowa State University / College (Ames, Iowa), and Univ. of Iowa (Iowa City), National Center for Agricultural Utilization Research (NCAUR) (USDA-ARS) (Peoria, Illinois), National Food Research Institute (NFRI) (Tsukuba, Ibaraki-ken, Japan), U.S. Regional Soybean Industrial Products Laboratory (Urbana, Illinois). Founded April 1936)
- Research on Soybeans 115
- Resins, Plastics, and Plasticizers (Such as Epoxidized Soy Oil–ESO)–Industrial Uses of Soy Oil as a Drying Oil 118, 139, 198, 239, 305, 309, 322, 330, 338, 344, 346, 356, 363, 395, 403, 407, 413, 934, 1041
- Restaurants, Chinese, outside China, or Chinese recipes that use soy ingredients outside China. *See* Asia, East–China–Chinese Restaurants Outside China
- Restaurants, natural foods. *See* Natural Foods Restaurants in the United States
- Restaurants or cafeterias, vegetarian or vegan. *See* Vegetarian or Vegan Restaurants

- Restaurants or delis, soyfoods. *See* Soyfoods Movement–Soyfoods Restaurants
- Reverse osmosis. *See* Membrane Technology Processes
- Reviews of the literature. *See* Bibliographies and / or Reviews of the Literature
- Rewald, Bruno (1883-1947) and Relatives. Lecithin Pioneer in Germany, the United States and the United Kingdom 65, 957, 985, 987, 1439, 1861, 1873, 1894
- Rhizobium bacteria. *See* Soybean Production–Nitrogen Fixation
- Rice, Brown. Also Called Whole Grain Rice or Hulled But Unpolished Rice 839, 1018, 1031, 1196, 1219, 1343, 1418, 1454, 1496, 1708, 2083
- Rice koji. *See* Koji
- Rice Milk (Including Amazake) and Related Rice-Based Products (Some Made from Koji)–Etymology of These Terms and Their Cognates / Relatives in Various Languages 1464
- Rice Milk (Non-Dairy)–Amazake, Made with Rice Koji in the Traditional Way (Without Adding Commercial Enzymes). Also called Rice Milk or Rice Drink 1464
- Rice Milk (Non-Dairy)–Made with Commercial Enzymes, or a Mixture of Commercial Enzymes and Rice Koji 1570, 1571
- Rice Milk (Non-Dairy / Nondairy) 1570, 1571, 1644, 1914, 2083
- Rice Syrup and Yinnies (Called Mizuamé or Amé in Japan) 839
- Rice-Based Foods–Mochi (Cakes of Pounded, Steamed Glutinous Rice {*Mochigome*}) 1018
- Rice-Based Foods–Rice Cakes (Round Western-Style Cakes of Puffed Rice, About 4 Inches in Diameter and ½ Inch Thick) 1163
- Riceland Foods (Named Arkansas Grain Corp. before Sept. 1970) 457, 579, 681, 683, 709, 790, 827, 899, 903, 905, 1103, 1266, 1529, 1702, 1710, 1840, 1846, 1920, 2010
- Rich Products Corporation (Buffalo, New York) 200, 1070, 1072, 1078, 1102, 1109, 1427, 1475, 1477
- Richards, Michael. *See* SoyaWax International
- Roads or highways used to transport soybeans. *See* Transportation of Soybeans or Soy Products to Market by Roads or Highways
- Roasted Soy Flour–Etymology of This Term and Its Cognates / Relatives in Various Languages 1263
- Roasted Soy Flour, Soy Coffee, or Soy Chocolate–Industry and Market Statistics, Trends, and Analyses–Individual Companies 1012
- Roasted Whole Soy Flour (Kinako–Dark Roasted with Dry Heat, Full-Fat) and Grits 79, 376, 496, 603, 791, 810, 924, 945, 1012, 1056, 1263, 1678, 1736, 1915, 1941, 2018, 2095, 2151
- Roasted Whole Soy Flour (Kinako), Homemade–How to Make at Home or on a Laboratory Scale, by Hand 924
- Rodale Press (Emmaus, Pennsylvania) 715, 723, 1050, 1109, 1617
- Rodents and Birds–Pest Control–Especially Rabbits, Jackrabbits / Jack Rabbits, Hares, Woodchucks, Pigeons and Pheasants 182
- Rosewood Products Inc. and Tofu International Ltd. (Ann Arbor, Michigan, from 1987). Founded as The Soy Plant in Ann Arbor. Started in Jan. 1977. An Early Tofu Cooperative, Worker Owned and Operated 816, 848, 886, 979, 1343, 1561
- Ross & Rowe (Yelkin Lecithin, New York City) 35, 150, 289, 663, 768, 890, 987, 1184, 1270, 1344, 1419, 1439, 1594, 1668, 1873, 2093, 2116
- Royal Wessanen, NV. *See* Wessanen (Royal) NV
- Royal Wessanen NV Co. *See* Tree of Life (St. Augustine, Florida)
- Rubber Substitutes or Artificial / Synthetic Rubber (Factice)–Industrial Uses of Soy Oil as a Drying Oil 65, 74, 83, 230, 295, 305, 394
- Ruchi Soya Industries Ltd. (RSIL; Indore, Madhya Pradesh, and Mumbai, India) 944, 1953, 2038, 2043, 2151
- Russian Federation (Russia). *See* Europe, Eastern–Russian Federation
- Rust, soybean. *See* Rust, Soybean
- Ryukyu Islands. *See* Okinawa
- Safety concerns about soy in human diets. *See* Concerns about the Safety, Toxicity, or Health Benefits of Soy in Human Diets
- Saishikomi. *See* Soy Sauce–Saishikomi
- San Jirushi Corp., and San-J International (Kuwana, Japan; and Richmond, Virginia). Purchased in Nov. 2005 by Yamasa Corporation 839
- Sandoz AG (Basel, Switzerland). Merged with Ciba-Geigy in March 1996 to Become Novartis 496, 555, 732, 1509, 1646, 1725, 1859
- Sanitarium Health Food Company (Wahroonga, NSW, Australia). In 2002 they acquired SoyaWorld of British Columbia, Canada.. 481, 661, 736, 771, 772, 878, 880, 932, 1282, 1292, 1302, 1320, 1367, 1381, 1391, 1498, 1513, 1734, 1753, 1858
- Saponins (Bitter Carbohydrates / Glucosides That Cause Foaming) 175, 1563, 1662, 1886, 1916, 1996, 1997

- Sauce, soy nugget. *See* Fermented Black Soybean Extract
- Sausages, meatless. *See* Meat Alternatives–Meatless Sausages
- School Lunch Program 541, 581, 585, 611, 619, 626, 632, 638, 658, 696, 742, 748, 764, 881, 1020, 1028, 1251, 1276, 1349, 1427, 1466, 1539, 1698, 1829, 2009, 2154
- Scotland. *See* Europe, Western–Scotland (Part of United Kingdom)
- Screw presses. *See* Soybean Crushing–Equipment–Screw Presses and Expellers
- Sea Vegetables or Edible Seaweeds, Often Used with Soyfoods 665, 715, 828, 839, 922, 924, 952, 1018, 1056, 1148, 1162, 1179, 1180, 1307, 1343, 1464, 1553, 1919, 2062, 2083, 2088
- Seafood, meatless. *See* Meat Alternatives–Meatless Fish, Shellfish, and Other Seafood-like Products
- Seaweeds, edible. *See* Sea Vegetables
- Second Generation Soyfood Products 1206
- Seed and plant introduction to the USA. *See* United States Department of Agriculture (USDA)–United States Department of Agriculture (USDA)–Section of Foreign Seed and Plant Introduction
- Seed Certification and Certified Seeds (Soybeans) 281
- Seed Cleaning–Especially for Food or Seed Planting Uses 1304, 1356
- Seed companies, soybean. *See* Asgrow (Des Moines, Iowa), DuPont (E.I. Du Pont de Nemours & Co., Inc.) (Wilmington, Delaware), Funk Brothers Seed Co. (Bloomington, Illinois), Hartz (Jacob) Seed Co. (Stuttgart, Arkansas), Monsanto Co. (St. Louis, Missouri), Northrup King Co., Pioneer Hi-Bred International, Inc. (Des Moines, Iowa), Wing Seed Co. (Mechanicsburg, Champaign County, Ohio)
- Seed companies–Thompson. *See* Thompson (W.G.) & Sons Limited, Blenheim, Ontario, Canada
- Seed Quality, Composition, and Component / Value-Based Pricing (Percentage and Quality of Protein, Oil, Fatty Acids, etc.) 1877
- Seed Quality of Soybeans–Condition, Grading, and Grades (Moisture, Foreign Material, Damage, etc.) 175, 298, 299, 1711
- Seed Weight / Size (Soybeans)–Weight of 100 Seeds / Grains in Grams, or Number of Seeds Per Pound or Per Kilogram, and Agronomic Significance of Seed Weight 361
- Seeds, soybean–Variety development and breeding of soybeans. *See* Variety Development and Breeding
- Seitan. *See* Wheat Gluten Made into Seitan
- Sensory evaluation. *See* Taste Panel, Taste Test Results, or Sensory / Organoleptic Evaluation
- Sesame Butter, Tahini / Tahina / Tahin, Sesame Halva / Halwa, or Sesame Paste 839, 1059, 1162, 1417, 1553, 1789, 1971, 2023, 2083
- Sesame Meal or Cake (Defatted) 382
- Sesame Oil 688, 1789, 1907, 2083, 2088
- Sesame Seed (*Sesamum indicum*, formerly *Sesamum orientale*). (Also Called Ajonjoli, Benne, Benni, Benniseed, Gingelly, Gingely, Gingelie, Jinjili, Sesamum, Simsim, Teel, Til). Including Sesame as an Oilseed, Sesame Flour, Sesame Tofu (*Goma-dofu*), and Sesame Salt / Gomashio. *See* also Sesame Butter / Tahini, Sesame Cake or Meal, Sesame Milk, and Sesame Oil 512, 756, 800, 840, 940, 1050, 1059, 1125, 1180, 1271, 1417, 1553, 1708, 1770, 1789, 1907, 1971, 2082, 2088
- Sesamum indicum*. *See* Sesame Seed
- Seventh-day Adventist work with vegetarianism. *See* Vegetarianism–Seventh-day Adventist Work with
- Seventh-day Adventist writings or products (especially early) related to dietary fiber. *See* Fiber–Seventh-day Adventist Writings or Products
- Seventh-day Adventist writings or products (especially early) related to peanut butter. *See* Peanut Butter–Seventh-day Adventist Writings or Products
- Seventh-day Adventists. *See* Fuller Life Inc., Harrison, D.W. (M.D.), and Africa Basic Foods (Uganda), Kellogg, John Harvey (M.D.) (1852-1943), Sanitas Nut Food Co. and Battle Creek Food Co., Kellogg, Will Keith,... Kellogg Co., Kloss, Jethro (1863-1946) and his Book *Back to Eden*, Loma Linda Foods (Riverside, California), Loma Linda University (Loma Linda, California), Madison Foods and Madison College (Madison, Tennessee), Miller, Harry W. (M.D.) (1879-1977), Van Gundy, Theodore A., and La Sierra Industries (La Sierra, California), White, Ellen G (1827-1915), Worthington Foods, Inc. (Worthington, Ohio)
- Seventh-day Adventists–Adventist Small Food Companies in the USA. Including Butler Food Products, Cedar Lake Foods, Hilcrest / Hillcrest, Lange Foods, Millstone Foods, Texas Protein Sales. *See* also: Battle Creek Foods, Loma Linda Foods, La Sierra Industries, Madison Foods, or Sovex Natural Foods (Fuller Life Inc.) 481, 736, 805, 835, 839, 858, 2156
- Seventh-day Adventists–Cookbooks and Their Authors, Dietitians and Nutritionists–Ella E.A. Kellogg (1852-1920), Anna L. Colcord (1860?-1940?), Jethro Kloss (1863-1946), Almeda Lambert (1864-1921), Lenna Frances Cooper (1875-1961), Julius G. White (1878-1955), Frances Dittes (1891-1979), Edyth Cottrell (1900-1995), Dorothea Van Gundy Jones (1903-1979), Philip S. Chen (1903-1978), Frank & Rosalie Hurd (1936- ), etc.. 324, 392, 805, 1734
- Seventh-day Adventists–General and Historical 481, 736, 771

Seventh-day Adventists—Influence Today of Seventh-day Adventist Affiliated Organizations in the Fields of Vegetarianism, Health, and Soyfoods (Not Including Original Medical Research on Adventists) 481, 736, 771, 805, 878, 880, 981, 1000, 1339, 1349, 1649

Seventh-day Adventists—Overseas Companies Making Soyfoods (Europe). *See* DE-VAU-GE Gesundkostwerk GmbH (Lueneburg, Germany), Granose Foods Ltd. (Bucks., England)

Seventh-day Adventists—Overseas Companies Making Soyfoods (Europe, Asia, and Latin America). Other, Including Alimentos Colpac, Nutana, Saniku / San-iku Foods, Spicer Memorial College, Superbom 481, 659, 660, 697, 726, 727, 736, 771, 772, 833, 834, 864, 867, 868, 875, 878, 880, 978, 981, 1022, 1061, 1234, 1235, 1263, 1285, 1294, 1304, 1319, 1320, 1342, 1360, 1361, 1381

Seventh-day Adventists—Overseas Companies Making Soyfoods (Oceania). *See* Sanitarium Health Food Company (Wahroonga, Australia)

Shadowfax. *See* Natural Food Distributors and Master Distributors—General and Other Smaller: Cliffrose, Shadowfax, etc.

Shakes—Made with Soymilk, Tofu, Amazake, Soy Protein, etc. Usually non-dairy 828

Sharon's Finest. *See* Rella Good Cheese Co.

Shellabarger Grain Co. / Shellabarger Soybean Mills (Decatur, Illinois) 27, 29, 37, 75, 79, 137, 139, 160, 169, 172, 209, 235, 245, 254, 313, 690, 691

Shennong / Shen Nung. *See* Asia, East—China—Shennong / Shên Nung / Shen Nung

Shiro shoyu. *See* Soy Sauce, Pale (*Shiro Shoyu*)

Shortening (Usually Hydrogenated) 64, 74, 83, 123, 139, 142, 143, 175, 179, 182, 206, 279, 282, 298, 299, 313, 361, 394, 399, 489, 532, 565, 709, 750, 752, 768, 873, 931, 945, 954, 1005, 1070, 1109, 1212, 1364, 1594, 2003, 2122

Shoyu. *See* Soy Sauce

Shurtleff, William. *See* Soyinfo Center (Lafayette, California)

Simply Natural, Inc. (Philadelphia, Pennsylvania). Founded by Christine Pirello 1107

Sinaiko Family of Madison, Wisconsin—Incl. Joe Sinaiko of Iowa Milling Co. and Decatur Soy Products Co. (1891-1988), His Brother Ike Sinaiko of Illinois Soy Products Co. (1897-1977), and His Brothers-in-Law Max Albert of Galesburg Soy Products Co. (1893-1966) and Irving Rosen of Quincy Soybean Products Co. (1907-1964) 113, 132, 137, 139, 159, 172, 177, 242, 245, 254, 288, 293, 319, 457, 458, 468, 472, 521, 540, 559, 690, 691, 806, 899, 903, 934, 1103, 1104, 1225, 1227, 1239, 1249, 1396, 1455, 1781, 1820, 1879, 1881, 2015, 2016, 2036, 2157

Single cell proteins. *See* Microbial Proteins (Non-Photosynthetic)

Single Cell Proteins (Photosynthetic, Including Algae / Microalgae Such as Spirulina, Chlorella, and Scenedesmus) 769, 1228, 1431

Size of soybean seeds. *See* Seed Weight / Size (Soybeans)—Weight of 100 Seeds in Grams, or Number of Seeds Per Pound

Sizings for paper or textiles. *See* Paper Coatings or Sizings, or Textile Sizing

Skin Health 163, 207

Smoked tofu. *See* Tofu, Smoked

Smoothie—Made with Soymilk, Tofu, Soy Yogurt, Soy Protein Isolate, Rice Milk, or Other Non-Dairy Smoothie Ingredients. Also spelled Smoothies or Smoothees 943, 1121, 1617, 1643, 1888, 1992, 1995, 2002, 2082

Soaps or Detergents—Industrial Uses of Soy Oil as a Non-Drying Oil—Soap, Detergent 32, 42, 65, 74, 79, 83, 117, 124, 139, 239, 295, 305, 313, 319, 361, 393, 440, 457, 489, 540, 683, 688, 690, 790, 903, 1041, 1101, 1227, 1266, 1732, 1881, 1893, 1975, 2043

Societe Soy (Saint-Chamond, France). *See* Soyfoods Companies (Europe)—Nutrition et Soja

Society for Acclimatization (*Société d'Acclimatation*, France) 1109

Soil Science—Soil Erosion and Soil Conservation 1539, 1597, 1717

Sojadoc (Clermond-Ferrand, France) 1042, 1183, 1356

Sojarei Vollwertkost GmbH (Traiskirchen, near Vienna, Austria). Formerly Sojarei Ebner-Prosl 1049

Sojinal / Biosoja (Formerly Cacoja; Affiliate of Coopérative Agricole de Colmar—Issenheim & Colmar, France). Acquired by B & K Holdings, of Switzerland, in mid-1993. Acquired by Alpro (Belgium) on 22 April 1996 1301, 1303, 1317, 1339, 1354, 1356, 1370, 1463, 1499, 1546, 1645, 1859

Solae Co. (The) (St. Louis, Missouri. Joint Venture Between DuPont and Bunge Ltd., Merging PTI and Central Soya's Specialty Process Division (formerly Chemurgy Div.)) 1886, 1944, 1961, 1965, 1966, 1967, 1969, 1997, 1999, 2012, 2013, 2030, 2033, 2034, 2035, 2044, 2056, 2063, 2065, 2091, 2101, 2116

Solbar Hatzor Ltd. (Israel). *See* Hayes Ashdod Ltd. (renamed Solbar Hatzor Ltd. in April 1987) and Hayes General Technology (Israel)

Solnuts B.V. (Tilburg, The Netherlands; and Hudson, Iowa). Including Edible Soy Products, makers of Pro-Nuts, founded in 1970. Acquired by Specialty Food Ingredients Europe BV in Dec. 1991. Acquired by the Kerry Group in Jan. 2000 and Name Changed to Nutriant (Jan. 2002 to 2006) 697, 848, 1042, 1150, 1431, 1546, 1859

Solvent extraction equipment. *See* Soybean Crushing—Equipment—

Solvent extraction

Solvents. *See* Soybean Crushing–Solvents

Solvents–Ethanol (Ethyl Alcohol)–Used for Soy Oil Extraction, or Washing / Purification of Soy Products (Protein, Lecithin, Saponins, etc.) 129, 288, 1466, 1536, 1659

Solvents–Hexane–Used Mainly for Soy Oil Extraction 15, 44, 45, 72, 98, 163, 198, 218, 283, 285, 312, 382, 422, 557, 750, 938, 983, 985, 1075, 1082, 1175, 1435, 1439, 1459, 1471, 1589, 1614, 1825, 1881, 1966, 1996, 2013, 2020, 2064, 2152

Solvents, industrial. *See* Release or Curing Agents for Concrete or Asphalt, Industrial Solvents, Hydraulic Fluids, and Other Minor or General Uses

Solvents–Trichloroethylene (Trichlorethylene, Trichlor) 58, 129, 175, 283, 288, 557, 983

Solvents Used for Extraction of the Oil from Soybeans: Benzene / Benzine / Benzol / Benzin (petrol, gasoline) 15

Solvents Used for Extraction of the Oil from Soybeans (General, Type of Solvent, Unspecified, or Other). *See* also Ethanol, Hexane, and Trichloroethylene Solvents 42, 50, 61, 64, 68, 76, 86, 106, 120, 135, 161, 183, 220, 260, 264, 275, 284, 289, 298, 299, 310, 327, 376, 472, 479, 513, 520, 521, 541, 559, 579, 603, 691, 850, 899, 931, 944, 955, 983, 1021, 1337, 1364, 1455, 1473, 1620, 1632, 1909, 1955, 1996, 1997

Solvents Used for Extraction of the Oil from Soybeans: Naphtha / Naphthas. Also spelled Naptha / Napthas 45, 218, 288

Soup, miso. *See* Miso Soup

Sour Cream Alternatives (Non-Dairy–Usually Contains Soy) 828, 943, 952, 1131, 1205, 1547, 1741, 1937, 1987, 2062, 2089

South Africa. *See* Africa–South Africa

South America. *See* Latin America–South America

South River Miso Co. (Conway, Massachusetts). Including Ohio Miso Co.. 715

Sovex Natural Foods (Collegedale, Tennessee). *See* Fuller Life Inc.

Soy and Cancer Prevention; Cancer Preventing Substances in Soybeans and Soyfoods (Such as the Isoflavones Genistein and Daidzein) 1460, 1524, 1536, 1559, 1560, 1642, 1645, 1860, 1865, 1978

Soy bran. *See* Fiber, Soy

Soy Cheese–Etymology of This Term and Its Cognates / Relatives in Various Languages 1054

Soy Cheese–Fermented, Western Style, That Melts. May Contain Casein (Cow’s Milk Protein) 591, 672, 803

Soy Cheese Industry and Market Statistics, Trends, and Analyses–By Geographical Region 1570

Soy Cheese–Non-Fermented, Western Style, That Melts. Typically Made with Tofu or Isolated Soy Proteins. Usually Contains Casein (A Protein from Cow’s Milk) 1167

Soy Cheese or Cheese Alternatives–General, Western Style, That Melts. Often Contains Casein (Cow’s Milk Protein) 715, 783, 890, 952, 1023, 1054, 1118, 1123, 1146, 1240, 1312, 1346, 1433, 1457, 1466, 1523, 1559, 1570, 1571, 1635, 1665, 1708, 1709, 1734, 1741, 1745, 1747, 1761, 1770, 1789, 1799, 1800, 1823, 1836, 1872, 1887, 1914, 1915, 1937, 1987, 1992, 2023, 2027, 2087, 2089

Soy Cheesecake or Cream Pie, Usually Made with Tofu 672, 723, 803, 860, 943, 1106, 1121, 1150, 1180, 1356, 1644, 1665, 1770, 1841, 1903, 1914, 2062, 2100

Soy Coffee–Made from Roasted Soy Flour or Ground Roasted Soybeans 79, 123, 139, 142, 559, 672, 749, 803, 902, 942, 945, 973, 989, 1012, 1211, 1280, 1456, 1497, 1970

Soy cotyledon fiber / polysaccharides (from making soy protein isolates). *See* Fiber

Soy Cream Cheese, Usually Made of Tofu or Soy Yogurt 603, 672, 732, 852, 1107, 1180, 1205, 1400, 1547, 1914, 2061, 2062

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Soy, etymology of the word. *See* Etymology of the Word “Soy” and its Cognates / Relatives in English

Soy fiber. *See* Fiber

Soy flour companies (Europe). *See* Spillers Premier Products Ltd. (Puckeridge, Ware, Hertfordshire, England)

Soy Flour, Defatted or Partially Defatted, Used as an Ingredient in Second Generation Commercial Products Such as Baked Goods, Pasta, etc.. 774, 835, 1013, 1234, 1397

Soy Flour, Grits, and Flakes–Enzyme Active (Whole / Full-Fat, Unheated) 24, 42, 339, 340, 390, 441, 444, 496, 563, 603, 630, 633, 718, 762, 855, 916, 1145, 1288, 1318, 1387, 1607, 1962, 1996, 2017, 2085

Soy Flour, Grits, and Flakes–Use in Brewing Beer, Such as ADM Pro-zyme Flakes and Soybean Brew Flakes 54, 55, 82, 135, 223, 248, 277, 309, 346, 393, 603, 1910

Soy Flour, Grits and Flakes (Usually Defatted)–Etymology of These Terms and Their Cognates / Relatives in Various Languages 54

Soy Flour, Grits, Meal, Powder, or Flakes–For Food Use (Usually Defatted or Low-Fat). *See* also Soy Flour–Whole or Full-fat 54, 55, 58, 61, 75, 77, 79, 82, 95, 99, 104, 123, 127, 132, 135, 137, 138, 142, 143, 144, 145, 146, 149, 152, 153, 160, 161, 162, 167, 168,

169, 172, 175, 178, 179, 184, 191, 195, 196, 197, 198, 205, 206, 214, 215, 220, 221, 223, 224, 226, 227, 228, 235, 247, 248, 252, 253, 262, 266, 267, 269, 272, 277, 279, 282, 302, 304, 309, 315, 320, 324, 327, 333, 334, 337, 340, 341, 344, 346, 351, 356, 361, 362, 367, 369, 370, 372, 377, 378, 380, 382, 390, 393, 394, 396, 399, 400, 402, 404, 405, 411, 418, 419, 438, 439, 446, 447, 449, 452, 453, 455, 465, 474, 476, 496, 502, 503, 504, 505, 517, 526, 528, 532, 536, 542, 557, 559, 565, 566, 578, 579, 582, 584, 603, 609, 614, 616, 629, 630, 631, 641, 645, 654, 655, 657, 658, 663, 669, 671, 672, 680, 688, 696, 704, 706, 712, 713, 716, 718, 721, 733, 742, 754, 756, 762, 767, 768, 770, 778, 787, 791, 794, 801, 802, 803, 808, 809, 812, 813, 814, 819, 825, 828, 830, 831, 832, 839, 842, 846, 848, 849, 851, 855, 858, 861, 869, 874, 875, 880, 883, 885, 886, 890, 896, 902, 911, 917, 918, 920, 922, 929, 930, 938, 942, 944, 945, 948, 962, 966, 971, 973, 974, 989, 992, 997, 1005, 1016, 1034, 1058, 1059, 1068, 1078, 1080, 1083, 1085, 1088, 1090, 1091, 1093, 1109, 1118, 1121, 1124, 1145, 1146, 1160, 1161, 1162, 1166, 1177, 1181, 1184, 1185, 1188, 1189, 1202, 1204, 1216, 1218, 1220, 1231, 1238, 1239, 1263, 1277, 1281, 1284, 1285, 1288, 1299, 1313, 1323, 1329, 1330, 1331, 1337, 1346, 1348, 1418, 1419, 1420, 1427, 1431, 1435, 1440, 1441, 1447, 1456, 1474, 1495, 1497, 1503, 1509, 1522, 1524, 1535, 1536, 1547, 1548, 1553, 1559, 1560, 1594, 1598, 1601, 1605, 1630, 1639, 1643, 1665, 1667, 1678, 1681, 1684, 1698, 1708, 1709, 1715, 1720, 1732, 1733, 1734, 1735, 1741, 1746, 1761, 1764, 1767, 1772, 1785, 1788, 1822, 1823, 1825, 1841, 1864, 1867, 1871, 1886, 1888, 1893, 1899, 1903, 1909, 1910, 1915, 1916, 1926, 1929, 1935, 1937, 1952, 1953, 1970, 1972, 1982, 1988, 1992, 1996, 1997, 2017, 2028, 2031, 2033, 2050, 2076, 2081, 2087, 2089, 2091, 2101, 2107, 2126, 2150

Soy Flour—Imports, Exports, International Trade 61, 394

Soy Flour, Industrial Uses of—Other. See also: Adhesives or Glues for Plywood, Other Woods, Wallpaper, Building Materials, Etc.. 42, 79, 82, 132, 138, 146, 172, 327, 352, 1080, 1109

Soy Flour Industry and Market Statistics, Trends, and Analyses—By Geographical Region 116, 138, 220, 441, 442, 465, 496, 565, 580, 584, 609, 888, 911, 923, 1090, 1204, 1250, 1251, 1456, 1509, 1764, 1909, 2085

Soy Flour Industry and Market Statistics, Trends, and Analyses—Individual Companies or Products 495, 645, 1509, 1909

Soy Flour or Defatted Soybean Meal in Cereal-Soy Blends, with Emphasis on Dry Products Used in Third World Countries, Often Used as Weaning Foods (such as CSM, WSB, etc.) 160, 377, 478, 493, 519, 527, 529, 534, 539, 565, 578, 583, 605, 662, 688, 706, 723, 734, 766, 770, 822, 836, 898, 958, 998, 1013, 1090, 1109, 1159, 1181, 1192, 1251, 1299, 1331, 1377, 1379, 1427, 1509, 2151

Soy flour, roasted. See Roasted soy flour

Soy Flour, Textured (Including TVP, Textured Vegetable Protein) 462, 465, 478, 483, 484, 485, 486, 488, 490, 497, 498, 500, 508, 509, 513, 514, 515, 516, 517, 518, 523, 527, 529, 530, 532, 534, 535, 536, 537, 541, 543, 547, 549, 551, 552, 554, 555, 564, 565, 566, 572, 575, 576, 580, 581, 584, 585, 587, 588, 593, 594, 599, 601, 602, 604, 607, 609, 610, 611, 612, 613, 614, 615, 617, 619, 620, 621, 622, 624, 625, 626, 627, 631, 632, 635, 636, 638, 639,

643, 646, 648, 651, 652, 654, 655, 658, 659, 660, 661, 664, 665, 666, 668, 669, 670, 671, 672, 674, 677, 678, 679, 680, 686, 687, 688, 689, 693, 694, 696, 698, 699, 700, 701, 702, 704, 705, 706, 710, 713, 714, 719, 720, 723, 724, 729, 730, 732, 733, 734, 735, 738, 741, 743, 746, 747, 748, 751, 753, 759, 763, 764, 767, 768, 769, 770, 772, 775, 776, 777, 778, 780, 785, 791, 792, 794, 795, 797, 798, 799, 800, 801, 802, 803, 804, 807, 808, 810, 811, 812, 813, 814, 815, 817, 822, 825, 833, 834, 835, 838, 839, 840, 843, 847, 851, 853, 856, 857, 858, 859, 864, 865, 866, 867, 868, 872, 874, 875, 878, 879, 880, 881, 882, 883, 886, 888, 890, 891, 893, 894, 895, 897, 898, 900, 902, 906, 911, 912, 921, 922, 923, 924, 929, 930, 932, 933, 936, 938, 940, 942, 943, 944, 945, 946, 948, 949, 951, 956, 958, 959, 960, 969, 970, 973, 974, 975, 978, 980, 981, 984, 988, 989, 991, 992, 995, 996, 997, 999, 1001, 1003, 1005, 1007, 1008, 1011, 1013, 1014, 1016, 1017, 1021, 1028, 1031, 1034, 1037, 1044, 1045, 1046, 1052, 1054, 1056, 1058, 1059, 1060, 1061, 1071, 1076, 1077, 1089, 1099, 1100, 1105, 1106, 1110, 1111, 1112, 1115, 1116, 1117, 1118, 1120, 1121, 1123, 1126, 1127, 1136, 1138, 1146, 1160, 1161, 1162, 1164, 1166, 1170, 1172, 1177, 1180, 1181, 1184, 1185, 1187, 1188, 1194, 1197, 1198, 1200, 1201, 1202, 1205, 1206, 1207, 1208, 1209, 1211, 1212, 1218, 1220, 1221, 1228, 1230, 1231, 1232, 1237, 1238, 1240, 1245, 1250, 1262, 1263, 1264, 1268, 1272, 1277, 1280, 1281, 1283, 1284, 1285, 1288, 1289, 1290, 1292, 1297, 1299, 1300, 1318, 1321, 1323, 1327, 1336, 1343, 1344, 1346, 1349, 1351, 1353, 1365, 1367, 1371, 1377, 1378, 1385, 1387, 1388, 1390, 1393, 1395, 1403, 1404, 1409, 1412, 1418, 1419, 1420, 1422, 1427, 1428, 1437, 1441, 1442, 1451, 1454, 1456, 1457, 1459, 1460, 1464, 1466, 1471, 1473, 1476, 1483, 1485, 1489, 1490, 1495, 1497, 1503, 1504, 1518, 1524, 1528, 1529, 1530, 1535, 1536, 1542, 1546, 1548, 1550, 1552, 1559, 1560, 1561, 1579, 1582, 1589, 1594, 1599, 1601, 1605, 1611, 1612, 1613, 1617, 1618, 1619, 1635, 1637, 1643, 1644, 1648, 1649, 1657, 1659, 1662, 1664, 1665, 1667, 1669, 1671, 1678, 1681, 1684, 1686, 1693, 1694, 1705, 1708, 1716, 1729, 1731, 1732, 1733, 1734, 1736, 1738, 1741, 1742, 1746, 1751, 1761, 1764, 1770, 1772, 1788, 1789, 1790, 1823, 1825, 1829, 1830, 1836, 1841, 1858, 1864, 1883, 1891, 1898, 1899, 1903, 1904, 1906, 1909, 1910, 1914, 1915, 1916, 1919, 1929, 1933, 1937, 1941, 1942, 1953, 1964, 1971, 1972, 2000, 2001, 2018, 2023, 2025, 2028, 2031, 2043, 2050, 2053, 2061, 2062, 2066, 2068, 2076, 2080, 2082, 2083, 2087, 2088, 2089, 2090, 2095, 2097, 2100, 2105, 2112, 2117, 2148, 2151, 2154, 2155

Soy Flour—Whole or Full-fat 42, 57, 61, 64, 75, 79, 139, 144, 149, 160, 164, 178, 339, 351, 376, 382, 400, 437, 441, 442, 443, 492, 493, 495, 496, 504, 505, 529, 534, 556, 563, 565, 578, 596, 609, 629, 633, 663, 680, 695, 706, 712, 732, 768, 778, 836, 852, 855, 890, 893, 898, 902, 916, 923, 944, 945, 959, 991, 1031, 1042, 1056, 1059, 1106, 1115, 1118, 1145, 1188, 1199, 1250, 1288, 1299, 1318, 1321, 1331, 1387, 1422, 1435, 1441, 1518, 1528, 1548, 1601, 1607, 1764, 1951, 1953, 1962, 1974, 2039, 2043, 2068, 2085, 2126, 2151

Soy Flour, Whole or Full-fat, Used as an Ingredient in Second Generation Commercial Products Such as Baked Goods, Pasta, etc.. 519

Soy ice cream companies (USA). See Barricini Foods (Mountain Lakes, New Jersey), Tofutti Brands, Inc. (Cranford, New Jersey), Turtle Mountain LLC

Soy Ice Cream—Etymology of This Term and Its Cognates /

Relatives in Various Languages 973

Soy Ice Cream (Frozen or Dry Mix)—Imports, Exports, International Trade 1107, 1150, 1709

Soy Ice Cream (General—Usually Non-Dairy) 65, 123, 142, 152, 198, 312, 324, 361, 466, 467, 526, 603, 653, 672, 715, 723, 732, 803, 804, 838, 907, 937, 943, 945, 952, 960, 963, 973, 1000, 1020, 1023, 1035, 1037, 1053, 1054, 1055, 1069, 1070, 1071, 1072, 1073, 1075, 1086, 1087, 1090, 1095, 1096, 1100, 1102, 1106, 1107, 1109, 1118, 1122, 1123, 1128, 1131, 1133, 1137, 1139, 1141, 1146, 1150, 1155, 1171, 1173, 1174, 1179, 1180, 1205, 1208, 1240, 1253, 1255, 1256, 1259, 1278, 1295, 1301, 1306, 1310, 1311, 1319, 1326, 1332, 1333, 1335, 1340, 1344, 1355, 1356, 1357, 1363, 1391, 1393, 1402, 1405, 1427, 1433, 1441, 1457, 1462, 1479, 1485, 1497, 1509, 1511, 1512, 1514, 1519, 1520, 1547, 1570, 1571, 1593, 1644, 1667, 1709, 1734, 1771, 1781, 1786, 1858, 1859, 1887, 1914, 1915, 1937, 1941, 1987, 2089, 2151

Soy Ice Cream Industry and Market Statistics, Trends, and Analyses—By Geographical Region 1509, 1512, 1570

Soy Ice Cream Industry and Market Statistics, Trends, and Analyses—Individual Companies 1069, 1128, 1171, 1319, 1509, 1514

Soy Ice Cream—Non-Soy Non-Dairy Relatives (As Made from Amazake, Fruit Juices, Peanuts, Field Peas, etc.) 1412

Soy infant formula. *See* Infant Formula, Soy-based

Soy is NOT Mentioned in the Document 18, 19, 31, 48, 49, 52, 63, 89, 91, 114, 204, 481, 736, 771, 782, 805, 863, 1140, 1147, 1186, 1233, 1252, 1257, 1265, 1361, 1415, 1438, 1469, 1586, 1587, 1591, 1624, 1625, 1631, 1713, 1773, 1837

Soy lecithin. *See* Lecithin, Soy

Soy Molasses or Soy Solubles—A By-Product of Making Soy Protein Concentrate Using the Aqueous Alcohol Wash Process. Rich in Isoflavones 1389, 1435, 1630, 1764, 1845, 1996, 1997, 2001

Soy Oil as a Commodity, Product, or Ingredient for Food Use (in Cookery or Foods). Its Manufacture, Refining, Trade, and Use. *See* Also: Industrial Uses of Soy Oil, and Nutrition: Lipids 15, 17, 20, 21, 22, 23, 27, 28, 29, 30, 32, 33, 34, 36, 38, 43, 45, 46, 47, 51, 53, 56, 58, 61, 64, 69, 78, 80, 87, 90, 92, 98, 101, 103, 105, 108, 113, 115, 123, 124, 129, 131, 132, 137, 139, 143, 153, 157, 158, 159, 170, 172, 174, 176, 177, 179, 193, 195, 198, 206, 210, 216, 218, 230, 236, 242, 245, 259, 260, 261, 265, 275, 276, 282, 288, 300, 310, 312, 316, 317, 318, 319, 321, 325, 327, 335, 341, 344, 353, 358, 368, 376, 387, 388, 393, 420, 421, 422, 423, 424, 425, 429, 430, 432, 433, 434, 455, 457, 460, 466, 473, 489, 499, 506, 508, 520, 540, 553, 559, 565, 598, 618, 640, 709, 750, 778, 820, 826, 828, 841, 862, 884, 898, 902, 904, 911, 934, 954, 968, 974, 983, 1013, 1021, 1023, 1025, 1032, 1055, 1062, 1063, 1064, 1065, 1066, 1067, 1081, 1084, 1090, 1104, 1130, 1132, 1146, 1150, 1151, 1160, 1169, 1176, 1184, 1188, 1191, 1194, 1217, 1218, 1220, 1240, 1244, 1247, 1338, 1348, 1350, 1373, 1396, 1419, 1420, 1422, 1432, 1436, 1474, 1503, 1507, 1535, 1695, 1709, 1718, 1731, 1772, 1787, 1830,

1907, 1920, 1953, 1988, 1992, 1996, 2003, 2026, 2027, 2033, 2038, 2064, 2071, 2075

Soy Oil Constants. Includes Index of Refraction, Refractive Index, Solidification Point (*Erstarrungspunkt*), Specific Gravity. *See* also Iodine Number 172, 175, 254

Soy Oil Constants—Iodine Number / Value 172, 175, 195, 254, 298, 1702, 1840

Soy oil—industry and market statistics. *See* Soybean Crushing

Soy Plant (The) (Ann Arbor, Michigan). *See* Rosewood Products Inc. (Ann Arbor)

Soy Protein and Proteins—Etymology of These Terms and Their Cognates / Relatives in Various Languages 492, 1323

Soy protein companies (Israel). *See* Hayes Ashdod Ltd. and Hayes General Technology

Soy protein companies (USA). *See* Borden, Inc., Delsoy Products, Inc., Drackett Co. (The), Glidden Co. (The), Grain Processing Corporation, Griffith Laboratories, Gunther Products, Inc., Laucks (I.F.) Co., Protein Technologies International (PTI), Rich Products Corporation, Solae Co. (The)

Soy Protein Concentrates, Textured 585, 684, 694, 713, 725, 729, 730, 733, 753, 759, 768, 770, 778, 794, 810, 814, 890, 894, 898, 932, 938, 980, 991, 1028, 1036, 1085, 1088, 1150, 1152, 1177, 1230, 1242, 1245, 1264, 1286, 1287, 1327, 1328, 1329, 1330, 1344, 1345, 1358, 1359, 1372, 1377, 1378, 1382, 1386, 1393, 1394, 1398, 1399, 1403, 1406, 1409, 1430, 1434, 1435, 1447, 1463, 1476, 1484, 1485, 1487, 1488, 1491, 1493, 1496, 1500, 1501, 1502, 1525, 1546, 1555, 1556, 1558, 1566, 1582, 1594, 1599, 1601, 1605, 1613, 1619, 1647, 1659, 1664, 1669, 1864, 1899, 1904, 1906, 1910, 1919, 1996, 1997, 2001, 2095, 2100, 2155

Soy Protein Council (Food Protein Council from 1971 to Dec. 1981) 581, 586, 651, 681, 683, 717, 721, 723, 742, 790, 812, 871, 890, 960, 976, 979, 1177, 1204, 1276, 1548, 1698, 1831, 1888, 1910, 1965, 2096

Soy Protein Isolates, Concentrates, or Textured Soy Protein Products—Industry and Market Statistics, Trends, and Analyses—By Geographical Region 465, 526, 533, 565, 580, 584, 609, 610, 646, 658, 666, 684, 701, 733, 778, 783, 787, 852, 883, 888, 911, 944, 976, 980, 991, 992, 993, 1010, 1027, 1028, 1090, 1166, 1175, 1177, 1194, 1204, 1221, 1228, 1231, 1264, 1276, 1337, 1349, 1431, 1435, 1467, 1502, 1509, 1522, 1546, 1570, 1584, 1605, 1699, 1700, 1720, 1764, 1852, 1853, 1856, 1859, 1886, 1904, 1909, 1910, 2153, 2154

Soy Protein Isolates, Concentrates, or Textured Soy Protein Products—Industry and Market Statistics, Trends, and Analyses—Individual Companies 467, 482, 654, 655, 656, 693, 703, 730, 737, 760, 854, 867, 868, 880, 893, 896, 951, 959, 978, 981, 994, 1010, 1011, 1069, 1078, 1090, 1136, 1187, 1207, 1221, 1272, 1277, 1318, 1321, 1323, 1328, 1337, 1341, 1344, 1349, 1351, 1353, 1380, 1393, 1412, 1459, 1485, 1488, 1503, 1509, 1518, 1519, 1527, 1544, 1566, 1593, 1598, 1611, 1667, 1671, 1694, 1700, 1701, 1715, 1725, 1822,

1852, 1853, 1909, 1926, 2153

Soy Protein Isolates, Textured (For Food Use Only, Including Spun Soy Protein Fibers or Soy Isolate Gels). See also: Industrial Uses of Soy Proteins–Fibers (Artificial Wool Made from Spun Soy Protein Fibers) 449, 455, 465, 466, 467, 476, 497, 507, 523, 525, 528, 529, 533, 534, 536, 553, 554, 555, 561, 568, 576, 577, 578, 580, 584, 585, 603, 604, 609, 611, 622, 646, 653, 655, 658, 666, 680, 684, 688, 694, 696, 700, 704, 710, 726, 727, 735, 742, 743, 760, 778, 796, 801, 810, 843, 845, 857, 861, 890, 923, 932, 945, 991, 1028, 1075, 1218, 1228, 1387, 1427, 1446, 1476, 1772, 1856, 1910, 1972, 2095, 2117, 2153, 2155

Soy Protein Products (General, or Modern Products). See also: Nutrition–Protein, Protein Quality, and Amino Acid Composition 164, 402, 415, 446, 447, 497, 505, 534, 538, 565, 566, 577, 578, 580, 586, 603, 604, 607, 609, 617, 629, 631, 640, 655, 680, 682, 696, 700, 701, 703, 710, 716, 717, 718, 721, 733, 734, 742, 760, 772, 787, 814, 830, 871, 883, 890, 945, 969, 971, 974, 976, 998, 1006, 1019, 1020, 1033, 1090, 1204, 1234, 1250, 1258, 1314, 1360, 1452, 1509, 1597, 1698, 1771, 1822, 1831, 1864, 1871, 1890, 1891, 1910, 1944, 1965, 1970, 2027, 2065, 2155

Soy Proteins–Concentrates 382, 399, 401, 410, 455, 465, 476, 526, 528, 529, 534, 565, 566, 578, 580, 584, 595, 604, 609, 611, 631, 637, 645, 649, 653, 654, 658, 666, 671, 673, 680, 684, 685, 694, 695, 696, 707, 713, 716, 718, 721, 725, 729, 730, 733, 742, 757, 759, 762, 768, 778, 787, 794, 801, 810, 825, 830, 849, 855, 874, 883, 888, 890, 896, 898, 902, 911, 913, 929, 930, 938, 945, 963, 991, 995, 998, 1028, 1071, 1072, 1082, 1083, 1085, 1088, 1091, 1108, 1123, 1141, 1150, 1166, 1177, 1184, 1212, 1216, 1228, 1231, 1232, 1238, 1241, 1245, 1246, 1262, 1264, 1277, 1304, 1323, 1329, 1330, 1337, 1341, 1344, 1349, 1380, 1393, 1419, 1427, 1431, 1435, 1447, 1456, 1463, 1466, 1522, 1523, 1527, 1535, 1536, 1539, 1544, 1546, 1554, 1563, 1570, 1594, 1598, 1601, 1605, 1613, 1642, 1659, 1667, 1698, 1699, 1700, 1705, 1720, 1731, 1764, 1772, 1785, 1822, 1830, 1845, 1853, 1864, 1867, 1871, 1883, 1886, 1891, 1899, 1904, 1906, 1909, 1910, 1926, 1952, 1988, 1996, 1997, 2001, 2080, 2089, 2090, 2093, 2095, 2117, 2153

Soy Proteins–Concentrates–Etymology of These Terms and Their Cognates / Relatives in Various Languages 666, 830, 1525

Soy Proteins–Detection When Added to Other Food Products (Such as Meat or Dairy Products, Wheat Flour or Baked Goods) 104, 603, 1050, 1105, 1904

Soy Proteins–Isolates–Enzyme-Modified Soy Protein with Whipping / Foaming Properties Used to Replace Egg Albumen, and Early Related Whipping / Aerating Agents or Products 94, 96, 195, 198, 222, 248, 465, 565, 603, 609, 721, 890, 1028, 1070, 1078, 1079, 1083, 1175, 1427, 1463, 1856, 1871, 1987

Soy Proteins–Isolates, for Food Use. See also: Isolates, for Industrial (Non-Food) Use 200, 324, 329, 336, 346, 356, 359, 376, 380, 386, 394, 399, 414, 416, 431, 448, 451, 455, 465, 497, 526, 529, 534, 565, 566, 578, 595, 603, 609, 631, 637, 653, 658, 666, 680, 701, 716, 721, 733, 742, 778, 787, 801, 808, 825, 830, 849, 851, 852, 854, 855, 860, 883, 888, 889, 890, 896, 898, 900, 902, 907, 911, 915, 929, 930, 937, 938, 939, 947, 952, 960, 961, 963,

974, 980, 982, 988, 991, 992, 993, 994, 995, 997, 1003, 1004, 1007, 1010, 1020, 1023, 1027, 1028, 1050, 1054, 1069, 1070, 1071, 1072, 1073, 1074, 1078, 1079, 1080, 1082, 1083, 1085, 1088, 1100, 1108, 1123, 1129, 1131, 1133, 1134, 1137, 1138, 1139, 1141, 1152, 1166, 1175, 1184, 1188, 1212, 1215, 1218, 1220, 1222, 1228, 1231, 1232, 1236, 1238, 1240, 1245, 1262, 1270, 1276, 1277, 1302, 1304, 1323, 1330, 1332, 1333, 1344, 1345, 1346, 1348, 1349, 1359, 1369, 1393, 1414, 1419, 1427, 1431, 1435, 1447, 1456, 1463, 1467, 1474, 1476, 1491, 1503, 1509, 1511, 1512, 1514, 1519, 1522, 1523, 1527, 1536, 1539, 1544, 1549, 1555, 1556, 1570, 1584, 1593, 1594, 1598, 1601, 1605, 1620, 1639, 1642, 1647, 1659, 1667, 1678, 1694, 1698, 1699, 1700, 1701, 1703, 1705, 1720, 1725, 1731, 1736, 1742, 1764, 1785, 1787, 1821, 1822, 1828, 1839, 1852, 1853, 1856, 1859, 1864, 1871, 1883, 1886, 1888, 1891, 1892, 1899, 1904, 1906, 1909, 1910, 1915, 1922, 1926, 1932, 1937, 1947, 1953, 1956, 1966, 1972, 1973, 1977, 1987, 1988, 1992, 2000, 2001, 2008, 2013, 2022, 2028, 2050, 2056, 2060, 2073, 2079, 2080, 2081, 2087, 2089, 2090, 2092, 2093, 2099, 2105, 2106, 2115, 2117, 2119, 2148, 2153, 2156

Soy Proteins–Properties (Including Types {Globulins, Glycinin, Beta- and Gamma-Conglycinin}, 7S & 11S Protein Fractions and Subunits, Sedimentation Coefficients, Nitrogen Solubility, and Rheology) 263, 492, 603, 855, 963, 1083, 1427, 1594, 1607, 1772, 1839, 1886, 1904, 1987, 2013

Soy Proteins–Textured–Etymology of These Terms and Their Cognates / Relatives in Various Languages 638, 664

Soy Proteins, Textured (General) 465, 490, 507, 526, 528, 532, 533, 544, 548, 555, 562, 567, 568, 573, 576, 577, 580, 581, 583, 585, 588, 592, 595, 604, 608, 610, 612, 637, 638, 639, 648, 650, 658, 665, 666, 684, 699, 716, 719, 722, 728, 735, 742, 758, 762, 770, 774, 783, 787, 788, 815, 830, 843, 849, 944, 950, 1031, 1092, 1115, 1123, 1153, 1154, 1160, 1239, 1277, 1295, 1308, 1425, 1426, 1431, 1449, 1450, 1473, 1492, 1521, 1527, 1531, 1532, 1570, 1589, 1608, 1609, 1610, 1618, 1628, 1629, 1648, 1650, 1652, 1653, 1654, 1655, 1656, 1677, 1709, 1783, 1785, 1825, 1871, 1888, 1935, 1953, 1970, 1988, 1992, 2148

Soy Proteins–Textured, in Dry Cereal-Soy Blends 533, 572, 710, 751, 950, 1111, 1209

Soy Proteins–Textured Isolates–Etymology of These Terms and Their Cognates / Relatives in Various Languages 576, 857

Soy Proteins–Used as an Ingredient in or for Early Second Generation Commercial Food or Beverage Products 222, 401, 572, 573, 659

Soy Pudding, Custard, Parfait, or Mousse (Usually made from Soymilk, Non-Dairy Milk, or Tofu). See also Soy Yogurt–Not Fermented 79, 142, 361, 845, 860, 861, 952, 1031, 1160, 1162, 1179, 1205, 1207, 1263, 1280, 1304, 1339, 1356, 1499, 1523, 1542, 1571, 1617, 1651, 1898, 1903, 1914, 1919, 1967, 2062, 2082

Soy sauce. See Hoisin / Haisien Sauce, Tamari, Teriyaki Sauce and Teriyaki (Soy Sauce is the Main Sauce Ingredient), Worcestershire Sauce

Soy sauce companies (Asia & USA). See San Jirushi Corp., and

- San-J International (Kuwana, Japan; and Richmond, Virginia) 886, 902, 911, 942, 945, 989, 1000, 1056, 1059, 1202, 1220, 1422, 1456, 1489, 1495, 1497, 1684, 1698, 1731, 1732, 1736, 1739, 1742, 1791, 1888, 1988, 2018, 2087
- Soy sauce companies (international). *See* Kikkoman Corporation (Tokyo, Walworth, Wisconsin; and Worldwide)
- Soy sauce companies or brands (USA). *See* Oriental Show-You Co
- Soy Sauce, HVP Type (Non-Fermented or Semi-Fermented, Made with Acid-Hydrolyzed Vegetable Protein; an Amino Acid Seasoning Solution Rich in Glutamic Acid). Also Called Pejoratively Chemical Soy Sauce 655, 727, 780, 831, 1263, 1611
- Soy Sauce (Including Shoyu). *See* Also Tamari, Teriyaki Sauce, and Traditional Worcestershire Sauce 79, 123, 139, 142, 290, 324, 361, 376, 411, 496, 504, 512, 688, 715, 723, 767, 791, 802, 810, 812, 838, 839, 848, 856, 858, 860, 869, 888, 897, 902, 911, 942, 945, 960, 989, 995, 1000, 1017, 1018, 1021, 1031, 1050, 1055, 1056, 1059, 1090, 1100, 1146, 1150, 1160, 1161, 1162, 1202, 1218, 1220, 1240, 1263, 1283, 1313, 1317, 1336, 1346, 1366, 1388, 1395, 1407, 1418, 1420, 1421, 1456, 1463, 1495, 1509, 1546, 1553, 1559, 1606, 1612, 1635, 1644, 1665, 1678, 1709, 1731, 1732, 1733, 1734, 1736, 1741, 1742, 1770, 1772, 1789, 1888, 1937, 1941, 1952, 1988, 2018, 2023, 2027, 2028, 2062, 2083, 2087, 2088, 2090, 2095, 2097
- Soy Sauce, Indonesian Style or from the Dutch East Indies (Kecap, Kécap, Kechap, Ketjap, Kétjap). *See* also Ketchup / Catsup 1263
- Soy Sauce, Indonesian Sweet, Kecap Manis / Ketjap Manis. Indonesian Sweet Thick Spicy Soy Sauce / Indonesian Thick Sweet Soy Sauce 1056, 1263
- Soy Sauce Industry and Market Statistics, Trends, and Analyses—By Geographical Region 888, 911, 1090, 1509
- Soy Sauce Industry and Market Statistics, Trends, and Analyses—Individual Companies 1090, 1509
- Soy Sauce, Pale (*Shiro Shoyu*). Made in the Mikawa region of Central Japan near Nagoya. *Shiro* Means White in Japanese 945
- Soy sauce, price of. *See* Price of Soy Sauce, Worcestershire Sauce, or Early So-Called Ketchup (Which Was Usually Indonesian Soy Sauce)
- Soy Sauce—Saishikomi Shoyu (Twice-Brewed) 945
- Soy Sauce, Used as an Ingredient in Commercial Products 726, 834, 936, 949, 1076, 1138, 1165, 1196, 1315
- Soy Sprouts—Etymology of This Term and Its Cognates / Relatives in Various Languages 79
- Soy Sprouts, Homemade—How to Grow at Home or on a Laboratory Scale, by Hand 840
- Soy Sprouts Industry and Market Statistics, Trends, and Analyses—By Geographical Region 911
- Soy Sprouts (Sprouted or Germinated Soybeans) for Food Use 79, 123, 324, 361, 376, 603, 688, 756, 767, 791, 810, 839, 840, 869,
- Soy whip topping. *See* Whip Topping
- Soy wine. *See* Fermented Specialty Soyfoods
- Soy Yogurt—Etymology of This Term and Its Cognates / Relatives in Various Languages 945
- Soy Yogurt—Fermented / Cultured 672, 723, 803, 828, 849, 945, 973, 1087, 1106, 1107, 1156, 1161, 1168, 1224, 1255, 1267, 1309, 1317, 1356, 1433, 1445, 1448, 1453, 1511, 1512, 1513, 1514, 1606, 1626, 1627, 1646, 1786, 1937, 1987, 1992, 1995, 2025, 2061, 2082, 2088
- Soy Yogurt (Generally Non-Dairy) 603, 804, 1128, 1131, 1146, 1220, 1240, 1283, 1301, 1307, 1332, 1391, 1393, 1402, 1441, 1457, 1462, 1485, 1509, 1519, 1520, 1523, 1536, 1547, 1559, 1571, 1593, 1630, 1734, 1741, 1858, 1860, 1914
- Soy Yogurt Industry and Market Statistics, Trends, and Analyses—By Geographical Region 1509, 1513, 1514
- Soy Yogurt Industry and Market Statistics, Trends, and Analyses—Individual Companies 1509
- Soy Yogurt—Not Fermented. Typically Made with Tofu (Includes varieties “with active cultures” that are not actually cultured / fermented) 1150, 1167
- Soya Corporation of America and Dr. Armand Burke. *See* Also Dr. Artemy A. Horvath 142, 160, 242
- Soya Foods Ltd [Named Soya Flour Manufacturing Co. Ltd. (1929-42), and Soya Foods Ltd. (1933)]. *See* Spillers Premier Products Ltd.
- Soya Health Foods Ltd. (Manchester, England). Including Michael Cole and his Soya International Ltd. 1087, 1128, 1133, 1137, 1163, 1171, 1173, 1174, 1255, 1259, 1301, 1302, 1303, 1332, 1333, 1339, 1340, 1354, 1356, 1392, 1511, 1512, 1606
- Soya Kaas Inc. *See* Swan Gardens Inc. and Soya Kaas Inc.
- Soya—Soybean Production and Soy Products 869, 1055
- Soyana (Zurich, Switzerland) 866, 921, 984, 1004, 1006, 1008, 1049, 1127, 1183, 1301, 1322, 1339, 1354, 1356, 1499
- Soyanews: Monthly Newsletter Published by CARE in Colombo, Sri Lanka (1978-1990) 859, 946, 956, 1211, 1299
- Soyastern Naturkost GmbH / Dorstener Tofu Produktions GmbH (Dorsten, Germany). Acquired by Huegli in April 1991 1042, 1049, 1182, 1183, 1278, 1322, 1354, 1356, 1859
- Soyatech (Publisher of Soya Bluebook and Soya Newsletter, Bar Harbor, Maine. Note: In March 1980 Peter Golbitz and Sharyn

Kingma started Island Tofu Works, a tofu manufacturing company, in Bar Harbor, Maine) 1167, 1175, 1216, 1258, 1273, 1328, 1329, 1330, 1414, 1572, 1573, 1642, 1689, 1692, 1712, 1714, 1747, 1754, 1757, 1777, 1778, 1791, 1846, 1847, 1863, 1875, 1901, 1921, 1962, 1967, 1969, 1978, 2017, 2035, 2039, 2044, 2054, 2060, 2064, 2073, 2081, 2091, 2092, 2099, 2101, 2106, 2115, 2119

SoyaWax International (Cedar Rapids, Iowa), Michael Richards, and Heartland Candleworks Inc. or Candle in the Window 1918, 1975, 1976

SoyaWorld Inc. *See* ProSoya

SoyaWorld, Inc. (Near Vancouver, British Columbia, Canada). Started 1997. Acquired in 2002 by Sanitarium Foods of Australia 1872, 1887, 1945, 2027

Soybean Council of America. *See* American Soybean Association (ASA)—Soybean Council of America

Soybean crushers (Asia). *See* Ajinomoto Co. Inc. (Tokyo, Japan), Fuji Oil Co., Ltd. (Osaka, Japan), Incl. Fuji Purina Protein Ltd., Nisshin Oil Mills, Ltd. (Tokyo, Japan), Ruchi Soya Industries Ltd. (India), Yoshihara Oil Mill, Ltd. (Kobe, Japan)

Soybean crushers (Canada). *See* ADM Agri-Industries Ltd. (Windsor, Ontario, Canada), CanAmera Foods (Hamilton, Ontario, Canada), Victory Soya Mills Ltd. (Toronto, Ontario)

Soybean Crushers (Canada), Early (Started Before 1941)—Milton Oil Refineries Ltd. (Milton, Ontario; March 1930—Renamed Canadian Soyabeans Ltd. by Nov. 1932), Dominion Linseed Oil Co. (Baden, ONT; 1932), Soy Bean Oil and Meal Co-operative Company of Canada, Ltd. (Chatham, ONT; 1932), Dominion Soya Industries / Dominion Soya Products Co. (Montreal, Quebec; spring 1935), Soya Mills Limited (Stratford, ONT; Jan. 1936), Edgar Soya Products (Belle River, Ontario; 1936), Toronto Elevators Ltd. (Toronto, ONT; 1938) 38, 43, 61, 64, 98, 193, 209, 231, 282, 284, 618, 837, 873, 954, 1507, 1632

Soybean Crushers (Europe). *See* Unilever Corp., Lever Brothers Co., Unimills B.V. (Netherlands)

Soybean crushers (Europe). *See* Ferruzzi-Montedison (Italy), Hansa Muehle (Hamburg, Germany), Harburger Oelwerke Brinckmann und Mergell (Harburg, near Hamburg, Germany), Nolee & Thoeerl GmbH (Hamburg, Germany), Oelmuehle Hamburg AG (Hamburg, Germany), Stettiner Oelwerke (Stettin, Germany), Vandemoortele N.V. (Izegem, Netherlands)

Soybean crushers (USA). *See* Allied Mills, Inc., Archer Daniels Midland Co. (ADM) (Decatur, Illinois), Bunge Corp. (White Plains, New York), Cargill, Inc. (Minneapolis, Minneapolis), Central Soya Co. (Fort Wayne, Indiana), Chicago Heights Oil Co. (Chicago Heights, Illinois), Continental Grain Co. (New York, New York), Dannen Mills (St. Joseph, Missouri), Delphos Grain & Soya Products Co. (Delphos, Ohio), Honeymead Products Co., Lauhoff Grain Co. (Danville, Illinois), Pillsbury Feed Mills and Pillsbury Co. (Minneapolis, Minnesota), Procter & Gamble Co. (Cincinnati, Ohio). Including the Buckeye Cotton Oil Co., Quincy

Soybean Products Co. (Quincy, Illinois), Ralston Purina Co. (St. Louis, Missouri), Shellabarger Grain Co. / Shellabarger Soybean Mills (Decatur, Illinois), Spencer Kellogg & Sons, Inc. (Buffalo, New York), Staley (A.E.) Manufacturing Co. (Decatur, Swift & Co. (Illinois)

Soybean Crushers (USA). *See* Seed Companies, Soybean—Funk Brothers Seed Co. (Bloomington, Illinois)—After 1924, Sinaiko Family and Iowa Milling Co. (Cedar Rapids, Iowa)

Soybean crushers (USA), Cooperative. *See* AGRI Industries, Inc. (Iowa), Ag Processing Inc a cooperative (AGP), Boone Valley Cooperative Processing Association (Eagle Grove, Iowa), CHS Cooperatives, Including Cenex, Inc. and Harvest States Cooperatives (Which Includes Honeymead), Dawson Mills (Dawson, Minnesota), Far-Mar-Co, Inc., Farmers Union Grain Terminal Association (GTA), Farmland Industries, Inc., Gold Kist, Honeymead (Mankato, Minnesota), Land O'Lakes, Inc., Missouri Farmers Association (MFA), Monticello Co-operative Soybean Products Co. (Monticello, Piatt Co., Illinois), North Iowa Cooperative Processing Association, (Manly, Iowa), Ohio Valley Soybean Cooperative (Henderson, Kentucky), Riceland Foods (Named Arkansas Grain Corp. before Sept. 1970)

Soybean Crushers (USA), Cooperative—General and Other 242, 319, 579, 806, 899, 905, 1103, 1551, 1685

Soybean crushers (USA), Early. *See* Elizabeth City Oil and Fertilizer Co. (Elizabeth City, North Carolina; 1915)

Soybean Crushers (USA), Early—Pacific Oil Mills and Albers Brothers Milling Co. (Seattle, Washington; 1911), Elizabeth City Oil and Fertilizer Co. (Elizabeth City, North Carolina; 1915. By 1917 six other North Carolina oil mills were crushing soybeans), Chicago Heights Oil Mfg. Co. (Chicago Heights, Illinois; 1920), A.E. Staley Mfg. Co. (Decatur, Illinois; 1922), Piatt County Cooperative Soy Bean Co. (Monticello, Illinois; 1923—batch solvent), Blish Milling Co. (Seymour and Crothersville, Indiana; 1923), Eastern Cotton Oil Co. (Norfolk, Virginia; 1924—continuous solvent) 15, 27, 29, 58, 129, 137, 139, 153, 159, 175, 218, 220, 242, 559, 750, 971, 972

Soybean Crushers (USA), Small Crushers—Arkansas Grain Corp. (Helena & Stuttgart, Arkansas), Hemphill Soy Products (Kennett, Missouri), Old Fort Mills (Marion, Ohio), Sioux Soya Mills (Sioux City, Iowa), Soy Bean Processing Co. (Waterloo, Iowa), Soybean Products, Inc. (Cedar Rapids, Iowa), Southern Soya Corp. (Cameron, South Carolina), Soy-Rich Products (Wichita, Kansas), Toledo Soybean Products (Toledo, Ohio) Western Soybean Mills (Sioux Falls, South Dakota), etc.. 15, 113, 132, 137, 139, 159, 177, 182, 211, 240, 242, 2157

Soybean Crushing—Equipment—Hydraulic Presses 15, 22, 23, 34, 42, 45, 51, 58, 61, 72, 76, 121, 129, 175, 176, 182, 217, 218, 242, 299, 300, 312, 313, 361, 376, 520, 556, 691, 1862

Soybean Crushing—Equipment—Screw Presses and Expellers (Continuous, Mechanical) 15, 22, 42, 43, 45, 51, 58, 61, 64, 72, 76, 109, 121, 129, 137, 139, 143, 149, 156, 158, 159, 160, 175, 179, 182, 198, 202, 216, 217, 218, 220, 242, 254, 284, 293, 299, 300,

310, 312, 313, 327, 344, 361, 472, 520, 521, 556, 557, 559, 579, 603, 616, 690, 691, 842, 844, 934, 944, 954, 955, 971, 1021, 1079, 1085, 1091, 1150, 1305, 1364, 1432, 1668, 1718, 1879, 1881, 2016, 2036, 2092, 2152, 2157

Soybean Crushing—Equipment—Solvent Extraction 15, 23, 34, 42, 44, 45, 47, 50, 51, 58, 61, 64, 68, 72, 76, 98, 106, 108, 121, 122, 129, 159, 175, 177, 179, 182, 183, 198, 216, 218, 220, 230, 242, 248, 260, 264, 273, 275, 276, 283, 284, 288, 293, 298, 299, 300, 310, 312, 313, 327, 344, 361, 376, 405, 472, 479, 491, 520, 521, 556, 557, 559, 579, 603, 691, 750, 850, 899, 931, 934, 938, 944, 955, 983, 1021, 1075, 1079, 1080, 1082, 1088, 1091, 1191, 1227, 1348, 1364, 1432, 1455, 1471, 1474, 1620, 1632, 1820, 1862, 1881, 1955, 1981, 2011, 2016, 2020, 2036, 2064, 2121, 2157

Soybean Crushing—Equipment—Wedge Press and Hand-Turned Screw Press (Early Technology from China and Manchuria) 175

Soybean Crushing—Explosions and/or Fires in Soybean Solvent Extraction Plants (Making Soy Oil and Soybean Meal) 129, 158, 245, 288, 313, 344, 654, 750, 1079, 1080, 1142, 1144, 1305, 1879, 1913, 2020, 2157

Soybean Crushing (General: Soy / Soybean Oil and Soybean Meal) 42, 110, 111, 122, 125, 131, 140, 142, 147, 154, 155, 165, 183, 185, 186, 189, 190, 199, 208, 209, 220, 221, 238, 248, 255, 264, 284, 293, 298, 299, 313, 343, 367, 370, 380, 383, 402, 405, 409, 410, 436, 450, 456, 461, 464, 471, 479, 498, 514, 521, 531, 560, 574, 579, 603, 629, 647, 649, 667, 759, 768, 806, 821, 844, 849, 899, 905, 931, 945, 958, 961, 1033, 1043, 1047, 1048, 1075, 1091, 1097, 1102, 1103, 1143, 1149, 1212, 1214, 1222, 1249, 1261, 1270, 1304, 1305, 1344, 1364, 1376, 1379, 1383, 1393, 1441, 1444, 1447, 1458, 1485, 1508, 1539, 1544, 1551, 1600, 1602, 1636, 1667, 1679, 1710, 1715, 1727, 1728, 1746, 1768, 1781, 1791, 1820, 1848, 1877, 1878, 1879, 1881, 1895, 1905, 1906, 1931, 1932, 1952, 1963, 1981, 1986, 1998, 2006, 2019, 2037, 2041, 2052, 2059, 2060, 2072, 2078, 2086, 2095, 2121, 2122, 2126, 2144

Soybean Crushing, Including Production and Trade of Soybean Oil, Meal or Cake, Margarine, or Shortening—Industry and Market Statistics, Trends, and Analyses—32, 44, 68, 74, 83, 86, 115, 116, 129, 137, 139, 153, 175, 189, 218, 230, 279, 361, 393, 489, 498, 574, 598, 623, 644, 690, 709, 821, 824, 826, 841, 870, 876, 898, 899, 904, 934, 971, 986, 987, 1007, 1010, 1029, 1032, 1033, 1067, 1068, 1084, 1090, 1091, 1102, 1103, 1104, 1130, 1132, 1140, 1149, 1151, 1178, 1186, 1188, 1209, 1210, 1212, 1214, 1217, 1222, 1231, 1233, 1244, 1247, 1260, 1270, 1276, 1344, 1350, 1376, 1436, 1441, 1503, 1505, 1509, 1566, 1600, 1710, 1712, 1719, 1727, 1762, 1778, 1847, 1875, 1901, 1962, 2017, 2039, 2054, 2060, 2073, 2081, 2092, 2099, 2106, 2115, 2119

Soybean Crushing—New Soybean Crusher 17, 22, 23, 33, 34, 43, 45, 69, 98, 108, 113, 174, 176, 177, 216, 276, 368, 387, 388, 1062, 1063, 1064, 1065, 1066, 1191

Soybean Crushing—Processing Capacity and/or Storage Capacity of Individual Plants—Statistics 43, 1249

Soybean crushing—solvents. *See* Solvents

Soybean—General Comprehensive and Basic Important Publications about Soybeans 1972, 1988, 2064, 2132

Soybean—Genetic Diversity, Variability and Population Structure 1081

Soybean Marketing Association (1929-1932). Organized at Decatur, Illinois on 16 Oct. 1929 26

Soybean Meal / Cake, Fiber (as from Okara), or Shoyu Presscake as a Fertilizer or Manure for the Soil or for Fish Ponds—Industrial Uses 122, 171, 173, 361, 362, 683, 790, 903, 1350, 1972

Soybean Meal—Etymology of This Term and Its Cognates / Relatives in Various Languages 106, 691, 1032

Soybean meal pellets. *See* Pellets Made from Soybean Meal

Soybean Meal (SBM) (Defatted). Formerly Called Bean Cake, Beancake, Soybean Cake, Oilmeal, or Presscake 15, 17, 22, 23, 26, 30, 33, 34, 37, 38, 39, 43, 44, 45, 50, 51, 58, 59, 60, 61, 68, 69, 70, 72, 74, 76, 79, 80, 81, 82, 83, 86, 87, 88, 90, 93, 94, 95, 96, 97, 98, 106, 107, 108, 109, 112, 113, 116, 120, 121, 123, 124, 125, 129, 131, 134, 136, 137, 139, 143, 146, 148, 151, 153, 156, 158, 159, 166, 170, 171, 173, 174, 175, 176, 177, 179, 181, 182, 185, 187, 188, 193, 202, 206, 211, 213, 215, 216, 217, 220, 225, 234, 236, 242, 245, 251, 265, 266, 270, 273, 274, 275, 276, 277, 281, 282, 283, 285, 287, 288, 291, 293, 298, 299, 300, 302, 309, 310, 312, 321, 325, 326, 327, 331, 332, 334, 335, 337, 341, 344, 346, 347, 348, 349, 350, 354, 356, 361, 362, 366, 368, 376, 386, 387, 388, 393, 394, 399, 426, 466, 470, 472, 491, 506, 517, 525, 540, 546, 556, 557, 559, 565, 574, 579, 598, 612, 618, 620, 623, 631, 644, 645, 671, 683, 690, 691, 709, 721, 750, 755, 769, 778, 790, 820, 824, 826, 829, 837, 841, 850, 852, 873, 885, 894, 903, 904, 932, 934, 938, 944, 954, 955, 959, 971, 983, 986, 995, 999, 1009, 1010, 1032, 1055, 1062, 1063, 1064, 1065, 1066, 1068, 1071, 1085, 1088, 1107, 1108, 1109, 1144, 1145, 1164, 1169, 1178, 1191, 1194, 1202, 1227, 1266, 1279, 1300, 1348, 1350, 1375, 1379, 1436, 1455, 1456, 1474, 1503, 1504, 1507, 1528, 1535, 1537, 1541, 1566, 1581, 1593, 1601, 1620, 1630, 1632, 1636, 1640, 1680, 1694, 1702, 1709, 1718, 1719, 1746, 1753, 1762, 1764, 1772, 1840, 1853, 1882, 1895, 1913, 1954, 1955, 1972, 2011, 2015, 2016, 2018, 2020, 2030, 2038, 2040, 2043, 2048, 2064, 2076, 2095, 2128, 2138, 2152, 2157

Soybean—Morphology, Structure, and Anatomy of the Plant and Its Seeds 688

Soybean—Morphology, Structure, and Anatomy of the Plant and Its Seeds as Determined by Microscopy or Microscopic Examination 694

Soybean oil. *See* Soy Oil

Soybean oil constants. *See* Soy Oil Constants

Soybean paste. *See* Miso

Soybean pellets. *See* Pellets Made from Soybean Meal

Soybean—Physiology and Biochemistry (Including Photoperiodism,

- Photosynthesis, Translocation, Plant Water Relations, Respiration, Photorespiration) 688
- Soybean–Physiology–Photoperiod Insensitivity / Daylength Neutrality 688
- Soybean processing. *See* Soybean Crushing
- Soybean production. *See*–Fertilizers and Plant Nutrition, Crop Rotation of Soybean Plants for Soil Improvement, Cultural Practices, Green Manure, Harvesting and Threshing, Identity Preserved / Preservation, Organically Grown Soybeans, Peoria Plan of 1928-29 for Growing, Selling, and Processing Soybeans, Plant Protection from Diseases, Pests and Other Types of Injury (General), Precision Agriculture / Farming (Based on GPS–Global Positioning System), Price of Soybeans, Soybean Seeds and Soybean Products–Except Sauces (Which See), Seed Quality, Yield Statistics, Soybean
- Soybean production–Farm equipment. *See* Machinery (Agricultural), Implements, Equipment, and Mechanization
- Soybean production–Farm machinery. *See* Combines
- Soybean production–Farm Machinery. *See* Tractors
- Soybean Production–General, and Amount Produced 42, 115, 123, 139, 153, 157, 192, 290, 313, 335, 343, 399, 402, 440, 489, 618, 821, 870, 945, 968, 999, 1033, 1090, 1181, 1238, 1348, 1456, 1509, 1946, 2018, 2037, 2048, 2064
- Soybean Production–Industry and Market Statistics, Trends, and Analyses 945, 1005, 1027, 1090, 1213, 1216, 1260, 1456, 1509, 1544, 1566, 1705, 1907
- Soybean production–Marketing. *See* Chicago Board of Trade (CBOT), Marketing Soybeans, Railroads / Railways and Special Trains and/or Exhibit Cars Used to Promote Soybeans and Soybean Production, Soybean Marketing Association (1929-1932)
- Soybean production–Nitrogen Fixation and Inoculation. *See* Nitragin Inoculant and The Nitragin Company, Urbana Laboratories
- Soybean production, organic. *See* Organic Soybean Production
- Soybean production–Plant protection. *See* Diseases (Bacterial, Fungal, and Viral / Virus), Insects–Pest Control. *See* also: Integrated Pest Management, Integrated Pest Management (IPM) and Biological Control, Pesticides (General), Weeds–Control and Herbicide Use
- Soybean production–Research. *See* Research on Soybeans
- Soybean Rust (Fungal Disease) 1998
- Soybean Seeds–Black in Color. Food Use is Not Mentioned 94, 96, 1678, 1732, 2050, 2083
- Soybean Seeds–Black in Color. Used as Food (Including in Fermented Black Soybeans and Inyu), Beverage, Feed, or Medicine, or Their Nutritional Value 767, 839, 1240, 2097
- Soybean Seeds–Green in Color. Food Use is Not Mentioned. Early Named Varieties Include Aoda, Columbia, Giant Green, Guelph or Medium Green, Medium Early Green, Medium Green, Samarow, Sonoma, and Tashing 198
- Soybean Seeds–Yellow in Color. Including Yellowish White, Cream Colored, and Pale (*Pallida*). Especially Early Records. *See* also: Soybean Seeds–White 137, 139, 618
- Soybean Varieties Canada–Harosoy 618, 1033
- Soybean Varieties Canada–Harovinton–Large-Seeded and / or Vegetable-Type 1338
- Soybean Varieties Canada–Maple Arrow 1030, 1033
- Soybean Varieties Canada–O.A.C. 211–Early Development 618, 1033
- Soybean Varieties USA–A.K.–Early Introduction 618, 1033
- Soybean Varieties USA–Bansei–Large-Seeded and / or Vegetable-Type 324
- Soybean Varieties USA–Dunfield–Early Introduction 94, 96
- Soybean Varieties USA–Early Yellow–Early Introduction. Renamed Ito San by about 1902 618
- Soybean Varieties USA–Emperor–Large-Seeded and / or Vegetable-Type 324
- Soybean Varieties USA–Fuji–Large-Seeded and / or Vegetable-Type 324
- Soybean Varieties USA–Funk Delicious–Large-Seeded and / or Vegetable-Type 324
- Soybean Varieties USA–Giant Green–Large-Seeded and / or Vegetable-Type 324
- Soybean Varieties USA–Habaro–Early Introduction. Also spelled “Habara” in Canada 139
- Soybean Varieties USA–Haberlandt–Early Introduction 139
- Soybean Varieties USA–Higan–Large-Seeded and / or Vegetable-Type 324
- Soybean Varieties USA–Hokkaido–Large-Seeded and / or Vegetable-Type 324
- Soybean Varieties USA–Illington–Large-Seeded and / or Vegetable-Type 324
- Soybean Varieties USA–Imperial–Large-Seeded and / or Vegetable-Type 324

- Soybean Varieties USA–Ito San–Early Introduction. Synonyms–Medium Early Yellow, Early White, Early Yellow, Kaiyuski Daizu, Kiyusuki Daidzu, Kysuki, Yellow Eda Mame, Dwarf Early Yellow, Early, Eda Mame, Coffee Berry 618
- Soybean Varieties USA–Jogun–Large-Seeded and / or Vegetable-Type 324
- Soybean Varieties USA–Mammoth Yellow–Early Introduction 137, 139, 153
- Soybean Varieties USA–Manchu–Early Introduction 94, 96
- Soybean Varieties USA–Mandarin–Early Introduction 94, 96, 618, 1033
- Soybean Varieties USA–Peking / Pekin–Early Selection (1907) 94, 96
- Soybean Varieties USA–Tastee–Large-Seeded and / or Vegetable-Type 142
- Soybean Varieties USA–Vinton 81–Large-Seeded and / or Vegetable-Type 1536
- Soybean Varieties USA–Willomi–Large-Seeded and / or Vegetable-Type 324
- Soybeans, black. *See* Soybean Seeds–Black in Color
- Soybeans, ground (used as food). *See* Whole Dry Soybeans
- Soybeans, whole dry (used unprocessed as food). *See* Whole Dry Soybeans
- Soyco Foods. *See* Galaxy Nutritional Foods, Inc. (Orlando, Florida)
- Soyfood products, commercial. *See* Commercial Soy Products–New Products
- Soyfoods Association of North America (SANA). Founded 30 June 1978 in Ann Arbor, Michigan 816, 848, 849, 881, 911, 1547, 1565, 1573, 1622, 1689, 1745, 1747, 1754, 1797, 1800, 1961, 2012, 2129, 2133
- Soyfoods Associations in Canada (Soyfoods Canada) 1872, 1887, 1945
- Soyfoods Associations in Europe 1645
- Soyfoods Center. *See* Soyinfo Center (Lafayette, California)
- Soyfoods companies (Canada). *See* Yves Veggie Cuisine (Vancouver, BC, Canada)
- Soyfoods companies (England). *See* Itona
- Soyfoods companies (Europe). *See* Albert’s Tofuhaus (Lautersheim, Germany), British Arkady Company Ltd. (Manchester, England), Bruno Fischer GmbH (Aetorf, Germany), Galactina S.A. (Belp, Switzerland), Haldane Foods Group Ltd. (Newport Pagnell, Buckinghamshire, England), Henselwerk GmbH (Magstadt near Stuttgart, Germany), Huegli Naehrmittel A.G. (Steinach-Arbon, Switzerland), Innoval / Sojalpe, Jonathan P.V.B.A. (Kapellen, Belgium), Lima N.V. / Lima Foods (Sint-Martens-Latem, Belgium; and Mezin, France), Manna Natural Foods (Amsterdam, The Netherlands), Migros & Conserves Estavayer (Estavayer-le-Lac, Switzerland), Nutrition et Nature (Revel near Toulouse, France) Toulouse, France). Founded in June, Sojinal / Biosoja (Formerly Cacoja), Soya Health Foods Ltd. (Manchester, England), Soyana (Zurich, Switzerland), Tofutown.com (Wiesbaum / Vulkaneifel, Germany), Triballat (Noyal-sur-Vilaine, France). Makers of Sojasun
- Soyfoods companies (USA). *See* Farm Food Co. (San Rafael, then San Francisco, California), Farm Foods, and Farm Soy Dairy, Galaxy Nutritional Foods, Inc. and its Soyco Foods Div. (Orlando, Florida), GeniSoy Products Co. (Fairfield, California), Hain Celestial Group, Inc. (Uniondale, New York), Lightlife Foods, Inc. (Turners Falls, Massachusetts), Rella Good Cheese Co. (Santa Rosa, California). Previously Brightsong Tofu, SunRich Food Group (Hope, Minnesota), Swan Food Corp. (Miami, Florida), White Wave, Inc. (Boulder, Colorado)
- Soyfoods (General Food Uses of Soybeans) 142, 338, 361, 497, 544, 596, 629, 723, 856, 860, 890, 895, 897, 960, 1042, 1050, 1059, 1090, 1107, 1108, 1150, 1420, 1433, 1446, 1463, 1536, 1559, 1678, 1693, 1712, 1716, 1731, 1733, 1736, 1741, 1742, 1751, 1770, 1778, 1822, 1823, 1831, 1841, 1847, 1854, 1867, 1872, 1875, 1883, 1887, 1888, 1901, 1916, 1934, 1960, 1962, 1964, 1969, 1970, 1983, 1984, 1992, 2002, 2017, 2035, 2039, 2050, 2054, 2060, 2073, 2081, 2089, 2090, 2092, 2099, 2106, 2115, 2119
- Soyfoods Industry and Market Statistics, Trends, and Analyses–By Geographical Region. Includes per capita consumption of soybeans 848, 902, 911, 945, 1185, 1216, 1250, 1299, 1320, 1336, 1414, 1446, 1705, 1797, 1847, 1854, 1863, 1875, 1911, 1969
- Soyfoods Industry and Market Statistics, Trends, and Analyses–Individual Companies 482, 736, 737, 1274, 1295, 1412, 1462, 1510, 1520, 1521
- Soyfoods movement. *See* Farm (The) (Summertown, Tennessee), Plenty (The Farm, Summertown, Tennessee), Plenty Canada and The Farm in Canada (Lanark, Ontario, Canada), Plenty International (Summertown, Tennessee), Rodale Press (Emmaus, Pennsylvania), Soy Daily (The), Soyatech (Bar Harbor, Maine), Soyfoods Association of North America (SANA)
- Soyfoods Movement in Asia (Traditionally Non-Soy Countries Such as India) 809, 944, 958, 959
- Soyfoods Movement in Europe 530, 738, 921, 935, 941, 973, 984, 1004, 1006, 1007, 1008, 1026, 1042, 1049, 1059, 1060, 1089, 1128, 1160, 1174, 1183, 1269, 1294, 1297, 1303, 1304, 1319, 1320, 1322, 1324, 1339, 1351, 1352, 1353, 1354, 1370, 1388, 1391, 1433, 1463, 1498, 1645, 1749
- Soyfoods Movement in Mexico and Central America 1106, 1258, 1933, 2151

Soyfoods Movement in North America (USA & Canada, General) 715, 816, 881, 979, 1081, 1100, 1106, 1119, 1150, 1180, 1469, 1606, 1646, 1725, 1859, 1888, 1966, 2056

Soyfoods Movement in the Caribbean 1106

Soyfoods Movement—Periodicals, Including Soycraft, Soyfoods, Soya Foods, Soya Newsletter, Soya International, Soyfoods Canada Newsletter, etc 860, 1004, 1050, 1107, 1108, 1273

Soyfoods Movement—Soyfoods Restaurants or Delis 886, 902, 945, 1090, 1509

Soyfoods restaurants or delis. *See* Soyfoods Movement—Soyfoods Restaurants or Delis

Soyfoods Unlimited, Inc. (San Leandro, California). Founded by John, Valerie, and Gary Robertson. Began Making Tempeh on 15 Feb. 1981. Acquired by White Wave on 1 Dec. 1987 848, 1278

Soyinfo Center (Lafayette, California). Named Soyfoods Center until 1 Jan. 2007. Founded by William and Akiko Shurtleff 715, 723, 791, 817, 848, 849, 852, 860, 888, 901, 902, 911, 945, 958, 960, 979, 987, 989, 995, 997, 1028, 1034, 1050, 1090, 1107, 1108, 1109, 1119, 1150, 1179, 1180, 1205, 1322, 1331, 1339, 1347, 1350, 1354, 1356, 1461, 1474, 1475, 1509, 1689, 1698, 1705, 1791, 1856, 1871, 2056, 2067, 2074, 2080, 2095, 2102, 2112, 2132, 2155, 2156

Soyland Farm. *See* Fouts Family of Indiana

Soymilk. *See* Calf, Lamb, or Pig Milk Replacers

Soymilk Companies (Asia)—Kibun, Marusan-Ai, Mitsubishi, Meiji, and Saniku Shokuhin in Japan 481, 723, 849, 960, 1050, 1150, 1179

Soymilk companies (Canada). *See* Malnutrition Matters, ProSoya, SoyaWorld, Inc. (Near Vancouver, British Columbia, Canada)

Soymilk companies (England). *See* Itona

Soymilk companies (Europe). *See* Alpro (Wevelgem, Belgium), Plamil Foods Ltd. (Folkestone, Kent, England) and The Plantmilk Society, Unisoy Milk 'n' By-Products (Stockport, Cheshire, England)

Soymilk companies (USA). *See* Pacific Foods of Oregon, Inc. (Tualatin, Oregon), Vitasoy, WholeSoy & Co. (subsidiary of TAN Industries, Inc., California)

Soymilk, Concentrated or Condensed (Canned, Bottled, or Bulk). Also Called Soybase or Soy Base 123, 759, 828, 1118, 1161, 1179, 1317, 1319, 1356, 1601, 1613

Soymilk Cream (Rich, Thick Soymilk to Be Used Like Cream). *See also:* Non-Dairy Creamer 1070, 1362, 1423, 1433, 1441, 1514, 1732, 1914, 1937, 2082

Soymilk curds. *See* Curds Made from Soymilk

Soymilk Equipment 1179, 1846, 1953, 2076

Soymilk Equipment Companies (Europe). *See* APV Systems, Soya Technology Division. Formerly named Danish Turnkey Dairies Ltd., Alfa-Laval (Lund, Sweden), Tetra Pak International (Lund, Sweden)

Soymilk—Etymology of This Term and Its Cognates / Relatives in Various Languages 791, 1303

Soymilk, Fermented, in Liquid or Viscous Form (Basic Research, Acidophilus Soymilk or Soy Acidophilus Milk, Soy Viili, Buttermilk, Koumiss, Lassi, Piima, etc.). *See also:* Soy Yogurt, Soy Cheese, and Soy Kefir 570, 672, 723, 803, 860, 902, 945, 1109, 1146, 1150, 1356, 1606, 2045

Soymilk, Fermented—Soy Kefir 945

Soymilk, Homemade—How to Make at Home or on a Laboratory or Community Scale, by Hand or with a Soymilk Maker / Machine 924, 1914

Soymilk in Second Generation Products, Documents About 907

Soymilk Industry and Market Statistics, Trends, and Analyses—By Geographical Region 888, 911, 945, 982, 1090, 1100, 1108, 1179, 1301, 1302, 1303, 1325, 1332, 1333, 1339, 1349, 1370, 1391, 1414, 1486, 1509, 1569, 1570, 1571, 1642, 1911, 1956

Soymilk Industry and Market Statistics, Trends, and Analyses—Larger Companies 496, 945, 981, 1007, 1008, 1022, 1026, 1087, 1090, 1128, 1163, 1179, 1278, 1294, 1302, 1303, 1304, 1317, 1319, 1332, 1339, 1354, 1391, 1412, 1498, 1499, 1509, 1571, 1749, 1859

Soymilk—Marketing of 517, 2027

Soymilk Production—How to Make Soymilk on a Commercial Scale 1772

Soymilk shakes. *See* Shakes

Soymilk, Soy Drinks / Beverages, Soy-Based Infant Formulas, and Nogs (Liquid, Non-Fermented). Note—For Soymilk Products *See* Tofu, Yuba, Shakes, Soy Ice Cream, Soy Yogurt, and Soy Cheese or Cheese Alternatives 74, 79, 83, 116, 117, 123, 137, 139, 142, 153, 198, 290, 324, 361, 376, 382, 402, 438, 466, 467, 481, 496, 511, 517, 527, 529, 534, 539, 563, 570, 577, 578, 603, 629, 653, 671, 672, 688, 723, 724, 732, 756, 767, 768, 791, 803, 804, 812, 817, 828, 838, 839, 840, 849, 852, 855, 858, 860, 869, 872, 875, 877, 878, 879, 880, 902, 909, 911, 915, 922, 924, 941, 942, 944, 945, 947, 952, 960, 973, 981, 982, 988, 989, 995, 1006, 1007, 1008, 1020, 1022, 1023, 1026, 1031, 1037, 1042, 1050, 1051, 1054, 1056, 1057, 1059, 1070, 1073, 1074, 1075, 1081, 1087, 1090, 1093, 1094, 1098, 1099, 1100, 1102, 1106, 1107, 1108, 1113, 1118, 1120, 1123, 1128, 1135, 1146, 1150, 1160, 1161, 1163, 1164, 1172, 1180, 1185, 1202, 1205, 1218, 1220, 1223, 1240, 1245, 1248, 1254, 1263, 1281, 1282, 1283, 1292, 1294, 1300, 1301, 1302, 1303, 1304, 1313, 1317, 1319, 1321, 1325, 1326, 1332, 1333, 1339, 1342, 1343, 1344, 1346, 1354, 1356, 1367, 1369, 1378, 1391, 1392, 1393, 1402, 1404, 1411, 1412, 1414, 1420, 1421, 1422, 1424, 1427, 1433, 1441, 1454, 1456, 1457, 1460, 1462, 1475, 1479, 1485, 1486, 1489, 1496, 1497, 1498,

1499, 1509, 1512, 1519, 1520, 1535, 1536, 1547, 1554, 1559, 1560, 1567, 1569, 1570, 1571, 1601, 1612, 1613, 1617, 1618, 1635, 1637, 1642, 1643, 1646, 1665, 1667, 1678, 1681, 1684, 1686, 1693, 1694, 1695, 1698, 1701, 1703, 1708, 1709, 1714, 1715, 1725, 1731, 1732, 1733, 1734, 1735, 1739, 1741, 1742, 1749, 1761, 1770, 1771, 1772, 1785, 1786, 1787, 1789, 1790, 1799, 1800, 1836, 1841, 1847, 1872, 1875, 1882, 1883, 1887, 1888, 1901, 1908, 1911, 1915, 1916, 1935, 1937, 1941, 1944, 1947, 1953, 1956, 1967, 1969, 1972, 1987, 1988, 1992, 1995, 1996, 1997, 2001, 2002, 2023, 2027, 2028, 2031, 2033, 2039, 2045, 2050, 2056, 2058, 2061, 2062, 2065, 2068, 2075, 2076, 2080, 2082, 2083, 2087, 2088, 2089, 2090, 2091, 2095, 2097, 2100, 2101, 2105, 2107, 2151, 2153

Soy milk, Spray-Dried or Powdered 402, 445, 496, 519, 578, 603, 695, 759, 765, 995, 1007, 1051, 1071, 1236, 1254, 1302, 1356, 1392, 1409, 1435, 1456, 1488, 1505, 1512, 1514, 1523, 1539, 1546, 1550, 1593, 1594, 1607, 1619, 1669, 1732, 1772, 1796, 1919, 2017, 2028, 2054, 2060, 2070, 2073, 2081, 2092, 2093, 2099, 2106, 2115, 2119

Soy milk, Spray-Dried or Powdered, Used as an Ingredient in Non-Beverage Commercial Products Such as Ice Creams, Yogurts, Cheeses, Desserts, or Entrees 1133, 1137, 1511

Soy milk Standards or Standard of Identity 1714

Soy milk, Used as an Ingredient in Non-Beverage Commercial Products Such as Ice Creams, Yogurts, Cheeses, Desserts, or Entrees 919, 1024, 1148, 1362, 1413, 1423, 1651

Soy nut Butter (Soy nuts / Roasted Soybeans Ground to a Paste Resembling Peanut Butter; May Also Be Made from (Roasted) Soy Flour Mixed with a Little Oil) 570, 603, 672, 860, 882, 892, 893, 911, 945, 948, 1642, 1859, 1883, 1919, 1937, 1967, 1970, 1992, 2045, 2061

Soy nut companies (Europe & USA). *See* Solnuts B.V. (Tilburg, The Netherlands; and Hudson, Iowa). Including Edible Soy Products

Soy nut companies (USA). *See* Sycamore Creek Co. (Mason, Michigan). Before 1993, INARI, Ltd.

Soy nuts Industry and Market Statistics, Trends, and Analyses—By Geographical Region 911, 1090, 1509

Soy nuts Industry and Market Statistics, Trends, and Analyses—Individual Companies 697, 893, 1090, 1509

Soy nuts (Oil Roasted or Dry Roasted / Toasted). *See Also* *Irimame* Used in Bean-Scattering (*Mame-Maki*) Ceremony at Setsubun (Lunar New Year) in Japan and Parched Soybeans 79, 160, 324, 533, 610, 628, 643, 672, 697, 791, 802, 803, 810, 812, 813, 839, 845, 848, 849, 892, 893, 902, 911, 924, 945, 973, 1015, 1023, 1090, 1146, 1150, 1187, 1211, 1240, 1263, 1280, 1284, 1479, 1497, 1509, 1524, 1536, 1560, 1649, 1678, 1684, 1693, 1730, 1733, 1742, 1770, 1785, 1836, 1888, 1915, 1937, 1941, 1953, 1970, 1988, 1992, 2002, 2028, 2075, 2076, 2089, 2090

Spencer Kellogg & Sons, Inc. (Buffalo, New York) 27, 29, 58, 100, 102, 110, 132, 137, 138, 139, 142, 146, 147, 151, 155, 158, 159,

160, 169, 172, 179, 195, 197, 209, 210, 211, 235, 242, 245, 254, 257, 310, 312, 313, 319, 338, 343, 344, 351, 352, 361, 387, 388, 389, 402, 405, 409, 457, 470, 520, 559, 790, 903, 934, 971, 972, 1002, 1072, 1082, 1455, 1877

Spillers Premier Products Ltd. (Puckeridge, Ware, Hertfordshire, England). Including Soya Foods Ltd [Named Soya Flour Manufacturing Co. Ltd. (1929-42), and Soya Foods Ltd. (1933)]. And incorporating British Soya Products (1932) 42, 79, 301, 496, 682, 732, 778, 923, 1118, 1331, 1350, 1387, 1431, 1546

Sprouts. *See* Soy Sprouts

Spun soy protein fibers. *See* Soy Proteins—Textured Soy Protein Isolates

Spun soy protein fibers used in meat alternatives. *See* Meat Alternatives—Kesp (Spun Soy Protein Fibers)

Sri Lanka. *See* Asia, South—Sri Lanka

Staley (A.E.) Manufacturing Co. (Decatur, Illinois; Acquired by Tate & Lyle PLC in June 1988) 15, 27, 29, 37, 42, 58, 65, 75, 79, 92, 100, 102, 110, 126, 132, 134, 137, 138, 139, 142, 146, 147, 153, 155, 157, 159, 160, 169, 170, 172, 175, 179, 195, 197, 198, 209, 211, 218, 235, 242, 257, 293, 313, 320, 331, 338, 343, 344, 351, 352, 361, 399, 402, 457, 464, 465, 470, 536, 538, 540, 554, 559, 566, 580, 581, 585, 586, 600, 604, 609, 611, 613, 620, 623, 629, 631, 638, 646, 651, 655, 658, 667, 671, 680, 681, 683, 690, 691, 696, 698, 704, 715, 721, 731, 735, 739, 740, 788, 790, 806, 816, 821, 824, 827, 830, 842, 846, 848, 849, 855, 870, 871, 885, 887, 890, 899, 903, 925, 932, 938, 971, 972, 986, 998, 999, 1001, 1007, 1027, 1042, 1047, 1048, 1055, 1062, 1067, 1070, 1071, 1078, 1083, 1084, 1085, 1090, 1107, 1108, 1109, 1141, 1150, 1164, 1166, 1175, 1177, 1221, 1230, 1244, 1266, 1268, 1279, 1334, 1378, 1427, 1439, 1455, 1463, 1473, 1480, 1529, 1576, 1597, 1611, 1697, 1702, 1810, 1825, 1840, 1859, 1861, 1871, 1881, 1955, 2029, 2102, 2103, 2132, 2149

Standards, Applied to Soybeans or Soy Products 27, 29, 92, 132, 134, 172, 245, 254, 319, 457, 540, 568, 683, 790, 903, 945, 1090, 1266, 1279, 1509, 1702, 1840

Standards for soyfoods. *See* Individual foods, e.g., Tofu Standards

Statistics. *See* Industry and Market Analyses and Statistics, the specific product concerned, e.g. Tofu Industry and Market Statistics

Statistics on crushing of soybeans, soy oil and meal production and consumption. *See* individual geographic regions (such as Asia, Europe, Latin America, United States, World, etc.) and nations within each region

Statistics on soybean production. *See* Soybean Production and Trade—Industry and Market Statistics,

Statistics on soybean production, area and stocks. *See* individual geographic regions (such as Asia, Europe, Latin America, United States, etc.) and nations within each region

- Statistics on soybean yields. *See* Yield Statistics, Soybean
- Stephens, Arran and Ratana. *See* Lifestream Natural Foods Ltd. and Nature's Path (BC, Canada)
- Steroids, Steroid Hormones, and Sterols—Industrial Uses of Soy Oil 313, 1041, 1079, 1088, 1091, 1515
- Sterols or Steroid Hormones in Soybeans (Phytosterols—Including Beta-Sitosterol, Campesterol, and Stigmasterol from Which Steroids Such as Progesterone, Hydrocortisone, and Cortisone Can Be Made) 175, 313, 1041, 1088, 1091, 1515, 1896
- Stettiner Oelwerke AG (founded 1910), Including Toepfer's Oelwerke GmbH (also spelled Toepffer's and Toepffer's). In 1965 became part of Oelmuehle Hamburg AG (Hamburg, Germany) 1861, 1862, 1873
- Storage capacity of individual soybean crushing plants. *See* Soybean Crushing—Processing Capacity and/or Storage Capacity of Individual Plants—Statistics
- Storage of Soybean Seeds, Viability and Life-Span During Storage or Storability, and Drying of Soybeans 94, 298, 361, 1160
- Stow Mills, Inc. Including Llama Toucan & Crow (Brattleboro, Vermont), and Lama Trading Co.. 715, 1459
- Strayer Family of Iowa—Incl. George Strayer (1910-1981; executive officer of the American Soybean Association 1940-1967), His Father Bert Strayer (1880-1941), and His Nephew Dennis Strayer (born 1938) 132, 172, 245, 247, 267, 301, 320, 324, 558, 715, 816, 848, 885, 925, 1668, 1846
- Subsidies or support prices for soybeans. *See* Policies and Programs, Government
- Sufu. *See* Tofu, Fermented
- Sugars, complex, such as raffinose, stachyose, and verbacose. *See* Oligosaccharides
- Sukiyaki—Famous Japanese Recipe and Dish. Its Basic Ingredients Include Tofu (Usually Grilled) and Soy Sauce 485, 536
- Sunflower Oil / Sunflowerseed Oil / Sunoil 1436, 1685
- Sunflower Seeds and Sunflowers (*Helianthus annuus*)—Including Sunflowerseed Oil, Cake, and Meal. Once called the Heliotrope, Heliotropion, and Heliotropium 42, 211, 289, 577, 658, 711, 755, 839, 904, 931, 934, 1000, 1101, 1104, 1151, 1178, 1180, 1214, 1247, 1263, 1266, 1376, 1436, 1447, 1503, 1667, 1685, 1702, 1712, 1778, 1840, 1847, 1875, 1901, 1907, 1962, 1963, 2017, 2039, 2054, 2060, 2073, 2081, 2092, 2099, 2106, 2115, 2119
- SunOpta, Inc. (Toronto, Ontario, Canada). Formerly SunRich Food Group (Hope, Minnesota). Formerly Minnesota Waxy Corn Growers Export Inc., Minnesota Edamame, Jameson-Williams Co. Acquired by Stake Technology Ltd. (Norval, Ontario, Canada) in July 1999, Stake changes its name to SunOpta on 31 Oct. 2003
- 1565, 1689, 1714, 1745, 1800, 1846, 1908, 1961, 2012, 2035, 2056, 2070
- SunRich Food Group (Hope, Minnesota). *See* SunOpta, Inc.
- Sunrise Markets Inc. (Vancouver, BC, Canada) 1887, 1945
- Sunsoy Products Ltd. *See* Victory Soya Mills Ltd.
- Sustainable Development and Growth, Including Low-Input Sustainable Agriculture (LISA), Renewable Energy Resources (Solar, Wind), Steady State Economics, and Voluntary Simplicity Worldwide 1480, 1919
- Swan Food Corp. (Miami, Florida). Started in 1977 by Robert Brooks and Mary Pung 2156
- Swan Gardens Inc. and Soya Kaas Inc. (St. Ignatius, Montana; Atlanta, Georgia). Founded by Richard and Jocelyn McIntyre 1150, 1205, 1269, 1570, 1571
- Swift & Co. (Chicago, Champaign, and Oak Brook, Illinois) 115, 132, 137, 139, 142, 147, 151, 157, 159, 160, 172, 179, 195, 209, 211, 242, 245, 254, 293, 301, 305, 310, 319, 402, 457, 465, 470, 497, 523, 525, 526, 527, 528, 529, 533, 534, 538, 539, 541, 553, 554, 555, 559, 561, 566, 576, 578, 581, 585, 586, 592, 593, 594, 595, 598, 604, 611, 613, 631, 651, 655, 658, 667, 680, 681, 683, 696, 825, 857, 906, 932, 938, 1003, 1071, 1075, 1078, 1082, 1230, 1473, 1825, 1871
- Sycamore Creek Co. (Mason, Michigan). Before 1993, INARI, Ltd.—International Nutrition and Resources Inc. Purchased by W.G. Thompson & Sons Ltd. of Canada, Jan. 1999 848, 1278, 1859
- Syngenta AG (based in Basel, Switzerland)—Formed in Nov. 2000 by the Merger of Novartis Agribusiness (formed in March 1996 by the Merger of Sandoz AG and Ciba-Geigy; both based in Basel, Switzerland) and Zeneca Agrochemicals 1692, 1703, 1725, 2064
- Tahini or tahina or tahin. *See* Sesame Butter
- Taiwan. *See* Asia, East—Taiwan
- Takamine, Jokichi (1854-1922; Introduced Koji, Commercial Microbial Enzyme Production, and Taka-Diastase to the USA). He Also Isolated Adrenalin / Adrenaline. Donated Famous Japanese Cherry Trees to Washington, DC 1407
- Tamari, Including Real Tamari (Soy Sauce Which Contains Little or No Wheat) or the Macrobiotic Word Tamari Meaning Traditional Shoyu 802, 839, 872, 897, 911, 945, 1017, 1018, 1031, 1100, 1121, 1162, 1180, 1202, 1240, 1263, 1283, 1346, 1388, 1665, 1684, 1708, 1770, 1888, 2023, 2061, 2062, 2066, 2083, 2125
- Taosi or tao-si or tausi or tau-si. *See* Fermented Black Soybeans—from The Philippines
- Tariffs, duties, embargoes. *See* Trade Policies (International) Concerning Soybeans, Soy Products, or Soyfoods—Tariffs, Duties, Embargoes, Moratoriums, and Other Trade Barriers or Subsidies

Taste Panel, Taste Test Results, or Sensory / Organoleptic Evaluation of the Quality of Foods and Beverages 603, 849

Taste Problems. *See* Flavor / Taste Problems

Tempeh companies. *See* Tofurky Company (Hood River, Oregon. Maker of Tofurky and Tempeh)

Tempeh companies (USA). *See* Soyfoods Unlimited, Inc. (San Leandro, California)

Tempeh Industry and Market Statistics, Trends, and Analyses—By Geographical Region 911, 945, 1090, 1100, 1509

Tempeh Industry and Market Statistics, Trends, and Analyses—Larger Companies 1090, 1100, 1509

Tempeh (Spelled *Témpé* in Malay-Indonesian) 376, 382, 411, 496, 672, 688, 715, 723, 791, 810, 812, 839, 840, 848, 856, 860, 897, 902, 911, 945, 958, 959, 960, 973, 1000, 1031, 1037, 1046, 1050, 1055, 1056, 1090, 1099, 1100, 1106, 1107, 1108, 1146, 1150, 1162, 1172, 1180, 1185, 1201, 1202, 1211, 1218, 1220, 1240, 1263, 1283, 1297, 1338, 1343, 1346, 1366, 1388, 1407, 1408, 1409, 1420, 1421, 1422, 1433, 1456, 1457, 1460, 1464, 1478, 1483, 1494, 1509, 1536, 1542, 1553, 1559, 1560, 1561, 1563, 1564, 1570, 1571, 1601, 1606, 1613, 1619, 1635, 1637, 1644, 1662, 1665, 1669, 1678, 1681, 1684, 1686, 1708, 1709, 1716, 1731, 1732, 1733, 1734, 1735, 1737, 1738, 1741, 1742, 1751, 1761, 1770, 1772, 1785, 1788, 1789, 1790, 1797, 1836, 1883, 1888, 1914, 1915, 1916, 1919, 1929, 1937, 1941, 1964, 1971, 1988, 1992, 2002, 2023, 2025, 2047, 2050, 2056, 2058, 2061, 2062, 2082, 2083, 2087, 2088, 2089, 2090, 2095, 2097, 2098, 2100, 2104, 2105, 2112, 2113, 2125, 2130, 2131

Tempehworks. *See* Lightlife Foods, Inc.

Teriyaki Sauce and Teriyaki (Soy Sauce is the Main Sauce Ingredient) 1056, 1315, 1686, 1789, 1790, 1888, 1980

Tetra Pak International (Lund, Sweden) 496, 723, 941, 945, 960, 1007, 1008, 1094, 1128, 1150, 1179, 1301, 1302, 1303, 1304, 1317, 1339, 1479, 1509, 1800, 1846, 1859, 1875, 1901, 1961, 1969, 2156

Textiles made from spun soy protein fibers. *See* Fibers (Artificial Wool or Textiles Made from Spun Soy Protein Fibers, Including Azlon, Soydon, and Soy Silk / Soysilk)

Textured soy flours. *See* Soy Flours, Textured (Including TVP, Textured Vegetable Protein)

Textured soy protein concentrates. *See* Soy Protein Concentrates, Textured

Textured soy protein isolates. *See* Soy Protein Isolates, Textured (For Food Use Only). Including Spun Fibers

Textured soy proteins. *See* Soy Proteins, Textured

Therapeutic uses / aspects of soybeans, general. *See* Medical / Medicinal-Therapeutic Uses / Aspects, General

Third World / Developing Nations 534, 1028, 1891, 2151

Thompsons Limited. Before Jan. 2004 named Thompson (W.G.) & Sons Limited, Blenheim, Ontario, Canada. Before 1963 W.G. Thompson. Founded in 1924 by Wesley G. “Tommy” Thompson 1827, 1846, 1859, 1887, 1945

Thua-nao / Tua Nao (Whole Fermented Soybeans From Thailand) 810, 945

Thyroid function. *See* Goitrogens and Thyroid Function

Timeline. *See* Chronology / Timeline

Tivall (Tivol), Maker of Meat Alternatives (Ashrat, Israel) 1271, 1365, 1377, 1558, 1969, 2035

TKW (Germany). *See* Tofukost-Werk GmbH

Tocopherol. *See* Vitamin E (Tocopherol)

Tofu (Also Called Soybean Curd or Bean Curd until about 1975-1985). *See* also Tofu—Fermented, Soy Ice Creams, Soy Yogurts, and Cheesecake, Which Often Use Tofu as a Major Ingredient 79, 117, 123, 142, 198, 290, 324, 361, 375, 376, 382, 411, 496, 571, 603, 621, 672, 678, 688, 715, 723, 724, 767, 791, 803, 804, 810, 812, 816, 818, 838, 839, 840, 848, 856, 860, 881, 886, 888, 897, 902, 910, 911, 921, 924, 935, 941, 942, 943, 944, 945, 952, 960, 970, 973, 984, 989, 997, 1000, 1004, 1006, 1007, 1008, 1016, 1017, 1023, 1028, 1031, 1033, 1034, 1037, 1038, 1042, 1046, 1049, 1050, 1054, 1056, 1059, 1090, 1099, 1100, 1106, 1107, 1108, 1109, 1114, 1118, 1120, 1121, 1123, 1141, 1146, 1150, 1158, 1160, 1161, 1162, 1167, 1172, 1179, 1180, 1182, 1183, 1185, 1201, 1202, 1205, 1207, 1208, 1216, 1218, 1219, 1226, 1240, 1263, 1269, 1271, 1274, 1275, 1278, 1281, 1283, 1284, 1294, 1295, 1296, 1297, 1299, 1300, 1301, 1302, 1317, 1320, 1322, 1335, 1336, 1338, 1343, 1344, 1346, 1354, 1356, 1366, 1379, 1385, 1388, 1391, 1400, 1408, 1418, 1420, 1421, 1422, 1433, 1437, 1456, 1457, 1464, 1483, 1489, 1494, 1495, 1498, 1499, 1509, 1512, 1524, 1536, 1542, 1545, 1547, 1553, 1559, 1560, 1561, 1567, 1588, 1606, 1617, 1618, 1630, 1635, 1637, 1642, 1643, 1644, 1648, 1657, 1678, 1681, 1684, 1686, 1689, 1694, 1698, 1709, 1716, 1725, 1731, 1732, 1733, 1734, 1735, 1736, 1738, 1739, 1741, 1742, 1751, 1759, 1761, 1770, 1772, 1785, 1787, 1788, 1789, 1790, 1797, 1799, 1800, 1823, 1836, 1841, 1845, 1860, 1863, 1871, 1883, 1887, 1888, 1896, 1903, 1911, 1914, 1915, 1916, 1919, 1929, 1933, 1937, 1941, 1953, 1964, 1967, 1970, 1971, 1988, 1992, 1995, 2001, 2017, 2018, 2023, 2025, 2028, 2031, 2044, 2050, 2054, 2056, 2058, 2061, 2062, 2073, 2075, 2076, 2080, 2081, 2082, 2083, 2087, 2088, 2089, 2090, 2092, 2095, 2097, 2098, 2099, 2100, 2104, 2105, 2106, 2113, 2115, 2119, 2125, 2151, 2156

Tofu, baked or broiled at flavored / seasoned/marinated. *See* Tofu, Flavored/Seasoned/Marinated and Baked, Broiled, Grilled, Braised, or Roasted

Tofu companies (Canada). *See* Sunrise Markets Inc. (Vancouver, BC, Canada), Victor Food Products, Ltd. (Scarborough, Ontario, Canada)

- Tofu companies (Europe). *See* Auenland Tofu und Soja Produkte (Prien-Chiemsee, Germany), Cauldron Foods Ltd. (Bristol, England), Heuschen-Schrouff B.V. (Landgraaf, Netherlands), Sojadoc (Clermond-Ferrand, France), Sojarei Vollwertkost GmbH (Traiskirchen, near Vienna, Austria). Formerly Sojarei Ebner-Prosl, Soyastern Naturkost GmbH / Dorstener Tofu Produktions GmbH (Dorsten, Germany), Tofukost-Werk TKW GmbH (Wadersloh, Germany), Tofumanufaktur Christian Nagel GmbH (Hamburg, Germany), Tofurei Svadesha Naturkost Produkte GmbH (Munich, Germany). Including Byodo Naturkost
- Tofu companies (USA). *See* Azumaya, Inc. (San Francisco, California), House Foods America Corporation (Los Angeles, California), Island Spring, Inc. (Vashon, Washington), Kyoto Food Corp. USA (Terre Haute, Indiana), Legume, Inc. (Fairfield, New Jersey), Mainland Express (Spring Park, Minnesota), Morinaga Nutritional Foods, Inc., and Morinaga Nyūgyō (Torrance, California, and Tokyo, Japan), Nasoya Foods, Inc. (Leominster, Massachusetts). Subsidiary of Vitasoy, Northern Soy, Inc. (Rochester, New York), Pulmuone U.S.A., Inc. (South Gate, California), Quong Hop & Co. (San Francisco, California), Rosewood Products Inc. (Ann Arbor, Michigan), Simply Natural, Inc. (Philadelphia, Pennsylvania), Swan Gardens Inc. and Soya Kaas Inc. (Atlanta, Georgia), Tofu Shop (The) (Telluride, Colorado, and Arcata, California) and Tofu Shop Specialty Foods Inc., Tomsun Foods, Inc. (Greenfield, Massachusetts; Port Washington, New York, Wildwood Harvest, Inc.
- Tofu, Criticism of, Making Fun of, or Image Problems 1150, 1205, 1617, 1665, 1903
- Tofu curds. *See* Curds Made from Soymilk
- Tofu Equipment 1131, 1179, 2076
- Tofu, Fermented (Also Called *Doufu-ru*, *Toufu-ru*, *Furu*, *Fuyu*, *Tahuri*, *Tahuli*, *Tajure*, *Tao-hu-yi*, or *Sufu*). *See also* *Tofu-yo* 79, 688, 724, 767, 838, 902, 935, 945, 995, 1004, 1090, 1109, 1202, 1356, 1456, 1464, 1509, 1536, 1646, 1731, 1988
- Tofu, Fermented–Tofuyo from Okinawa, Japan (Made with Red Rice {*Beni-Koji*} Containing *Monascus purpureus*) 1646
- Tofu, Firm (Chinese-Style) 1008, 1056, 1099, 1269, 1489, 1524, 1542, 1617, 1823, 1937, 1941, 2025, 2062, 2083, 2097
- Tofu, Flavored / Seasoned / Marinated and Baked, Broiled, Grilled, Braised, or Roasted. Including Tofu Jerky and Savory Baked Tofu 1162, 1180, 2056
- Tofu, Flavored, Seasoned, or Marinated, but not Baked, Broiled, Grilled, Braised, or Roasted. Including most Five-Spice Pressed Tofu (*wu-hsiang toufukan* / *wuxiang doufugan*) 1317, 1571, 2156
- Tofu, Fried (Especially Deep-Fried Tofu Pouches, Puffs, Cutlets, or Burgers; Agé or Aburagé, Aburaagé, Usu-agé, Atsu-agé or Nama-agé, Ganmodoki or Ganmo, Hiryozu / Hiryozu) 376, 603, 723, 910, 936, 941, 942, 945, 1004, 1007, 1039, 1122, 1125, 1157, 1160, 1182, 1219, 1315, 1317, 1344, 1356, 1437, 1736, 1759, 2083, 2105, 2156
- Tofu, Fried, Homemade–How to Make at Home or on a Laboratory Scale, by Hand 924
- Tofu, Frozen, Dried-frozen, or Dried Whole (Not Powdered) 376, 496, 603, 694, 839, 924, 945, 956, 1004, 1031, 1050, 1121, 1561, 1678, 1736, 1742, 1937, 1941, 1969, 2062, 2083
- Tofu, Grilled, Braised, Broiled, or Roasted (*Yaki-dōfu* in Japanese). A Japanese-Style Commercial Product 945, 1433, 1644, 2156
- Tofu, Homemade–How to Make at Home or on a Laboratory or Community Scale, by Hand 715, 924, 956, 1914
- Tofu in Second Generation Products, Documents About 1167, 1180, 1220, 1649
- Tofu Industry and Market Statistics, Trends, and Analyses–By Geographical Region 496, 715, 888, 902, 911, 945, 1090, 1100, 1183, 1208, 1216, 1296, 1317, 1322, 1370, 1509, 1570, 1571, 1642, 2156
- Tofu Industry and Market Statistics, Trends, and Analyses–Larger Companies 935, 941, 1008, 1090, 1180, 1183, 1208, 1278, 1294, 1296, 1297, 1322, 1335, 1391, 1509, 1545, 1570, 1571, 1657, 1859
- Tofu Industry and Market Statistics, Trends, and Analyses–Smaller Companies 910, 1561
- Tofu Kit or Press (Kits or Presses Used for Making Tofu at Home) 715
- Tofu–Marketing of 1547
- Tofu, Pressed, Chinese-Style (*Toufukan* / *Doufugan* / *Dougan*) 324, 804, 1056, 1106, 1205, 1418, 1742
- Tofu Production–How to Make Tofu on a Commercial Scale 715, 817
- Tofu Shop (The) (Telluride, Colorado, and Arcata, California) and Tofu Shop Specialty Foods Inc. Founded by Matthew Schmit 817, 1689
- Tofu, Silken (Kinugoshi). Made without Separation of Curds and Whey 941, 945, 952, 1038, 1056, 1099, 1107, 1118, 1150, 1160, 1205, 1316, 1542, 1588, 1617, 1619, 1643, 1644, 1669, 1693, 1741, 1916, 1937, 1941, 2025, 2061, 2062, 2082, 2089, 2097, 2156
- Tofu, Smoked 1158, 1182, 1183, 1263, 1283, 1356, 1418, 1464, 1657, 2083, 2097, 2130
- Tofu, Spray-dried or Powdered 1141, 1167, 1392, 1607
- Tofu Standards or Standard of Identity 1167
- Tofu, Used as an Ingredient in Second Generation Commercial Products Such as Dressings, Entrees, Ice Creams, etc.. 910, 936, 1039, 1086, 1125, 1127, 1138, 1157, 1165, 1310, 1311, 1315, 1355, 1357, 1397, 1405, 1442

- Tofukost-Werk TKW GmbH (Wadersloh, Germany) 1049, 1183
- Tofumanufaktur Christian Nagel GmbH (Hamburg, Germany). Previously Christian Nagel Tofumanufaktur from 1984 to 1 Jan. 1989 1049, 1182
- Tofurei Svadesha Naturkost Produkte GmbH (Munich, Germany). Including Byodo Naturkost 1049, 1183
- Tofurky Company (The) (Hood River, Oregon. Maker of Tofurky and Tempeh). Started by Seth Tibbott in Dec. 1980. Named Turtle Island Soy Dairy until Nov. 1991. Named Turtle Island Foods, Inc. until 2 Sept. 2013 860, 979, 1571, 1689, 1709, 1914, 1969, 2023, 2027, 2110, 2129
- Tofutown.com (formerly Viana Naturkost GmbH) and Bernd Drosihn (Wiesbaum / Vulkaneifel, Germany) 1042, 1183
- Tofutti Brands, Inc. (Cranford, New Jersey)–Soy Ice Cream Company. Mintz’s Buffet Until Jan. 1982 860, 1050, 1069, 1095, 1100, 1102, 1107, 1108, 1146, 1150, 1205, 1301, 1427, 1512, 1547, 1570, 1571, 1709, 1887, 1914, 1915
- Tomsun Foods, Inc. (Greenfield, Massachusetts; Port Washington, New York. Named New England Soy Dairy from 1978-1983) 715, 839, 860, 945, 960, 979, 1050, 1090, 1107, 1150, 1167, 1205
- Touchi or tou ch’i. *See* Fermented Black Soybeans
- Toxins and Toxicity in Foods and Feeds–Aflatoxins (Caused by certain strains of *Aspergillus flavus* and *A. parasiticus* molds) 496
- Toxins and Toxicity in Foods and Feeds (General) 285, 304, 1254
- Toxins and Toxicity in Foods and Feeds–Microorganisms, Especially Bacteria (Such as *Escherichia coli*, *Salmonella*, *Clostridium botulinum*), that Cause Food Poisoning. *See also*: Aflatoxins (produced by molds) and Bongkrek Poisoning (produced in coconut by bacteria) 960, 1588
- Toxins and Toxicity in Foods and Feeds–Trichloroethylene Solvent and the Duren / Dueren Disease or Poisoning of Cattle / Ruminants 283, 750
- Tractors 62, 115, 290, 326, 347, 968, 1075, 1144, 1443, 1962
- Trade (International–Imports, Exports) of Soybeans, Soy Oil, and / or Soybean Meal. *See also* Trade–Tariffs and Duties 15, 61, 79, 137, 139, 153, 282, 298, 299, 335, 406, 464, 466, 470, 496, 517, 598, 644, 769, 786, 789, 790, 820, 821, 826, 829, 850, 870, 899, 905, 1002, 1007, 1012, 1032, 1033, 1055, 1104, 1178, 1194, 1212, 1216, 1231, 1304, 1338, 1348, 1373, 1376, 1393, 1436, 1456, 1479, 1503, 1507, 1544, 1602, 1714, 1762, 1772, 1781, 1880, 1920, 1946, 1963, 1998, 2007, 2011, 2037, 2038, 2048, 2051, 2060
- Trade of Soyfoods (Import and Export, not Including Soy Oil or Soybean Meal, but Including Lecithin and Margarine) or Soyfoods Manufacturing Equipment. *See also*: Soy Sauce–Imports, Exports. Miso–Imports, Exports 42, 235, 289, 496, 693, 921, 1011, 1027, 1099, 1117, 1133, 1135, 1163, 1200, 1206, 1251, 1282, 1292, 1294, 1297, 1319, 1339, 1344, 1353, 1388, 1406, 1511, 1512, 1513, 1514, 1519, 1528
- Trade Policies (International) Concerning Soybeans, Soy Products, or Soyfoods–Tariffs, Duties, Embargoes, Moratoriums, and Other Trade Barriers or Subsidies 32, 61, 598, 769, 841, 1055, 1213, 1214, 1231, 1373, 1436, 1544, 1920, 2038
- Trade statistics, Central America. *See* Latin America–Central America–Trade (Imports or Exports) of Soybeans, Soy Oil, and / or Soybean Meal–Statistics
- Trade statistics, South Asia. *See* South Asia–Trade (Imports or Exports) of Soybeans, Soy Oil, and / or Soybean Meal–Statistics
- Trains, special. *See* Railroads / Railways and Special Trains and/or Exhibit Cars Used to Promote Soybeans and Soybean Production
- Trains used to transport soybeans. *See* Transportation of Mature Soybeans to Market
- Trall, Russell Thacher (1812-1877). American Health Reformer and Vegetarian (New York) 771
- Trans Fatty Acids 1030, 1963, 2003, 2054, 2060, 2122
- Transportation of Mature Soybeans to Market within a Particular Country or Region–General and Other 254, 457
- Transportation of Soybeans or Soy Products to Market by Railroad / Railway / Rail within a Particular Country or Region. *See also* Railroads / Railways and Special Trains Used to Promote Soybeans and Soybean Production 61, 175, 298, 332, 420, 691, 885, 1227, 1364, 1539, 1666, 1781, 1881, 2016
- Transportation of Soybeans or Soy Products to Market by Roads or Highways Using Trucks, Carts, etc. within a Particular Country or Region 579, 1666, 2048
- Transportation of Soybeans or Soy Products to Market by Water (Rivers, Lakes) Using Junks, Barges, etc. within a Particular Country or Region 332, 824, 903, 1043, 1244, 1539, 1541, 1666, 1781, 1957, 2015, 2048
- Tree of Life (St. Augustine, Florida). Purchased in Dec. 1985 by Netherlands-based Royal Wessanen NV Co.. 1570
- Triballat (Noyal-sur-Vilaine, France). Makers of Sojasun; and its Affiliate Bonneterre (Rungis Cedex, France) 1006, 1303, 1317, 1339, 1354, 1356, 1433, 1645, 1870
- Trichloroethylene. *See* Solvents–Trichloroethylene, Toxins and Toxicity in Foods and Feeds–Trichloroethylene Solvent and the Duren / Dueren Disease
- Tri-County Soy Bean Co-operative Association. *See* Dawson Mills
- Triple “F” and Insta-Pro. *See* Extruders and Extrusion Cooking, Low Cost–Including Triple “F”

- Trucks or Carts used to transport soybeans. *See* Transportation of Soybeans or Soy Products to Market by Roads or Highways
- Trypsin / Protease / Proteinase Growth Inhibitors 181, 285, 287, 906, 974, 1435, 1563, 1601, 1753, 1772, 1886, 1988
- Turkey. *See* Asia, Middle East–Turkey
- Turkey, meatless. *See* Meat Alternatives–Meatless Turkey
- Turkeys Fed Soybeans, Soybean Forage, or Soybean Cake or Meal as Feed 79, 287, 386, 690, 730, 1590
- Turtle Mountain LLC (Springfield, Oregon)–Non-Dairy Frozen Desserts, Beverages, and Cultured Products Company. Formerly Jolly Licks, Living Lightly, Turtle Mountain, Inc.. 860, 1269
- TVP. *See* Soy Flours, Textured (Including TVP, Textured Vegetable Protein)
- Ultrafiltration. *See* Membrane Technology Processes
- Umeboshi or ume-boshi (Japanese salt plums / pickled plums), Plum Products, and the Japanese Plum Tree (*Prunus mume*) from whose fruit they are made 512, 767, 839, 1018, 1162, 1464
- Unfair Practices–Allegations of Unfair Trade, Regulation, Production, or Labor Practices 1244
- Unfair Practices–Including Possible Deceptive / Misleading Labeling, Advertising, etc. *See also*: Adulteration 622, 1268, 1334, 1529, 1585, 1598, 1631, 1744
- Unilever Corp., Lever Brothers Co., Unimills B.V. (Netherlands), and Margarine Union 79, 195, 254, 319, 457, 465, 467, 555, 598, 645, 655, 656, 682, 683, 695, 700, 711, 719, 752, 778, 790, 793, 820, 821, 829, 841, 857, 873, 903, 904, 923, 957, 965, 1007, 1032, 1033, 1042, 1068, 1075, 1078, 1097, 1130, 1132, 1151, 1217, 1266, 1337, 1341, 1393, 1431, 1519, 1520, 1546, 1579, 1640, 1859, 1861, 1871, 1880, 1907, 1996, 2038, 2094
- Unisoy Milk ‘n’ By-Products (Stockport, Cheshire, England) 1122, 1135, 1163, 1168, 1223, 1248, 1254, 1256, 1267, 1302, 1303, 1309, 1313, 1319, 1325, 1326, 1332, 1333, 1339, 1354, 1370, 1391, 1392, 1402, 1411, 1412, 1413, 1462, 1486, 1512, 1513, 1514, 1519, 1520, 1859
- United Kingdom. *See* Europe, Western–United Kingdom
- United Kingdom, health foods movement and industry. *See* Health Foods Movement and Industry in United Kingdom
- United Nations (Including UNICEF, FAO, UNDP, UNESCO, and UNRRA) Work with Soy 419, 438, 446, 447, 496, 527, 542, 576, 577, 595, 596, 607, 608, 658, 909, 1089, 1331, 1350, 1414, 1528, 1871
- United Natural Foods, Inc. (UNFI, Auburn, Washington state). Formed in 1995. Includes Mountain People’s Warehouse (Nevada City, California), Cornucopia Natural Foods (Connecticut) and Stow Mills (Vermont and New Hampshire), Rainbow Natural Foods, Albert’s Organics, and Hershey Imports Co.. 715, 1459
- United Soybean Board. *See* American Soybean Association (ASA)–United Soybean Board
- United States Department of Agriculture (USDA)–Agricultural Adjustment Administration (AAA, 1933-1942) and Agricultural Adjustment Agency (1942-1945) 157, 1144
- United States Department of Agriculture (USDA)–Agricultural Cooperative Service. Including Farmer Cooperative Service (FCS, 1926) 579, 654, 696, 899, 905, 1103
- United States Department of Agriculture (USDA)–Agricultural Research Service (ARS, Established 1953). Including Agricultural Research Administration (1942-1953) 213, 324, 361, 402, 492, 493, 528, 542, 616, 756, 776, 777, 842, 846, 1407, 1480, 1563
- United States Department of Agriculture (USDA)–Bureau of Agricultural and Industrial Chemistry (1943-1953). Including Bureau of Agricultural Chemistry and Engineering (1938-1943), Bureau of Chemistry and Soils (1927-1938), and Bureau of Chemistry (1901-1927). Transferred to the Agricultural Research Service (ARS) in 1953 75, 79, 159, 195, 198, 206, 242
- United States Department of Agriculture (USDA)–Bureau of Plant Industry, Soils, and Agricultural Engineering (1943-1953). Including Bureau of Plant Industry (1901-1943), Office of Plant Industry (1900-1901), and Division of Agrostology (1895-1901). Transferred to Agricultural Research Service in 1953 39, 79, 137, 139, 142, 153, 324, 558, 925, 1075, 1081, 1456
- United States Department of Agriculture (USDA)–Economic Research Service (ERS) (1961-) 402, 580, 699, 706
- United States Department of Agriculture (USDA)–Food and Nutrition Service (FNS) 585, 622, 696, 710, 733, 881, 1276, 2154
- United States Department of Agriculture (USDA)–Foreign Agricultural Service (FAS, Est. 1953) Including Office of Foreign Agricultural Relations (1939-1953). Foreign Agricultural Service (1938-1939) 325, 326, 331, 341, 350, 364, 397, 402, 406, 446, 447, 476, 644, 721, 723, 885, 1645
- United States Department of Agriculture (USDA; Including Federal Grain Inspection Service [FGIS], and War Food Administration [WFA]). *See also*: Agricultural Marketing Service, Agricultural Research Service (ARS), Bureau of Plant Industry, Economic Research Service, Food and Nutrition Service, Foreign Agricultural Service, and Section of Foreign Seed and Plant Introduction 79, 124, 146, 175, 202, 215, 290, 300, 338, 348, 354, 375, 449, 467, 526, 529, 534, 539, 544, 554, 557, 559, 565, 570, 577, 578, 581, 589, 595, 600, 610, 611, 629, 632, 638, 667, 688, 690, 722, 769, 779, 812, 815, 836, 860, 870, 900, 906, 909, 925, 960, 999, 1028, 1150, 1276, 1331, 1349, 1387, 1427, 1439, 1539, 1551, 1603, 1698, 1712, 1753, 1778, 1847, 1856, 1875, 1901, 1904, 1916, 1961, 1962, 1965, 1993, 2011, 2015, 2017, 2035, 2039, 2045, 2054, 2060, 2073, 2081, 2089, 2092, 2099, 2106, 2115, 2119

United States Department of Agriculture (USDA)–Office of Experiment Stations (1888-1955). Transferred to the Cooperative State Experiment Station Service in 1961 115

United States Department of Agriculture (USDA)–Section of Foreign Seed and Plant Introduction (Established 1898 within the USDA with David Fairchild in Charge). Transferred to Bureau of Plant Industry (1 July 1901). Later Referred to as the Office of Foreign Seed and Plant Introduction and then the Office of Foreign Plant Introduction 2102, 2132

United States Department of Agriculture (USDA)–War Food Administration (WFA), Including the Food Production and Distribution Administration 157, 160, 191, 1070, 1477

United States of America–Activities and Influence Overseas / Abroad 61, 79, 247, 325, 326, 331, 341, 406, 446, 447, 517, 598, 607, 629, 772, 789, 853, 1004, 1006, 1042, 1128, 1139, 1177, 1250, 1258, 1294, 1303, 1304, 1327, 1370, 1375, 1387, 1391, 1412, 1458, 1546, 1645, 1935, 1953, 2004, 2076

United States of America–Commercial Products Imported from Abroad 1022

United States of America–Soybean Crushing–Soy Oil and Meal Production and Consumption–Statistics, Trends, and Analyses 179, 257, 667, 806, 1249, 1907

United States of America–Soybean Production, Area and Stocks–Statistics, Trends, and Analyses 42, 74, 83, 115, 137, 139, 151, 361, 399, 466, 789, 1214, 1712, 1778, 1847, 1875, 1901, 1962, 2017, 2039, 2054, 2060, 2073, 2081, 2092, 2099, 2106, 2115, 2119

United States of America, soyfoods movement in. *See Soyfoods Movement in North America*

United States of America (USA) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 248, 249, 250, 251, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 283, 285, 286, 287, 288, 289, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 327, 328, 329, 330, 332, 333, 334, 335, 336, 337, 338, 342, 343, 344, 345,

346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 391, 392, 393, 394, 395, 397, 398, 399, 400, 401, 402, 403, 404, 405, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 440, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 513, 514, 515, 516, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 544, 545, 546, 547, 548, 549, 550, 553, 554, 555, 556, 557, 558, 559, 560, 562, 564, 565, 566, 567, 568, 569, 570, 571, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 592, 593, 594, 595, 597, 599, 600, 601, 603, 604, 605, 606, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 622, 623, 624, 626, 627, 631, 632, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 646, 648, 649, 650, 651, 653, 654, 655, 657, 658, 662, 663, 664, 666, 667, 670, 671, 672, 673, 674, 675, 676, 677, 679, 680, 681, 683, 684, 685, 687, 688, 689, 690, 691, 692, 696, 697, 698, 699, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 712, 713, 714, 715, 716, 717, 718, 720, 722, 723, 724, 725, 729, 730, 731, 733, 734, 735, 736, 737, 739, 740, 741, 742, 743, 745, 749, 750, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 764, 766, 767, 768, 769, 770, 771, 773, 774, 775, 776, 777, 778, 779, 781, 783, 784, 786, 787, 788, 789, 790, 791, 792, 794, 795, 801, 803, 804, 805, 806, 808, 810, 811, 812, 815, 816, 817, 818, 819, 821, 822, 823, 824, 825, 826, 827, 828, 830, 831, 832, 835, 836, 838, 839, 842, 843, 844, 846, 847, 848, 849, 852, 854, 855, 856, 857, 858, 860, 869, 871, 874, 876, 878, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 905, 906, 907, 908, 911, 913, 914, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 937, 938, 939, 943, 944, 945, 947, 948, 949, 951, 952, 953, 955, 957, 958, 959, 960, 961, 968, 970, 971, 972, 973, 975, 976, 979, 980, 982, 983, 985, 986, 987, 989, 990, 991, 992, 993, 994, 996, 997, 998, 1000, 1001, 1002, 1003, 1005, 1007, 1009, 1010, 1014, 1017, 1020, 1021, 1023, 1025, 1026, 1027, 1028, 1029, 1031, 1037, 1041, 1043, 1046, 1047, 1048, 1054, 1055, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1075, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1088, 1090, 1091, 1095, 1100, 1101, 1102, 1103, 1104, 1106, 1108, 1109, 1119, 1121, 1123, 1124, 1129, 1130, 1131, 1132, 1134, 1138, 1141, 1143, 1144, 1146, 1147, 1149, 1150, 1151, 1152, 1162, 1164, 1166, 1167, 1169, 1173, 1174, 1175, 1176, 1178, 1179, 1180, 1184, 1187, 1188, 1191, 1201, 1204, 1205, 1207, 1210, 1211, 1213, 1214, 1215, 1216, 1217, 1218, 1221, 1222, 1225, 1227, 1230, 1231, 1232, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1249, 1251, 1260, 1261, 1262, 1265, 1266, 1268, 1269, 1270, 1272, 1273, 1276, 1277, 1278, 1279, 1292, 1298, 1305, 1318, 1320, 1321, 1323, 1328, 1329, 1330, 1331, 1334, 1336, 1337, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1353, 1358, 1359, 1364, 1365, 1372, 1373, 1376, 1378, 1379, 1380, 1381, 1382, 1384, 1386, 1388, 1389, 1393, 1394, 1395, 1396, 1398, 1399, 1400, 1403, 1404, 1406, 1407, 1409, 1414, 1415, 1416, 1417, 1418, 1419, 1421, 1427, 1429, 1430, 1432, 1435, 1436, 1437, 1439, 1440, 1441, 1442, 1443, 1444, 1446, 1447, 1451, 1454, 1455, 1456, 1459, 1460, 1464, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479,

1480, 1481, 1482, 1483, 1484, 1485, 1487, 1488, 1490, 1491, 1493, 1494, 1496, 1497, 1500, 1501, 1502, 1503, 1505, 1506, 1507, 1508, 1509, 1512, 1515, 1517, 1518, 1522, 1523, 1524, 1525, 1526, 1529, 1530, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1547, 1548, 1549, 1551, 1552, 1554, 1555, 1556, 1557, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1602, 1603, 1604, 1605, 1606, 1607, 1611, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1630, 1631, 1633, 1634, 1635, 1637, 1639, 1641, 1642, 1643, 1644, 1646, 1647, 1648, 1649, 1650, 1659, 1660, 1661, 1662, 1663, 1664, 1665, 1666, 1667, 1668, 1669, 1670, 1671, 1672, 1673, 1674, 1675, 1676, 1677, 1678, 1680, 1681, 1682, 1683, 1684, 1685, 1687, 1688, 1689, 1690, 1691, 1692, 1693, 1694, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1708, 1710, 1712, 1713, 1714, 1715, 1716, 1717, 1719, 1720, 1721, 1722, 1723, 1724, 1725, 1726, 1728, 1729, 1730, 1733, 1735, 1737, 1738, 1739, 1740, 1741, 1742, 1743, 1744, 1745, 1747, 1748, 1749, 1750, 1751, 1752, 1754, 1755, 1756, 1757, 1758, 1759, 1760, 1763, 1764, 1765, 1766, 1767, 1768, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1776, 1777, 1778, 1779, 1780, 1781, 1782, 1783, 1784, 1785, 1787, 1788, 1789, 1792, 1793, 1794, 1795, 1797, 1798, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1828, 1829, 1830, 1831, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1859, 1860, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1871, 1874, 1875, 1876, 1877, 1878, 1879, 1881, 1882, 1883, 1884, 1885, 1886, 1888, 1889, 1890, 1891, 1892, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1947, 1948, 1949, 1950, 1951, 1955, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1994, 1995, 1999, 2002, 2003, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2025, 2026, 2027, 2029, 2031, 2032, 2033, 2034, 2035, 2036, 2039, 2040, 2041, 2042, 2044, 2045, 2046, 2048, 2049, 2050, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2064, 2065, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2075, 2078, 2079, 2080, 2081, 2082, 2083, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2096, 2097, 2098, 2099, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2110, 2111, 2112, 2113, 2114, 2115, 2117, 2119, 2121, 2122, 2123, 2124, 2127, 2128, 2129, 2132, 2133, 2135, 2136, 2137, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158

United States–States–Alabama 242, 319, 457, 683, 790, 903, 905, 1104, 1149, 1266, 1389, 1482, 1702, 1728, 1840, 1888, 1903, 1921, 1969, 1978

United States–States–Alaska 200

United States–States–Arizona 210, 457, 616, 683, 790, 848, 903, 1071, 1482, 1702, 1921

United States–States–Arkansas 90, 146, 147, 159, 209, 242, 257, 319, 331, 361, 448, 457, 579, 683, 715, 721, 790, 806, 824, 903, 905, 925, 934, 1002, 1084, 1104, 1266, 1278, 1702, 1755, 1781, 1840, 1859, 1888, 1975, 2010, 2015, 2020

United States–States–California 75, 142, 159, 175, 209, 210, 211, 225, 242, 254, 275, 305, 308, 319, 352, 361, 381, 402, 414, 451, 457, 497, 526, 559, 654, 670, 672, 683, 685, 691, 715, 723, 767, 771, 790, 791, 792, 805, 817, 823, 835, 839, 848, 849, 856, 860, 888, 901, 902, 903, 911, 924, 932, 945, 949, 960, 980, 987, 989, 991, 1010, 1017, 1022, 1026, 1028, 1046, 1050, 1085, 1090, 1106, 1107, 1109, 1121, 1128, 1150, 1162, 1180, 1205, 1208, 1218, 1225, 1227, 1266, 1269, 1272, 1278, 1322, 1331, 1339, 1346, 1347, 1349, 1350, 1370, 1478, 1483, 1494, 1496, 1509, 1525, 1536, 1547, 1565, 1573, 1611, 1618, 1622, 1644, 1665, 1682, 1689, 1702, 1725, 1741, 1747, 1753, 1769, 1771, 1787, 1789, 1828, 1829, 1840, 1859, 1881, 1888, 1890, 1903, 1915, 1918, 1921, 1924, 1966, 1969, 1976, 1995, 2002, 2013, 2016, 2027, 2044, 2049, 2067, 2070, 2074, 2080, 2082, 2090, 2093, 2095, 2103, 2104, 2112, 2113, 2133, 2156

United States–States–Colorado 156, 481, 497, 706, 723, 736, 817, 848, 858, 940, 960, 979, 1150, 1180, 1240, 1606, 1646, 1892, 1973, 1974, 2156

United States–States–Connecticut 65, 79, 221, 251, 313, 715, 790, 857, 903, 1075, 1106, 1266, 1407, 1439, 1471, 1496, 1542, 1635, 1702, 1840, 1935

United States–States–Delaware 62, 65, 77, 95, 136, 142, 143, 242, 413, 457, 663, 683, 690, 790, 903, 971, 1084, 1266, 1702, 1703, 1840, 1888, 2137

United States–States–District of Columbia (Washington, DC) 62, 75, 79, 122, 123, 124, 142, 191, 252, 253, 267, 320, 348, 350, 354, 402, 406, 452, 457, 481, 523, 548, 566, 568, 579, 586, 651, 683, 690, 715, 721, 722, 736, 758, 771, 790, 812, 826, 827, 860, 871, 878, 881, 890, 899, 905, 976, 1050, 1070, 1075, 1103, 1107, 1204, 1266, 1276, 1407, 1454, 1602, 1603, 1698, 1702, 1713, 1745, 1747, 1797, 1800, 1840, 1868, 1923, 1965, 1967, 1991, 2012, 2029, 2065, 2075, 2096, 2129, 2133, 2136

United States–States–Florida 242, 468, 524, 715, 857, 873, 904, 960, 1075, 1080, 1150, 1225, 1266, 1372, 1381, 1498, 1702, 1722, 1724, 1739, 1807, 1840, 1879, 1888, 1934, 1955, 2123, 2124, 2143, 2156

United States–States–Georgia 79, 242, 457, 540, 579, 683, 715, 790, 903, 905, 934, 957, 985, 987, 1009, 1150, 1169, 1266, 1384, 1439, 1593, 1690, 1702, 1840, 1888, 1948, 2029, 2098

United States–States–Hawaii 200, 924, 960, 979, 1000, 1108, 1737, 1767, 1787, 1788, 1860

United States–States–Idaho 1957

United States–States–Illinois 3, 15, 23, 25, 26, 27, 28, 29, 35, 37, 44, 45, 46, 47, 50, 54, 55, 58, 59, 61, 62, 64, 65, 68, 73, 74, 75, 77, 79, 80, 83, 85, 86, 90, 91, 92, 94, 95, 96, 100, 101, 102, 103, 105, 106, 108, 110, 111, 113, 115, 118, 119, 120, 121, 122, 123, 124, 125, 126, 129, 131, 132, 137, 138, 139, 140, 142, 143, 146, 147,

151, 153, 155, 157, 158, 159, 160, 166, 169, 171, 172, 175, 179, 184, 185, 195, 197, 198, 206, 209, 210, 211, 215, 218, 220, 223, 225, 235, 236, 237, 238, 241, 242, 245, 249, 251, 253, 254, 257, 259, 260, 265, 266, 275, 279, 281, 283, 288, 289, 293, 298, 299, 301, 305, 306, 310, 312, 313, 319, 320, 335, 338, 343, 344, 346, 359, 361, 373, 384, 386, 388, 389, 393, 397, 402, 405, 409, 410, 435, 440, 449, 457, 458, 461, 462, 466, 467, 468, 470, 472, 475, 476, 478, 480, 484, 485, 487, 490, 494, 498, 508, 513, 514, 515, 520, 523, 526, 531, 532, 537, 540, 542, 545, 547, 550, 554, 556, 557, 558, 559, 560, 564, 565, 566, 568, 569, 574, 575, 576, 579, 580, 582, 585, 588, 589, 590, 592, 593, 594, 595, 597, 599, 600, 603, 605, 606, 608, 609, 612, 613, 614, 618, 620, 624, 631, 634, 635, 636, 640, 641, 642, 643, 649, 650, 651, 655, 657, 663, 666, 671, 673, 675, 676, 677, 679, 683, 685, 689, 690, 691, 692, 698, 702, 704, 705, 707, 708, 712, 713, 716, 717, 718, 720, 721, 722, 725, 729, 730, 731, 733, 734, 735, 739, 740, 741, 742, 749, 750, 753, 757, 759, 761, 762, 768, 770, 773, 774, 775, 784, 787, 790, 792, 794, 795, 806, 816, 819, 822, 825, 826, 827, 828, 831, 832, 839, 842, 844, 846, 848, 849, 852, 854, 860, 874, 876, 883, 884, 885, 887, 889, 891, 894, 898, 900, 901, 903, 908, 913, 914, 925, 926, 927, 928, 929, 930, 933, 934, 938, 939, 947, 951, 952, 955, 957, 960, 961, 968, 971, 972, 982, 983, 987, 990, 996, 1001, 1002, 1003, 1009, 1010, 1020, 1023, 1027, 1028, 1029, 1043, 1047, 1048, 1054, 1065, 1066, 1067, 1069, 1070, 1071, 1072, 1075, 1078, 1079, 1080, 1082, 1083, 1084, 1085, 1088, 1091, 1095, 1097, 1102, 1104, 1107, 1123, 1130, 1131, 1132, 1143, 1144, 1149, 1151, 1152, 1164, 1167, 1169, 1175, 1184, 1188, 1204, 1207, 1210, 1211, 1213, 1215, 1217, 1222, 1227, 1230, 1231, 1232, 1241, 1242, 1244, 1245, 1246, 1251, 1261, 1262, 1265, 1266, 1268, 1270, 1272, 1277, 1278, 1305, 1317, 1323, 1327, 1328, 1329, 1330, 1331, 1334, 1344, 1345, 1348, 1350, 1358, 1359, 1379, 1380, 1382, 1386, 1393, 1394, 1396, 1398, 1399, 1403, 1404, 1406, 1407, 1414, 1419, 1429, 1430, 1435, 1439, 1440, 1441, 1447, 1455, 1466, 1467, 1476, 1479, 1480, 1484, 1485, 1487, 1488, 1491, 1493, 1497, 1500, 1501, 1502, 1503, 1505, 1517, 1518, 1519, 1522, 1523, 1525, 1526, 1529, 1537, 1538, 1539, 1540, 1544, 1552, 1554, 1555, 1556, 1558, 1563, 1566, 1568, 1574, 1576, 1577, 1578, 1579, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1591, 1592, 1593, 1594, 1595, 1597, 1598, 1603, 1604, 1605, 1611, 1615, 1616, 1623, 1624, 1625, 1630, 1631, 1633, 1634, 1641, 1642, 1645, 1647, 1650, 1659, 1660, 1661, 1663, 1664, 1666, 1667, 1668, 1670, 1672, 1673, 1674, 1675, 1676, 1677, 1680, 1681, 1682, 1690, 1691, 1694, 1697, 1702, 1704, 1705, 1706, 1710, 1713, 1715, 1717, 1719, 1721, 1722, 1723, 1724, 1726, 1738, 1740, 1743, 1744, 1750, 1757, 1763, 1765, 1766, 1773, 1774, 1775, 1780, 1781, 1783, 1784, 1786, 1787, 1792, 1793, 1794, 1795, 1798, 1799, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1810, 1811, 1812, 1813, 1814, 1816, 1817, 1818, 1819, 1820, 1821, 1822, 1824, 1825, 1826, 1828, 1833, 1835, 1837, 1838, 1839, 1840, 1843, 1844, 1848, 1849, 1853, 1856, 1857, 1859, 1862, 1864, 1865, 1866, 1867, 1868, 1871, 1874, 1876, 1878, 1881, 1882, 1885, 1888, 1889, 1891, 1892, 1895, 1896, 1897, 1899, 1900, 1903, 1904, 1906, 1911, 1912, 1917, 1921, 1922, 1923, 1924, 1925, 1927, 1928, 1932, 1942, 1943, 1948, 1949, 1950, 1951, 1952, 1955, 1958, 1959, 1963, 1968, 1970, 1972, 1973, 1974, 1976, 1978, 1979, 1982, 1983, 1984, 1985, 1986, 1987, 1989, 1990, 1991, 1997, 1999, 2001, 2002, 2003, 2009, 2014, 2015, 2016, 2019, 2020, 2022, 2026, 2029, 2031, 2032, 2033, 2036, 2041, 2042, 2050, 2052, 2053, 2059, 2064, 2068, 2072, 2078, 2079, 2086, 2091, 2101, 2102, 2103, 2107, 2108, 2111, 2121, 2122, 2123, 2124, 2132, 2135, 2137, 2142, 2145, 2146, 2147, 2149, 2152, 2154, 2157

United States–States–Indiana 15, 27, 29, 37, 42, 58, 59, 75, 79, 90, 94, 95, 97, 115, 118, 121, 129, 132, 137, 138, 139, 142, 146, 147, 151, 158, 159, 160, 163, 170, 172, 175, 179, 195, 209, 211, 218, 220, 225, 242, 251, 254, 257, 268, 288, 299, 300, 305, 310, 319, 320, 341, 344, 361, 402, 457, 470, 472, 491, 559, 579, 598, 618, 658, 683, 710, 715, 750, 790, 806, 848, 854, 887, 903, 906, 925, 986, 1009, 1064, 1067, 1068, 1079, 1080, 1082, 1084, 1085, 1088, 1091, 1141, 1149, 1204, 1261, 1266, 1278, 1406, 1414, 1473, 1482, 1501, 1506, 1517, 1551, 1561, 1645, 1668, 1693, 1698, 1702, 1738, 1831, 1840, 1846, 1853, 1856, 1862, 1865, 1888, 1891, 1910, 1921, 1927, 1976, 2018, 2026, 2137

United States–States–Iowa 18, 19, 48, 49, 52, 58, 59, 63, 66, 67, 89, 90, 91, 110, 111, 114, 115, 121, 129, 132, 133, 137, 139, 142, 146, 147, 151, 158, 159, 162, 172, 174, 175, 177, 180, 183, 187, 208, 209, 211, 218, 225, 233, 242, 243, 245, 254, 257, 265, 275, 283, 288, 298, 299, 306, 307, 310, 313, 319, 320, 325, 326, 327, 331, 341, 344, 361, 367, 402, 405, 406, 435, 452, 457, 468, 472, 476, 499, 521, 525, 533, 540, 554, 559, 579, 612, 620, 629, 680, 683, 690, 710, 715, 721, 730, 750, 790, 806, 816, 826, 844, 848, 885, 903, 905, 934, 955, 1002, 1063, 1084, 1085, 1088, 1103, 1109, 1134, 1150, 1175, 1187, 1215, 1225, 1227, 1239, 1243, 1266, 1305, 1364, 1396, 1415, 1421, 1427, 1432, 1455, 1460, 1469, 1473, 1480, 1481, 1526, 1534, 1536, 1541, 1542, 1548, 1564, 1573, 1603, 1607, 1645, 1668, 1689, 1698, 1701, 1702, 1705, 1712, 1747, 1754, 1777, 1778, 1780, 1797, 1802, 1810, 1820, 1825, 1833, 1840, 1846, 1847, 1854, 1855, 1856, 1859, 1871, 1875, 1879, 1881, 1888, 1901, 1903, 1918, 1929, 1935, 1944, 1955, 1960, 1962, 1970, 1975, 1976, 1992, 1995, 2002, 2006, 2007, 2016, 2017, 2034, 2039, 2044, 2054, 2056, 2060, 2068, 2070, 2073, 2081, 2092, 2099, 2106, 2115, 2119, 2121, 2122, 2123, 2124, 2128, 2137, 2143, 2157

United States–States–Kansas 46, 143, 159, 172, 175, 176, 182, 209, 211, 217, 225, 242, 254, 275, 319, 361, 385, 387, 405, 409, 410, 426, 457, 461, 462, 472, 576, 579, 618, 654, 662, 683, 706, 720, 756, 766, 790, 811, 836, 855, 903, 931, 934, 944, 1002, 1014, 1070, 1149, 1221, 1230, 1251, 1266, 1298, 1435, 1443, 1455, 1480, 1519, 1529, 1594, 1698, 1702, 1729, 1730, 1825, 1840, 1888, 2076, 2123, 2135

United States–States–Kentucky 37, 159, 172, 209, 242, 245, 254, 319, 457, 487, 540, 579, 683, 750, 758, 790, 903, 992, 993, 1023, 1027, 1075, 1082, 1084, 1266, 1470, 1471, 1476, 1501, 1620, 1630, 1702, 1747, 1785, 1840, 1856, 1865, 1921, 2015, 2153

United States–States–Louisiana 90, 175, 209, 210, 218, 242, 300, 313, 332, 361, 402, 435, 457, 459, 654, 683, 750, 931, 960, 1070, 1187, 1230, 1266, 1378, 1611, 1671, 1685, 1702, 1840, 2121

United States–States–Maine 715, 723, 1273, 1339, 1712, 1778, 1846, 1847, 1875, 1901, 1962, 2017, 2035, 2039, 2054, 2060, 2062, 2073, 2081, 2092, 2099, 2106, 2115, 2119

United States–States–Maryland 75, 79, 142, 160, 242, 254, 319, 457, 476, 523, 540, 557, 683, 715, 790, 842, 846, 903, 971, 1070, 1084, 1266, 1342, 1381, 1482, 1484, 1702, 1840, 1888, 1914, 2089

United States–States–Massachusetts 79, 142, 205, 254, 319, 324, 413, 522, 653, 715, 723, 816, 817, 839, 860, 888, 911, 945, 1004, 1070, 1075, 1090, 1107, 1150, 1167, 1180, 1225, 1417, 1418, 1437,

1451, 1496, 1509, 1573, 1708, 1725, 1859, 1879, 1883, 1916, 1971, 2014, 2030, 2044, 2058, 2087, 2089, 2156

United States–States–Michigan 4, 58, 61, 62, 65, 74, 75, 79, 83, 90, 117, 121, 129, 137, 139, 142, 143, 159, 172, 175, 209, 242, 254, 280, 313, 324, 361, 392, 481, 482, 570, 571, 618, 653, 715, 737, 771, 801, 829, 848, 857, 858, 860, 886, 1001, 1023, 1050, 1070, 1075, 1079, 1088, 1150, 1278, 1292, 1343, 1443, 1472, 1475, 1479, 1497, 1515, 1589, 1611, 1642, 1645, 1698, 1702, 1725, 1780, 1831, 1855, 1859, 1865, 1888, 1961, 2045, 2152, 2153, 2154, 2156

United States–States–Minnesota 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 21, 27, 30, 32, 33, 36, 41, 46, 57, 58, 68, 86, 87, 90, 93, 100, 101, 104, 106, 107, 120, 121, 125, 128, 131, 132, 138, 140, 141, 142, 143, 144, 146, 147, 149, 152, 159, 160, 161, 163, 164, 167, 168, 171, 172, 173, 178, 184, 185, 186, 189, 190, 191, 192, 195, 196, 199, 209, 210, 211, 216, 219, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 232, 241, 242, 244, 246, 247, 248, 251, 252, 253, 254, 255, 259, 260, 261, 262, 263, 264, 265, 266, 268, 269, 271, 272, 273, 275, 276, 277, 278, 279, 280, 281, 283, 285, 286, 287, 296, 297, 298, 299, 302, 304, 305, 309, 310, 311, 312, 315, 316, 317, 318, 319, 321, 322, 323, 325, 327, 328, 329, 330, 332, 333, 334, 335, 336, 337, 342, 344, 345, 346, 347, 349, 353, 356, 357, 358, 360, 361, 362, 364, 365, 366, 367, 368, 369, 370, 371, 373, 375, 376, 378, 379, 380, 381, 383, 391, 393, 394, 400, 401, 402, 403, 405, 406, 407, 410, 412, 415, 418, 419, 420, 421, 422, 423, 424, 425, 428, 429, 430, 431, 432, 433, 434, 436, 440, 446, 447, 450, 453, 454, 456, 457, 459, 460, 461, 462, 463, 464, 469, 470, 471, 472, 473, 477, 479, 485, 486, 488, 490, 491, 492, 495, 497, 498, 499, 500, 501, 502, 503, 504, 505, 508, 513, 514, 516, 518, 520, 521, 523, 526, 528, 531, 535, 540, 541, 549, 556, 557, 559, 566, 568, 579, 590, 610, 612, 617, 619, 620, 622, 629, 663, 679, 680, 683, 684, 710, 715, 721, 745, 754, 755, 786, 790, 806, 816, 844, 848, 887, 901, 903, 904, 905, 931, 934, 944, 958, 959, 971, 972, 991, 1002, 1009, 1041, 1072, 1084, 1101, 1107, 1167, 1204, 1227, 1239, 1261, 1266, 1305, 1364, 1406, 1414, 1427, 1432, 1455, 1491, 1501, 1503, 1517, 1534, 1541, 1548, 1551, 1555, 1556, 1561, 1562, 1566, 1571, 1575, 1590, 1597, 1645, 1647, 1685, 1687, 1698, 1702, 1720, 1723, 1725, 1742, 1759, 1768, 1840, 1845, 1856, 1865, 1871, 1877, 1888, 1917, 1923, 1944, 1955, 1957, 1969, 1975, 1997, 2005, 2012, 2016, 2046, 2056, 2069, 2121, 2122, 2123, 2141, 2142, 2145, 2157

United States–States–Mississippi 242, 254, 313, 319, 457, 683, 790, 806, 899, 903, 905, 955, 1149, 1266, 1480, 1702, 1757, 1840, 1888

United States–States–Missouri 31, 59, 62, 65, 79, 90, 97, 132, 134, 137, 139, 142, 146, 147, 159, 172, 198, 202, 209, 210, 211, 217, 218, 225, 242, 254, 257, 310, 319, 344, 361, 402, 416, 457, 470, 481, 540, 542, 553, 566, 576, 579, 594, 623, 653, 654, 679, 683, 690, 698, 715, 790, 806, 816, 824, 826, 827, 848, 887, 899, 903, 905, 906, 931, 960, 1002, 1023, 1048, 1066, 1067, 1070, 1084, 1101, 1138, 1144, 1175, 1177, 1250, 1266, 1268, 1279, 1298, 1334, 1348, 1414, 1416, 1443, 1472, 1480, 1501, 1526, 1529, 1541, 1551, 1668, 1701, 1702, 1719, 1725, 1757, 1762, 1779, 1840, 1852, 1868, 1879, 1881, 1888, 1944, 1962, 1969, 1988, 2003, 2007, 2015, 2016, 2017, 2026, 2034, 2035, 2039, 2046, 2054, 2055, 2060, 2065, 2110, 2153, 2157

United States–States–Montana 1266, 1702, 1840, 1957, 1993

United States–States–Nebraska 90, 132, 147, 159, 172, 209, 211, 225, 242, 254, 319, 344, 457, 461, 479, 481, 483, 490, 498, 506, 514, 587, 610, 615, 622, 635, 674, 683, 687, 736, 790, 848, 903, 1002, 1025, 1084, 1103, 1266, 1415, 1416, 1443, 1444, 1482, 1541, 1549, 1645, 1689, 1698, 1702, 1747, 1840, 1865, 1877, 1888, 1892, 1905, 1923, 2006, 2007, 2046, 2055

United States–States–New Hampshire 1388, 1455, 2100

United States–States–New Jersey 5, 42, 58, 65, 79, 142, 143, 154, 181, 275, 305, 381, 468, 520, 629, 683, 715, 721, 723, 724, 790, 839, 903, 1075, 1083, 1085, 1095, 1266, 1407, 1515, 1702, 1773, 1840, 1888, 1898, 2044, 2087

United States–States–New Mexico 715, 848, 960

United States–States–New York 21, 35, 58, 62, 68, 69, 75, 79, 86, 90, 93, 99, 100, 101, 106, 120, 125, 129, 131, 132, 140, 142, 143, 150, 159, 160, 163, 172, 179, 185, 200, 207, 209, 225, 242, 254, 275, 305, 310, 319, 324, 332, 344, 400, 402, 457, 459, 468, 497, 523, 533, 553, 570, 571, 577, 580, 655, 663, 683, 684, 688, 710, 715, 790, 857, 860, 900, 903, 932, 957, 960, 985, 1028, 1070, 1075, 1081, 1091, 1104, 1108, 1119, 1150, 1164, 1225, 1249, 1266, 1365, 1396, 1417, 1431, 1439, 1442, 1464, 1477, 1496, 1512, 1514, 1536, 1558, 1607, 1620, 1678, 1684, 1702, 1723, 1788, 1840, 1873, 1907, 1930, 1931, 1940, 1967, 2020, 2025, 2030, 2044, 2045, 2056, 2057, 2085, 2088, 2094, 2118, 2152

United States–States–North Carolina 15, 39, 42, 58, 132, 137, 139, 142, 153, 172, 209, 220, 242, 254, 257, 319, 457, 540, 559, 683, 715, 731, 739, 740, 790, 903, 925, 934, 960, 971, 1047, 1084, 1266, 1702, 1744, 1840, 1869, 1888, 2020, 2103

United States–States–North Dakota 209, 211, 242, 298, 620, 1247, 1671, 2021, 2070, 2122

United States–States–Ohio 20, 22, 23, 37, 45, 46, 50, 59, 65, 68, 75, 79, 86, 90, 95, 100, 101, 118, 121, 125, 131, 132, 137, 139, 140, 142, 143, 146, 147, 150, 151, 158, 159, 160, 163, 172, 179, 185, 195, 198, 209, 210, 211, 225, 240, 242, 251, 254, 257, 305, 310, 312, 319, 320, 329, 336, 344, 346, 359, 361, 373, 374, 381, 386, 408, 410, 414, 416, 440, 448, 457, 520, 523, 526, 542, 553, 557, 576, 579, 618, 655, 663, 683, 684, 690, 750, 790, 801, 806, 829, 848, 852, 860, 885, 898, 903, 934, 971, 985, 987, 994, 995, 1001, 1009, 1041, 1062, 1067, 1075, 1079, 1080, 1084, 1214, 1266, 1278, 1404, 1439, 1443, 1459, 1469, 1470, 1471, 1472, 1474, 1476, 1479, 1503, 1525, 1534, 1535, 1566, 1643, 1645, 1689, 1698, 1702, 1782, 1783, 1817, 1840, 1859, 1865, 1868, 1873, 1926, 1957, 2016, 2036, 2121, 2140, 2156

United States–States–Oklahoma 94, 132, 172, 209, 210, 211, 217, 242, 992, 993, 1027, 2153

United States–States–Oregon 21, 225, 275, 715, 723, 817, 897, 1101, 1343, 1479, 1525, 1572, 1725, 1800, 1957, 2023, 2110, 2156

United States–States–Pennsylvania 39, 42, 58, 65, 79, 84, 137, 139, 142, 159, 160, 195, 209, 225, 233, 236, 242, 254, 305, 313, 319, 327, 352, 402, 468, 520, 579, 688, 715, 882, 975, 1107, 1167, 1266,

1418, 1702, 1840, 1868, 1888, 2085, 2102, 2132

United States–States–Rhode Island 413, 715

United States–States–South Carolina 210, 242, 254, 319, 457, 532, 540, 683, 722, 790, 827, 903, 934, 1104, 1191, 1266, 1702, 1837, 1840, 1913, 2020

United States–States–South Dakota 97, 172, 209, 211, 221, 242, 254, 319, 386, 452, 620, 1415, 1416, 1443, 1685, 1698, 1702, 1841, 1865, 1888, 1921, 1969, 2046

United States–States–Tennessee 75, 79, 134, 142, 159, 172, 209, 210, 225, 233, 242, 254, 319, 402, 457, 472, 540, 632, 672, 683, 715, 723, 724, 764, 790, 803, 804, 806, 817, 838, 839, 858, 860, 886, 903, 934, 960, 973, 992, 993, 1027, 1041, 1050, 1084, 1106, 1107, 1201, 1266, 1278, 1279, 1395, 1409, 1454, 1483, 1490, 1494, 1542, 1619, 1644, 1648, 1664, 1669, 1702, 1716, 1735, 1751, 1825, 1840, 1859, 1888, 1898, 1919, 1964, 2102, 2132, 2151, 2153, 2156

United States–States–Texas 150, 210, 233, 242, 254, 275, 319, 392, 457, 540, 683, 715, 790, 839, 858, 903, 1050, 1081, 1227, 1266, 1346, 1466, 1482, 1496, 1501, 1530, 1649, 1702, 1840, 1846, 1856, 1888, 1905, 1915, 1969, 2007, 2068, 2076

United States–States–Utah 627, 664, 943, 960, 1418, 1543, 1630, 1722

United States–States–Vermont 715, 2117

United States–States–Virginia 15, 65, 90, 95, 129, 132, 136, 137, 138, 139, 146, 147, 159, 172, 209, 218, 220, 225, 242, 254, 344, 361, 452, 457, 683, 709, 715, 750, 790, 903, 934, 985, 1021, 1070, 1251, 1266, 1637, 1702, 1840, 1879, 1888, 1941, 2044, 2056

United States–States–Washington state 15, 42, 65, 75, 79, 137, 139, 153, 160, 172, 216, 225, 251, 402, 519, 654, 715, 723, 844, 931, 960, 1150, 1179, 1364, 1432, 1435, 1685, 1733, 1739, 1759, 1760, 1767, 1787, 1832, 1936, 1999, 2007, 2014, 2022, 2034, 2058, 2075, 2089, 2090

United States–States–Wisconsin 17, 27, 29, 30, 34, 42, 43, 44, 46, 50, 51, 53, 56, 58, 59, 60, 61, 62, 65, 68, 70, 71, 72, 76, 78, 79, 81, 86, 88, 93, 96, 97, 100, 101, 103, 106, 109, 112, 120, 125, 131, 139, 140, 142, 143, 146, 147, 159, 172, 185, 199, 209, 210, 242, 254, 281, 313, 319, 395, 468, 476, 491, 520, 556, 579, 663, 683, 690, 842, 848, 860, 898, 931, 992, 993, 1070, 1079, 1107, 1225, 1227, 1298, 1343, 1406, 1480, 1501, 1561, 1879, 1881, 1888, 1903, 1957, 2121, 2157

Upjohn, Inc. Named Pharmacia & Upjohn since 2 Nov. 1995 1515, 1630, 1725

Urbana Laboratories (Urbana, Illinois), Maker of Legume Inoculants. Founded by Albert Lemuel Whiting in 1919 320, 435

Urease. *See* Enzymes in the Soybean–Urease and Its Inactivation

U.S. Regional Soybean Industrial Products Laboratory (Urbana, Illinois). Founded April 1936. Analytical Section Merged into

Northern Regional Research Lab. (Peoria) 1 July 1942 62, 65, 90, 92, 94, 129, 132, 137, 139, 153, 172, 175, 198, 254, 298, 301, 313, 402, 440, 1083, 1109, 1421

U.S. Soybean Export Council (USSEC) 2091, 2101, 2107

USA. *See* United States of America

USDA. *See* United States Department of Agriculture

USSR. *See* Europe, Eastern–USSR

Van Gundy, Dorothea. *See* Seventh-day Adventists–Cookbooks and Their Authors

Van Gundy, Theodore A. (1874-1935), and La Sierra Industries (La Sierra, California) 75, 1109

Vanaspati (Vegetable Shortening, Vegetable Ghee, or Vanaspati Ghee) 384, 2043

Vandemoortele N.V. (Izegem, Netherlands). Including Alpro (Early Years Only) and Vamo 778, 830, 877, 919, 1004, 1006, 1007, 1022, 1024, 1026, 1042, 1128, 1254, 1263, 1301, 1302, 1303, 1304, 1317, 2044

Varieties, soybean. *See* Soybean Varieties, Soybean Varieties USA–Large-Seeded Vegetable-Type

Variety development. *See* Breeding or Selection of Soybeans for Use as Soy Oil or Meal

Variety Development and Breeding of Soybeans (General, Including Varieties and Seeds) 61, 137, 139, 153, 313, 440, 489, 618, 879, 925, 1023, 2102, 2132

Variety Development, Breeding, Selection, Evaluation, Growing, or Handling of Soybeans for Food Uses 816, 1033, 1338, 1536, 1791

Variety development of soybeans. *See* Breeding of Soybeans and Classical Genetics

Vegan cookbooks. *See* Vegetarian Cookbooks–Vegan Cookbooks

Veganism. *See* Vegetarianism–Veganism

Vegetable oils. *See* Specific Oilseeds such as Peanut Oil, Sesame Oil, Sunflower Oil, etc

Vegetable soybeans. *See* Green Vegetable Soybeans

Vegetable-type or edible soybeans. *See* Green Vegetable Soybeans–Large-Seeded Vegetable-Type or Edible Soybeans, General Information About, Not Including Use As Green Vegetable Soybeans

Vegetable-type soybeans. *See* Green Vegetable Soybeans–Vegetable-Type, Garden-Type, or Edible or Food-Grade Soybeans

Vegetarian and Vegan Diets–Nutrition / Nutritional Aspects–

Children and Teenagers 324, 805

Vegetarian Celebrities–Noted or Prominent Personalities and Famous People 921, 1612, 1914

Vegetarian Cookbooks. See also: Vegan Cookbooks 665, 668, 669, 738, 802, 872, 924, 1017, 1058, 1060, 1089, 1284, 1365, 1400, 1553, 1618, 1684, 1734, 1742, 1788, 1789, 1937, 1971, 2062, 2113

Vegetarian Cookbooks–Vegan / Plant-Based Cookbooks–Do Not Use Dairy Products or Eggs 672, 724, 732, 803, 973, 1000, 1118, 1121, 1161, 1162, 1201, 1283, 1346, 1395, 1644, 1686, 1735, 1790, 1836, 1914, 1941, 2023, 2025, 2061, 2082, 2088, 2097, 2098, 2104, 2105, 2125

Vegetarian Diets–Medical Aspects–Cardiovascular System, Especially Heart Disease and Stroke, But Including Hypertension (High Blood Pressure) 772, 1346, 1618

Vegetarian Diets–Medical Aspects–Skeletal System Including Calcium, Teeth and Osteoporosis 1734, 1742

Vegetarian Diets–Nutrition / Nutritional Aspects–Minerals 997

Vegetarian Diets–Nutrition / Nutritional Aspects–Vitamins 74

Vegetarian / Meatless Burgers–Etymology of This Term and Its Cognates / Relatives in Various Languages 618, 1345

Vegetarian / Natural Foods Products Companies. See Imagine Foods, Inc. (California)

Vegetarian or Vegan Restaurants or Cafeterias 512, 736, 1180

Vegetarian pioneers. See Gandhi, Mohandas K. (“Mahatma”) (1869-1948), Graham, Sylvester (1794-1851), Jackson, James Caleb (1811-1881), Seventh-day Adventists–White, Ellen G. (1827-1915), Trall, Russell Thacher (1812-1877)

Vegetarianism, Athletics / Sports, and Athletes 669, 1914

Vegetarianism–Concerning a Diet and Lifestyle Free of Flesh Foods, But Which May Include Dairy Products or Eggs. See also: Veganism 74, 83, 324, 392, 466, 481, 482, 510, 511, 526, 533, 543, 552, 570, 571, 576, 622, 678, 704, 715, 736, 737, 767, 773, 782, 805, 838, 840, 848, 852, 869, 881, 886, 895, 921, 922, 1008, 1016, 1034, 1037, 1087, 1099, 1126, 1136, 1140, 1146, 1172, 1180, 1186, 1188, 1208, 1209, 1233, 1252, 1257, 1271, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1329, 1330, 1336, 1344, 1352, 1377, 1403, 1408, 1409, 1412, 1418, 1429, 1433, 1435, 1437, 1438, 1446, 1457, 1462, 1494, 1502, 1525, 1533, 1534, 1557, 1580, 1596, 1619, 1646, 1669, 1677, 1715, 1716, 1738, 1741, 1751, 1761, 1786, 1790, 1836, 1914, 1915, 1919, 1949, 1964, 2045, 2053, 2075, 2089

Vegetarianism for Children and Teenagers 1446

Vegetarianism–Fruitarianism–Concerning a Fruitarian or Frugivorous Diet Consisting of Fruits, Nuts, and Seeds (Such as Cereal Grains or Legumes). Includes a Vegan Diet or Lifestyle Free of All Animal Products 838

Vegetarianism–Religious Aspects–Judeo-Christian Tradition (Including Trappists, Mormons). See also: Seventh-Day Adventists 481, 771, 970, 1058, 1343

Vegetarianism–Religious Aspects–Religions of Indian Origin–Buddhism (Including Zen), Hinduism, Jainism, Yoga, and Ayurveda 767, 772, 869, 1346

Vegetarianism–Seventh-day Adventist Work with 324, 392, 466, 481, 482, 510, 511, 526, 533, 570, 571, 715, 736, 737, 771, 772, 805, 848, 1000, 1087, 1099, 1291, 1292, 1294, 1302, 1333, 1339, 1351, 1353, 1365, 1446, 1514, 1525, 1534, 1571, 1734, 2045, 2075

Vegetarianism–Statistics and Analyses on the Number of Vegetarians or the Size of the Vegetarian Products Market 772, 1140, 1186, 1209, 1233, 1252, 1257, 1271, 1293, 1294, 1344, 1387, 1438, 1446, 1534, 1715

Vegetarianism, the Environment, and Ecology 1271, 1915

Vegetarianism–Veganism–Concerning a Plant-Based or Vegan Diet and Lifestyle Free of All Animal Products, Including Dairy Products, Eggs, and in Some Cases Honey and Leather 512, 672, 715, 804, 805, 838, 997, 1000, 1302, 1333, 1336, 1339, 1346, 1351, 1353, 1454, 1486, 1514, 1520, 1571, 1619, 1669, 1742, 1914, 1915, 1919, 2088, 2090

Vegetarianism–Vegetarian or Vegan Meals Served at Institutions (Colleges, Main-Stream Restaurants, Cafeterias, Fast Food Outlets, Hospitals, etc.). See also Vegetarian Restaurants 533

Vestro Foods, Inc. See Westbrae Natural Foods

Viability and life-span of soybean seeds. See Storage of Seeds

Viana Naturkost GmbH. See Tofutown.com

Victor Food Products, Ltd. (Scarborough, Ontario, Canada). Founded by Stephen Yu in 1978 1050

Victory Soya Mills Ltd. (Toronto, Ontario, Canada. Started in Nov. 1944 as Victory Mills Ltd. Named Sunsoy Products Ltd. from 1936 to 1945. Renamed Victory Mills, Ltd. from 1945 to 1954. Owned by (Subsidiary of) Canadian Breweries Ltd., then by Procter & Gamble from 1954, then by Central Soya Co. from 1985) 209, 231, 282, 489, 598, 618, 806, 904, 954, 1032, 1033, 1068, 1084, 1229, 1338, 1368, 1373, 1374, 1375, 1379, 1383, 1458, 1461, 1507, 1632, 1827, 2074

Videotapes or References to Video Tapes 1348, 1538, 1631, 1661, 1858

Vietnamese Overseas, Especially Work with Soy 1004, 1489, 1495

Vigna unguiculata or V. sinensis. See Cowpea or Black-Eyed Pea

Vitamin E (Eight Forms of Tocopherol, Natural Powerful Antioxidants) 884, 1041, 1218, 1515, 1593, 1601, 1666, 1667, 1704, 1715, 1731, 1765, 1766, 1775, 1776, 1778, 1781, 1784, 1795,

1814, 1833, 1882, 1885, 1899, 1906, 1988, 1994, 2109

Vitamins B-12 (Cyanocobalamin, Cobalamins) 273, 556, 669, 732, 803, 838, 840, 1346, 1486, 1593, 1789, 1915, 2090, 2112

Vitamins (General) 74, 83, 175, 214, 287, 324, 1251, 1254, 1304, 1319, 1326, 1333, 1519

Vitamins in a vegetarian diet. *See* Vegetarian Diets–Nutrition / Nutritional Aspects–Vitamins

Vitasoy International Holdings Ltd. (Hong Kong Soya Bean Products Co. Ltd. before 24 Sept. 1990), and Vitasoy (USA) Inc., (Brisbane, California–south of San Francisco). Including Nasoya Foods (from Aug. 1990) and Azumaya Inc. (from May 1993). Founded by K.S. Lo (Lived 1910 to 1995), in Hong Kong. Started in March 1940 496, 527, 529, 534, 539, 577, 578, 960, 1050, 1100, 1109, 1150, 1205, 1278, 1427, 1433, 1509, 1565, 1571, 1573, 1622, 1642, 1689, 1709, 1725, 1747, 1800, 1847, 1859, 1961, 2012, 2027, 2156

War, Civil, USA. *See* Civil War in USA (1861-1865)

War Food Administration of USDA. *See* United States Department of Agriculture (USDA)–War Food Administration (WFA)

War, world. *See* World War I–Soybeans and Soyfoods, World War II–Soybeans and Soyfoods

Water Use, Misuse, and Scarcity–Environmental Issues 1081

Waterproof goods or cloth. *See* Linoleum, Floor Coverings, Oilcloth, and Waterproof Goods

Wax (soy) for candles. *See* SoyaWax International

Websites or Information on the World Wide Web or Internet 1611, 1643, 1667, 1671, 1698, 1715, 1787, 1791, 1795, 1814, 1831, 1833, 1841, 1844, 1846, 1860, 1870, 1888, 1890, 1905, 1914, 1947, 1957, 1969, 1970, 1991, 2018, 2022, 2029, 2043, 2044

Wedge press. *See* Soybean Crushing–Equipment–Wedge Press

Weeds–Control and Herbicide Use 361, 489, 823, 1621, 1692, 1826

Weight of soybean seeds. *See* Seed Weight / Size (Soybeans)–Weight of 100 Seeds in Grams, or Number of Seeds Per Pound

Well (The), Pure & Simple, and New Age Distributing Co. (San Jose, California) 1050

Wenger International Inc. *See* Extruder / Extrusion Cooker Manufacturers–Wenger International Inc.

Wessanen (Royal), NV Co. (Based in the Netherlands). Acquired Tree of Life in Dec. 1985 and Balanced Foods in Dec. 1986 1042

Westbrae Natural Foods, Inc. (Berkeley, California). Founded in Feb. 1971 by Bob Gerner. Later in Carson. Subsidiary of Vestro Foods, Inc. Acquired by the Hain Food Group of Uniondale, New

York, 14 Oct. 1997 723, 817, 1021, 1107, 1150, 1205, 1278, 1459, 1479, 1509, 1565, 1567, 1571, 1573, 1689, 1709, 1725, 1787, 1800, 1859, 2057

Wheat Gluten and Seitan Industry and Market Statistics, Trends, and Analyses–By Geographical Region 1147, 1264

Wheat Gluten and Seitan Industry and Market Statistics, Trends, and Analyses–Individual Companies 1147, 1418

Wheat Gluten. Chinese–Pinyin: Mianjin / Mian-jin. Wade-Giles: Mienchin / Mien-chin 262, 324, 570, 576, 672, 678, 727, 763, 768, 771, 772, 778, 833, 845, 851, 857, 924, 940, 970, 973, 1052, 1075, 1076, 1121, 1138, 1147, 1152, 1237, 1264, 1292, 1361, 1371, 1372, 1409, 1431, 1441, 1447, 1464, 1469, 1476, 1483, 1485, 1492, 1521, 1594, 1618, 1619, 1669, 1817, 1919, 2045

Wheat Gluten Made into Seitan (Including Wheatmeal, Tan Pups, and Tan Pops) 839, 1004, 1263, 1417, 1418, 1437, 1464, 1469, 1496, 1570, 1571, 1619, 1637, 1644, 1669, 1684, 1708, 1716, 1737, 1751, 1788, 1898, 1914, 1919, 1937, 1941, 1964, 1971, 2023, 2025, 2056, 2061, 2062, 2082, 2083, 2088, 2089, 2097, 2098, 2104, 2131

Wheat Gluten or Seitan–Etymology of These Terms and Their Cognates/Relatives in Various Languages 1121

Whip Topping (Non-Dairy–Resembles Whipped Cream but Contains No Soy Protein) 526, 1070

Whip Topping (Non-Dairy–Resembles Whipped Cream or Whipping Cream and Contains Soy Protein) 200, 578, 603, 672, 890, 945, 1070, 1072, 1078, 1427, 1475, 1477, 1497, 1542, 1888, 1914, 1987, 2061, 2153

Whip Topping (with or without Soy)–Etymology of This Term and Its Cognates / Relatives in Various Languages 672

Whipped Topping. *See* Whip Topping

Whipping or foaming in soy proteins. *See* Soy Proteins–Isolates–Enzyme-Modified Soy Protein Isolates with Whipping / Foaming Properties Used to Replace Egg Albumen

White, Ellen G. (1827-1915). Co-Founder of Seventh-day Adventist Church 481, 771, 858, 880

White Wave, Inc. (Boulder, Colorado). Founded in Sept. 1977 by Steve Demos. Including Soyfoods Unlimited. Owned by Dean Foods Co. since 8 May 2002 848, 945, 960, 979, 1090, 1108, 1150, 1180, 1269, 1278, 1469, 1509, 1570, 1571, 1572, 1606, 1646, 1698, 1747, 1749, 1800, 1859, 1908, 1961, 1967, 2012, 2014, 2022, 2027, 2034, 2044, 2056, 2075, 2156

Whitehouse Products, Inc. *See* Delsoy Products, Inc.

Whiting, Albert Lemuel. *See* Urbana Laboratories

Whole Dry Soybean Flakes. *See* Microsoy Corp., Formerly Nichii Company

Whole Dry Soybeans, Ground or Mashed to a Paste After Boiling, or Ground Raw with Water to a Fresh Puree or Slurry (Including Japanese Gô) 137, 139, 659, 668

Whole Dry Soybeans (Used Boiled but Otherwise Unprocessed as Food) 123, 324, 417, 627, 665, 668, 669, 672, 678, 688, 724, 791, 802, 803, 810, 840, 902, 924, 942, 945, 948, 989, 1031, 1033, 1034, 1058, 1059, 1172, 1185, 1211, 1218, 1263, 1284, 1346, 1367, 1400, 1417, 1420, 1422, 1457, 1460, 1496, 1497, 1553, 1599, 1601, 1643, 1693, 1731, 1732, 1738, 1741, 1742, 1785, 1888, 1937, 1951, 1992, 2002, 2083, 2087

Whole Soy Flakes (Flaked Soybeans), Grits, Granules, or Textured Products, Made from Whole Dry Soybeans (Not Defatted). See Also: Soy Flour: Whole or Full-fat 946, 1280, 1299, 1370, 1992

Wholesome and Hearty Foods, Inc. See Gardenburger, Inc.

WholeSoy & Co. (subsidiary of TAN Industries, Inc.), Modesto WholeSoy Co. (California), and Aros Sojaprodukter (Örsundsbro, then Enköping, Sweden; Founded by Ted Nordquist. Started Feb. 1981) 860, 1042, 1049, 1269, 1319, 1354, 1356, 1749, 1966, 1969

Wildwood Harvest Foods, Inc. Formed on 24 Aug. 2001 by the merger of Wildwood Natural Foods, Inc. (Santa Cruz and Fairfax, California; started Nov. 1977) and Midwest Harvest, Inc. (Grinnell, Iowa; started Jan. 1999) 848, 860, 1049, 1747, 1960, 1995, 2002

Wildwood Natural Foods, Inc. See Wildwood Harvest, Inc.

Wing Seed Co. (Mechanicsburg, Champaign County, Ohio). Founded 1909. Including Joseph Elwyn Wing (1861-1915), Charles Bullard Wing (1878-1949), and David Grant Wing (1896-1984) 558

Winged Bean (*Psophocarpus tetragonolobus*) (Also Called Four-Angled Bean, Goa Bean, Goabean, Asparagus Bean, Asparagus Pea, Segidilla, Seguidilla or Seguidillas Bean, Square Podded Pea, Square Podded Crimson Pea, *Botor tetragonoloba*, *Dolichos*-, or *Lotus tetragonolobus*, Pois Carré, Kecipir or Ketjeper, Calamismis or Kalamismis) 1081

WISHH (World Initiative for Soy in Human Health), and World Soy Foundation (WSF). Projects of the American Soybean Association (ASA) 1891, 2000, 2035, 2050, 2065, 2068, 2135

Woodworth, Clyde M. (1888-1960, Plant Breeder, Univ. of Illinois) 558, 925, 1668, 2103

Worcestershire Sauce—Brands Made by Companies Other than Lea & Perrins 1161

Worcestershire Sauce (Soy Sauce Was the Main Ingredient before the 1940s). Including Lea & Perrins in England 1016, 1161, 1162, 2062

World 316, 317, 318, 334, 348, 350, 354, 384, 476, 629, 655, 722, 789, 878, 909, 1055, 1081, 1179, 1214, 1384, 1503, 1566, 1699, 1700, 1733, 1764, 1938, 1959, 1972, 1993, 2030, 2064, 2065, 2114, 2141, 2142, 2145, 2146, 2156

World Initiative for Soy in Human Health. See WISHH

World problems. See Hunger, Malnutrition, Famine, Food Shortages, and Mortality, Nuclear Power, Weapons, War, Fallout, or Radioactivity, Population Growth (Human) and Related Problems (Including Poverty), Protein Resources and Shortages, and the “World Protein Crisis / Gap / Problem” of 1950-1979, Sustainable Development and Growth

World problems—Environmental issues & concerns. See Environmental Issues, Concerns, and Protection (General, Including Deep Ecology, Pollution of the Environment, Global Warming, etc.)

World Soy Foundation (WSF). See WISHH (World Initiative for Soy in Human Health)

World—Soybean Production, Area and Stocks—Statistics, Trends, and Analyses 361, 789, 1503, 2048

World War I—Soybeans and Soyfoods. Also known as the “First World War” and “The Great War” 99, 157, 220, 750, 1075, 1124, 1227

World War II—Soybeans and Soyfoods. Also Called the “Second World War” 138, 149, 151, 152, 157, 158, 160, 163, 164, 170, 172, 179, 182, 188, 191, 192, 198, 207, 220, 230, 239, 266, 272, 295, 327, 367, 452, 466, 553, 579, 598, 618, 691, 750, 769, 824, 873, 931, 971, 1001, 1016, 1033, 1055, 1070, 1075, 1078, 1085, 1088, 1124, 1144, 1227, 1342, 1396, 1455, 1472, 1477, 1480, 1544, 1632, 1955, 2016, 2157

Worthington Foods, Inc. (Worthington, Ohio). Including Battle Creek Foods (Michigan) from 1960, and Madison Foods (Tennessee) from 1964. A subsidiary of Miles Laboratories from March 1970 to Oct. 1982. Including Loma Linda Foods from Jan. 1990 142, 361, 465, 466, 467, 497, 523, 525, 526, 533, 536, 538, 553, 555, 576, 581, 586, 604, 609, 610, 611, 619, 629, 631, 636, 638, 646, 651, 655, 658, 680, 681, 682, 684, 696, 700, 701, 710, 743, 760, 778, 801, 805, 839, 848, 857, 871, 880, 932, 1023, 1028, 1075, 1107, 1278, 1294, 1327, 1345, 1351, 1353, 1365, 1381, 1427, 1446, 1469, 1471, 1475, 1476, 1503, 1509, 1525, 1529, 1534, 1547, 1570, 1571, 1572, 1588, 1642, 1648, 1665, 1698, 1747, 1782, 1783, 1787, 1793, 1799, 1800, 1817, 1848, 1859, 1871, 1919, 1961, 1967, 2012

Yamato Tofuhaus Sojaprodukte GmbH. See Huegli Naehrmitel A.G. (Steinach-Arbon, Switzerland)

Yamei Kin (1864-1934). First Chinese Woman to Take a Medical Degree in the United States. Also Miss Y. May Kin and Mrs. Kin Eca da Silva 2102, 2132

Yellow soybeans. See Soybean Seeds—Yellow

Yield Statistics, Soybean 115, 182, 198, 231, 298, 470, 618, 769, 789, 959, 1033, 1456, 1504

Yogurt, etymology. See Soy Yogurt

Yogurt (From Dairy / Cow’s Milk)—Its Market or the Product

Compared with the Market for Tofu or Other Soyfoods, or the Soyfoods Themselves 1635

Yogurt, soy. *See* Soy Yogurt

Yoshihara Oil Mill, Ltd. (Kobe, Japan) 830

Yuba—Dried Yuba Sticks or Rolls, and Sweet Dried Yuba—Chinese-Style. In Chinese (Mandarin): Fuzhu (pinyin; zhu = “bamboo”). Fu Chu (Wade-Giles). In Cantonese Chinese Foo Jook / Fu Jook / Joke or Tiem Jook / Tim Jook / Tiem Joke. Also: Bean Curd Sticks, Bean Curd Bamboo 1056, 2130

Yuba, Homemade—How to Make at Home or on a Laboratory Scale, by Hand 924

Yuba (The Film That Forms Atop Soymilk When It Is Heated). In Chinese (Mandarin): Doufu Pi (“Tofu Skin”) or Doufu Yi (“Tofu Robes,” pinyin), Toufu P’i or Toufu I (Wade-Giles). English-Language Chinese Cookbooks and Restaurants: “Bean Curd Skin” 198, 324, 376, 603, 688, 767, 791, 902, 924, 945, 960, 973, 995, 1028, 1075, 1356, 1678, 1733, 1736, 1772, 1937, 1941, 1988, 2087, 2089, 2095, 2105, 2130

Yugoslavia. *See* Europe, Eastern—Serbia and Montenegro

Yukiwari natto. *See* Natto, Yukiwari

Yves Fine Foods (Founded by Yves Potvin, Feb. 1985, Vancouver, BC, Canada). Renamed Yves Veggie Cuisine in 1992. Acquired by Hain Celestial Group in June 2001 1571, 1572, 1800, 1863, 1945, 2056, 2057

Zaire. *See* Africa—Congo (formerly Zaire). Officially Democratic Republic of the Congo (DR Congo). Also known as Congo-Kinshasa

Zavitz, Charles Ambrose (1863-1942) of Ontario Agricultural College, Canada 618, 1033

Zea mays. *See* Corn / Maize



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