



"Improve the economic well-being of agriculture and enrich the quality of farm family life."

Let's Talk About: *High Fructose Corn Syrup*

High Fructose Corn Syrup, also known as HFCS, is an important sweetener in today's food and beverage markets that has improved the quality and efficiency of countless food and beverage products.

First developed from corn in the early 1970s, HFCS's popularity has grown rapidly and it is now the second-most consumed sweetener. In 2014, the average yearly per capita consumption of corn syrup was 26.8 pounds. The average yearly per capita consumption of refined cane and beet sugar was 40.2 pounds.ⁱ

Structurally, HFCS is nearly identical in composition to table sugar. There are two main types of HFCS used in food production, HFCS-55, 55% fructose and 45% glucose, and HFCS-42, 42% fructose and 58% glucose. By comparison, table sugar contains approximately 50% glucose and 50% fructose. Both HFCS and sugar have 4 calories per gram.ⁱⁱ

HFCS is included on the FDA's "Generally Recognized as Safe" status for use in food.ⁱⁱⁱ HFCS meets with the FDA's policy requirements for using the term "natural." It contains no artificial or synthetic ingredients or color additives.^{iv}

Current labeling by bread companies, beverage companies, and others that simply say "Contains no HFCS" or "Now HFCS Free" implies that HFCS is "bad" or "not as good as" sugar. Neither is true and therefore these labels are misleading.

Illinois Farm Bureau Policy

The Illinois Farm Bureau ("IFB") supports "The science-based labeling policies of U.S. Food and Drug Administration (FDA), including: No special labeling unless a food is significantly different than its traditional counterpart, or where a specific constituent is altered (e.g., nutritionally or when affecting allergenicity). That policy also supports voluntary labeling using statements which are truthful and not misleading."^v

Countering the Myths about HFCS

- Studies conducted found "no differences in the metabolic effects" of HFCS and sugar.^{vi}
- Contrary to speculation, HFCS does not affect the body's ability to know when it is full.^{vii}
- HFCS is not sweeter than sugar; HFCS was created to be sugar's equivalent.^{viii}
- HFCS is not "high in fructose," its name was derived to indicate it has more fructose than regular corn syrup. HFCS has approximately the same amount of fructose as table sugar and honey.^{ix}

- HFCS does not cause pancreatic cancer.^x
- The price of sugar is kept artificially high due to import tariffs and has benefitted greatly from the change in consumer demand based on the anti-HFCS campaign. HFCS is much cheaper than sugar and passes those financial benefits on to the customer.^{xi}

Benefits of HFCS

- Beverages are produced more easily with HFCS than with sugar because there is no need to dissolve HFCS as there is with sugar.^{xii}
- HFCS adds taste, volume, tenderness, and texture to food.^{xiii}
- HFCS prolongs freshness and moisture.^{xiv}

HFCS and Health

- Health experts and researchers agree, the chief cause of obesity is an imbalance between calories consumed and calories burned, not the use of HFCS in food products.
- According to the American Dietetic Association, “obesity is a complex problem and its cause cannot be simply attributed to any one component of the food supply such as sweeteners.”^{xv}
- According to the Mayo Clinic “too much added sugar- not just high fructose corn syrup – can contribute unwanted calories that are linked to health problems, such as weight gain, type 2 diabetes, metabolic syndrome and high triglyceride levels.”^{xvi}

Quotes from the Experts

- “‘Sugar’ usually refers just to sucrose made from sugar cane and sugar beets; it is glucose and fructose stuck together. HFCS...is also made of glucose and fructose, but separated. Sucrose and HFCS work the same way in the body and are hardly distinguishable physiologically.” *Dr. Marion Nestle, Paulette Goddard Professor of Nutrition, Food Studies, and Public Health, New York University*^{xvii}
- “The hypothesis that HFCS-55 is ‘sweeter than sucrose and creates cravings that induce over-consumption and weight gain’ seems implausible.” *Richard A. Forshee*^{xviii}
- “The real issue is that excessive consumption of any sugars may lead to health problems.” *Center for Science in the Public Interest*^{xix}
- “The escalating rate of overweight/obesity coincides with many more credible explanations than increased HFCS consumption. Promoting implausible hypotheses confuses and frustrates individuals and instigates ineffective policy solutions that detract from other more effective and efficient solutions.” *Center for Food and Nutrition Policy at Virginia Tech*^{xx}

As an affordable, flexible, and stable sweetener, HFCS consumption has grown over the past three decades to comprise a significant portion of the sweeteners used in food and beverage products. Over the same time period, other socio-economic changes such as lower levels of physical exercise and changes in food consumption patterns have contributed to higher rates of obesity in the American population. Removing HFCS from American food and beverages will not improve healthfulness or nutritional content of those products; suggesting otherwise misleads consumers about the real reason for weight gain, obesity, and related challenges.

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- ⁱ United States Department of Agriculture. Economic Research Service. (2014). *Sugar and sweeteners yearbook*. Washington, DC.
- ⁱⁱ White, J. S. (1992). Fructose syrup: production, properties and applications. In F. W. Schenck & R. E. Hebeda (Eds.), *Starch Hydrolysis Products – Worldwide Technology, Production, and Applications* (pp. 177-200). New York, NY: VCH Publishers, Inc.
- ⁱⁱⁱ Food and Drug Administration. United States Department of Health & Human Services. (2008). *GRAS notice*. GRN № 240. Gorinchem, The NETHERLANDS.
- ^{iv} Food and Drug Administration. United States Department of Health & Human Services. (2008). *Letter to Corn Refiners Association*. College Park, MD.
- ^v Illinois Farm Bureau. (2015). Food Labeling. Policy resolutions (pp.76). Bloomington, IL.
- ^{vi} Corn Refiners Association. (2010). Top Published Myths About High Fructose Corn Syrup. *SweetSurprise.com*. Online.
- ^{vii} White, J. S. (1993). Fructose syrup: production, properties and applications. In F. W. Schenck & R. E. Hebeda, (Eds.). *Starch Hydrolysis Products – Worldwide Technology, Production, and Applications* (pp. 177-200). New York, NY: VCH Publishers, Inc.
- ^{viii} Engber, Daniel. (2009). Dark Sugar: The decline and fall of high-fructose corn syrup. *Slate*. Online.
- ^{ix} American Dietetic Association. (2004). Use of Nutritive and Nonnutritive Sweeteners. *Journal of The American Dietetic Association* 104(2). Chicago, IL.
- ^x Knowles, David. (2010). Study on Fructose and Pancreatic Cancer Generates Premature and Potentially Misleading Conclusions. *Cancer Research Alliance*. Online.
- ^{xi} Engber, Daniel. (2009). Dark Sugar: The decline and fall of high-fructose corn syrup. *Slate*. Online.
- ^{xii} Blair Chancey. (2008). The science behind the sweetener. *QSR Magazine*. Online.
- ^{xiii} Quinn, Barbara. (2008, June 15). On Nutrition: Facts about High Fructose Corn Syrup. *The Monterey County Herald*, 38.
- ^{xiv} Corn Refiners Association. (2010). Top Published Myths About High Fructose Corn Syrup. *SweetSurprise.com*. Online.
- ^{xv} American Dietetic Association. (2004). Use of Nutritive and Nonnutritive Sweeteners. *Journal of The American Dietetic Association* 104(2). Chicago, IL.
- ^{xvi} Nelson, Jennifer K. "What is high-fructose corn syrup? What are the health concerns?" *Mayo Clinic*. Web. 30 June 2015.
- ^{xvii} Nestle, Marion. (2010). Posts about: High Fructose Corn Syrup. *Food Politics*. Online blog.
- ^{xviii} Forshee, Richard A., et al. (2007). A Critical Examination of the Evidence Relating to High Fructose Corn Syrup and Weight Gain. *Critical Reviews in Food Science and Nutrition*, 47(6), 561-582. University of Maryland–College Park: College Park, MD.
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