

High-fructose corn syrup

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High-fructose corn syrup (HFCS) – called **isoglucose**^[1] in Europe and **glucose-fructose** in Canada – comprises any of a group of [corn syrups](#) that has undergone [enzymatic](#) processing to increase its [fructose](#) content, and then been mixed with pure corn syrup (100% [glucose](#)). HFCS is ubiquitous in processed foods and beverages, including soft drinks, yogurt, cookies, salad dressing and tomato soup.^[2]

The most common types of high-fructose corn syrup are: HFCS 90 (mostly for making HFCS 55), approximately 90% fructose and 10% glucose; HFCS 55 (mostly used in soft drinks), approximately 55% fructose and 45% glucose; and HFCS 42 (used in many foods and baked goods), approximately 42% fructose and 58% glucose.^[3]

The process by which HFCS is produced was first developed by Richard Off. Marshall and Earl P. Kooi in 1927.^[4] The industrial production process was refined by Dr. Y. Takasaki at Agency of Industrial Science and Technology of Ministry of International Trade and Industry of Japan in 1965–1970. HFCS was rapidly introduced to many processed foods and [soft drinks](#) in the U.S. from about 1975 to 1985.

Per relative [sweetness](#), HFCS 55 is comparable to table sugar ([sucrose](#)), a [disaccharide](#) of fructose and glucose.^[5] That makes it useful to food manufacturers as a substitute for sucrose in soft drinks and processed foods. HFCS 90 is sweeter than sucrose; HFCS 42 is less sweet than sucrose.