A Short History and Production Statistics of the Corn Sweeteners Industry

High fructose corn syrup (HFCS) was developed in the 1950s. Quotas and tariffs imposed on imported sugar in the late 1970s prompted food manufacturers to shift to corn sweeteners.. Coca Cola and Pepsi both switched from sugar to high fructose corn syrup in the 1980s.

The U.S. is the world′s largest consumer of natural sweeteners. In 2002, we consumed about 9.3 million tons of refined sugar, and about 12 million tons of corn sweeteners. In 1997, the corn sweetener industry used about 8% of the corn crop (20 million tons) and the fuel ethanol industry used about 13 million tons. These combined demands equal 13% of domestic demand for corn.

There are two grades of high fructose corn syrup. HFCS-42 is 42 percent fructose syrup. Further processing is required to make HFCS-55. Over 90 percent of HFCS-55 is used in the production of beverages (soft drinks). The beverage industry also uses about 40 percent of the HFCS-42. The rest goes to food manufacturers 34 percent, 14 percent to cereal and bakery producers, 9 percent to the dairy industry, and 1 percent to the candy industry.

Between 2002 and 2008 the use of corn sweeteners in soft drinks, cereals and a range of other products dropped 11 percent. A number of companies have stopped using corn syrup in some or all products, including Hunt's ketchup, Sara Lee, Snapple, Gatorade and Starbucks' baked goods. In 2010, eight million tons of corn sweeteners were delivered for use in American food products, while sugar increased to 10 million tons. I'm not sure that all 10 million tons went to food product companies as the total production of sugar in 2011 was 11 million tons and that was for all uses (food processing companies plus home use).

The high fructose corn syrup industry is dominated by five companies, Archer Daniels Midland Company, Tate and Lyle, Cargill, Corn Products Company International (CPC), and American Maize. ADM had 32 percent market share in 1994 followed by Tate & Lyle with 23 percent, Cargill with 19 percent and CPC and American Maize had 9 percent each.

Archer Daniels Midland Company

The history of food processing in America has been shaped, in large part, by the history of ADM. It all started back in the mid-1800s, when John W. Daniels and George P. Archer began their careers in the linseed crushing business. They incorporated the Archer Daniels Linseed Company in 1905 and began a century of growth and innovation. In the 1970s, the company turned its attention to corn processing. They purchased a corn wet milling plant in Cedar Rapids, Iowa, and in 1972, their grind was 8,000 bushels per day. In 1976, ADM started making high fructose corn syrup 42. The 70s also saw innovations in the form of high fructose corn syrup 55 and fuel ethanol, both of which ADM helped pioneer. In the 80s, ADM acquired corn processing facilities in Clinton, Iowa, and Montezuma, New York. They also entered the crystalline dextrose market. The 90s saw even more dramatic growth: the company began producing crystalline fructose, sorbitol and most recently maltodextrins. By the end of the decade, ADM's grind was 1.5 million bushels per day. Today, ADM Corn Processing is a global enterprise, with facilities throughout

Europe, Asia and Latin America. In the future, ADM will continue to use new technologies to develop new and exciting uses for corn. In 1983, ADM introduced Golden Gluten, an animal feed produced at its corn sweetener plant in Cedar Rapids, Iowa. Initially, the product proved a mixed blessing for the company. Farmers accepted it enthusiastically, however, ADM couldn't ship enough of it to keep up with demand. ADM is based in Decatur, IL and makes about one-fourth of the more than 30 billion pounds of corn sweetener produced in the United States each year.

Cargill, Incorporated
In 2002, Cargill was the second largest supplier of corn sweeteners. Cargill entered the corn wet milling industry in September 1967 with the purchase of an existing plant in Cedar Rapids, Iowa. The corporation saw this as a logical extension of grain origination and processing business. In 1973, Cargill built its first greenfield plant in Dayton, Ohio. Cargill has built additional plants since then including Memphis, Tenn., in 1976; Eddyville, Iowa, in 1985; and Blair, NE, in 1995. Cargill also operates the ProGold corn sweetener plant in Wahpeton, ND. Using the corn wet milling business, the company has expanded and developed a strong international presence. Wet milling plants are located in England, the Netherlands, Turkey, Brazil, Poland and Russia.

Up until the mid-1970s, product line offerings were limited to basic corn starches and corn syrups. In 1976, Cargill joined with Miles Laboratories in a joint venture company to produce the new corn sweetener called high fructose corn syrup. Miles decided to leave the business in the late 70s and Cargill proceeded to increase its presence in the high fructose corn syrup industry during the growth years of the 1980s.

Over time Cargill's portfolio continued to expand. In 1990, Cargill entered the worldwide acidulants business with a citric acid production facility, launching the company into the new world of fermentation. Cargill's presence in this area continues to grow, providing new opportunities for development of fermentation-based businesses. Currently, Cargill is involved in joint ventures producing lactic acid, lysine, erythritol and polylactide polymers.

Corn Products International, Inc.
In 1906, the Corn Products Refining Company was incorporated through a merger of leading corn refiners and construction of the Argo, Illinois, plant began. By 1919, Corn Products purchased controlling interest in the Canada Starch Company. In the 1920s, Cerelose, Corn Products' crystalline dextrose, was patented and trademarked. Corn Products established South American operations and has operated a multinational business for more than 70 years.

During the 1950s, Corn Products invented cationic starch and merged with Best Foods, Inc., forming Corn Products Company (later renamed CPC International). In 1976, production of invertose high fructose corn syrup began at the Argo plant. Operations grew in the 1980s with new plants and a partnership between the Canada Starch Company and a London, Ontario, corn refiner, forming Casco Inc. Expansion continued into the 1990s, including the establishment of a Mexican joint venture.