Ice Cream and Frozen Desserts

Encyclopedia of American Industries

This industry classification encompasses establishments primarily engaged in manufacturing ice cream and other frozen desserts, including frozen yogurt, ice milk, ices and sherbets, frozen custard, mellorine, frozen tofu, and pops (frozen desserts on sticks).

Industry snapshot

The ice cream and frozen desserts industry is an important sector of the U.S. dairy industry, and the U.S. has consistently ranked as a world leader in ice cream production. Market saturation for ice cream and related frozen desserts was estimated to be greater than 90 percent of all households. About 9 percent of the U.S. milk supply goes toward the production of ice cream. Statistics from IBISWorld show that ice cream makers in the United States produced about $8 billion worth of ice cream in 2013. Furthermore, 366 ice cream makers operated in the country, and they had a workforce of 20,365 people. While industry trends showed a long-term decline because of the recession of 2008-09, with revenue falling by 1.2 percent per year between 2008 and 2013, business had picked up for ice cream makers during the end of that period as the economy recovered and manufacturers introduced low-fat and premium products to cater to shifts in demand.

Organization and Structure

The creation of ice cream begins with milk produced by America's dairy farmers, many of whom belong to large dairy cooperatives that market their milk to processors or, in some cases, operate their own processing facilities for the manufacture of ice cream and other dairy products. Dairy farmers in the United States had about 9.22 million cows in 2013, and the Department of Agriculture's Foreign Agricultural Service projected that this would increase to 9.25 million cows in 2014. These cows produced about 91.444 million metric tons of milk in 2013, while projections called for a rise to 93.123 million metric tons in 2014. In pounds, these figures are 201.6 billion and 205.3 billion, respectively.

Background and Development

Whether ice cream originated in China or Rome is a matter of debate, but there is little question that frozen desserts gained their position as one of America's favorite treats. Smooth and creamy ice
cream was introduced in the United States early in the twentieth century as a result of two technological advances: homogenization, which reduced the fat particle size in milk, and continuous freezing process, which enabled a consistent ice crystal structure. Production and manufacturing advances implemented during the next 100 years centered primarily on formulation refinements and stabilizer and process systems.

Ice cream is a frozen, pasteurized mixture of milk, cream, nonfat milk solids, sugars, and stabilizers. Its contents and manufacture are regulated by the government and must meet standards of identity (SID). To be called ice cream, a product must contain a minimum of 10 percent butterfat, which is dispersed throughout the mix to impart smooth texture. Fresh sweet cream is the best source of butterfat. Unsalted butter, which is about 83 percent fat, can replace 50 to 75 percent of sweet cream fat. Other fat sources that can be used include anhydrous butter oil, concentrated sweet cream, and dried cream. French ice cream, or frozen custard, also contains more than 1.4 percent of egg yolk solid.

Other standard ice cream ingredients include sugars and sweeteners, milk proteins, stabilizers, and emulsifiers. Sweetening agents can be natural (using corn sweeteners, sucrose processed from cane and beet sugars, or fructose) or artificial (using aspartame). The milk proteins used are whey proteins and casein. Milk and milk products themselves have some natural stabilizing and emulsifying properties that often eliminate the need for additional stabilizers and emulsifiers. Stabilizers help to prevent texture deterioration caused by inevitable temperature fluctuations that occur during distribution, which cause ice crystals to melt and reform into larger crystals. Emulsifiers enhance the whipping qualities of the ice cream mix by creating a smoother texture and body.

Flavorings may be added before or after pasteurization and may be pure flavor extracts, pure extracts with some synthetic or artificial components, or artificial flavors. Generally, premium ice creams use pure extracts and fruits, nuts, candies, and syrups to add flavor. Mix-in flavors created imaginative and popular ice cream flavors.

The luxury, or super premium, ice creams that regained popularity were pioneered by Reuben and Rose Mattus in the early 1960s. Using all top-quality, natural ingredients and no artificial stabilizers or other additives, the married couple created Haagen-Dazs, a highly successful product that set the pattern for rich, clean-tasting ice creams. Ice cream novelties such as ice pops, fudge sticks, fruit and juice bars, bite-size ice cream treats, and ice cream sandwiches, which were originally marketed for children, became popular with adults. Haagen-Dazs entered this market with products such as Dove bars and Haagen-Dazs frozen yogurt bars. In 1983, the Mattuses sold the company to Pillsbury for $70 million.

Sherbets must contain between 1 and 2 percent butterfat and between 2 and 5 percent total milk-derived solids, as defined by the Federal Code of Regulations. Ices contain no milk-derived ingredients or egg ingredients other than egg white and can be made with nonpasteurized mixes because of their typically high acidity formulation. Mellorine products, although similar to ice cream, contain a combination of vegetable and animal fat in place of butterfat. Federal standards of identity (SID) require mellorine products to contain at least 6 percent fat and no less than 3.5 percent protein.

The worldwide ice cream industry amounted to $59 billion in 2006, with North America accounting for $16.3 billion while Western Europe led with $21.5 billion. The U.S. Department of Agriculture (USDA)
reported that, during 2005, the total U.S. production of ice cream and related frozen desserts experienced a small increase. Ice cream and frozen dessert sales ranked third behind the fluid milk and cheese sectors of the dairy industry.

Many ice cream and frozen dessert makers were capitalizing on the ongoing popularity of "better-for-you" products. While none of them could produce an ice cream product that could be classified as "healthy," many worked to put out new products that had reduced fat or sugar to meet the demand of Americans who were looking to live a healthier lifestyle. Other specialty products included those with reduced carbohydrates and added calcium. Novelty and single-serve items were an important part of this trend, according to the International Dairy Foods Association (IDFA), as many consumers preferred the prepackaged portion when counting calories, carbs, or fat grams.

Another trend in the ice cream and frozen dessert industry involved co-branding. The IDFA described co-branding as "partnering with successful branded companion products for increased product awareness" and most often involved creating new ice cream products that used ingredients from well-known candy or cookie manufacturers. For example, in late 2008, the Rocky Mountain Chocolate Factory and Cold Stone Creamery agreed to offer co-branded products in some of the latter's U.S. stores, and Baskin-Robbins sold popular co-branded flavors such as Oreo Cookies and Cream.

In 2009, regular ice accounted for 61 percent of the market, followed by lowfat/nonfat ice cream (25 percent), frozen yogurt (5 percent), and sherbet (4 percent). Specifically, the U.S. producers churned out 920 million pounds of regular ice cream, 381 million pounds of lowfat ice cream, 74 million pounds of frozen yogurt, and 53 million pounds of sherbet. Production of ice cream--both regular and lowfat--declined by about 1 percent from 2008, and production of sherbet and frozen yogurt experienced an 8 percent and a 5 percent drop, respectively. Not only had health-conscious Americans passed by frozen treats more often in 2009, due to a recessionary economy, they were also more often staying at home, eating in, watching their spending, and skipping the trip to the ice cream parlor.

In 2009, Mexico was the primary recipient of U.S. exports of ice cream, receiving nearly 13,000 tons in 2009, followed by Canada, which received over 3,100 tons. Besides Mexico and Canada, the Caribbean was the destination of the most U.S. produced ice cream, receiving over 4,000 tons in 2009. For example, the Bahamas brought in 923 tons and Trinidad & Tobago imported 705 tons, up from just 370 tons in 2008.

**Current industry conditions**

A 2012 report from Mintel highlighted several important trends in the ice cream manufacturing industry. Traditional health-related claims such as a statement that an ice cream product contained fewer calories, less sugar, or less fat continued to have the most resonance with consumers. As a result, manufacturers such as Unilever and Nestlé continued to update their products to match these demands. More recently introduced items such as ice cream products that did not contain gluten or did not contain dairy products at all have also seen increases in popularity, as some people have allergies to ingredients in traditional ice cream products.

While the United States trailed several other developed countries in per-capita spending for ice cream products, by overall consumption the nation led other countries by a wide margin.
Industry leaders

Unilever N.V.

A diversified, multinational consumer goods company with headquarters in Rotterdam in the Netherlands, Unilever manufactures ice cream under a variety of brand names for the U.S. market, such as Ben & Jerry's, Good Humor, and Breyer's Ice Cream. Unilever reports the results for its ice cream brands under its Refreshments segment; this segment posted 2013 revenue of 9.37 billion euros, which made up 19 percent of the manufacturer's total revenue for the year of 49.8 billion euros. Unilever pointed out particular strength in its Magnum ice cream, which it offers throughout the world; however, this chocolate-coated ice cream on a stick only arrived in the United States in 2011. The manufacturer also said that it stopped selling some low-margin ice cream products in the United States during 2013, which contributed to a decline in revenue for the segment. The refreshments segment posted revenue of 9.73 billion euros in 2012.

Nestlé S.A.

Nestlé also sells a wide variety of consumer goods throughout the world. Based in Vevey, Switzerland, this company has a domestic subsidiary named Nestlé USA. This manufacturer saw its total revenue rise from 89.7 billion Swiss francs in 2012 to 92.2 billion Swiss francs in 2013. Nestlé offers dairy products that include infant formula under its Nestlé segment; this segment reported revenue of 9.74 billion Swiss francs for the year, a decline from 11.8 billion Swiss francs in 2012. The Nestlé segment includes Wyeth Nutrition, an infant formula manufacturer which the company bought from Pfizer in 2012. The company also owns the Dreyer's brand, which sells ice cream and related products in the United States. The Dreyer's subsidiary owns some retail stores which it picked up when it acquired the Haagen-Dazs brand. Nestlé markets products to health-conscious shoppers in the United States through its Skinny Cow brand, and it also makes the chocolate-coated Drumstick ice cream cones. Nestlé reports the revenue from these products under its milk products and ice cream segment. This segment reported worldwide sales of 17.4 billion Swiss francs in 2013, a slight increase from 17.3 billion Swiss francs in 2012.

Blue Bell Creameries, founded in Brenham, Texas, in 1907, was one of the top three brands in the nation in 2014. Blue Bell products are sold in Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana, Mississippi, Missouri, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and Wyoming. In line with its reputation for high quality and high consumer satisfaction, Blue Bell continued to offer half-gallon containers (64 fluid ounces), bucking the industry trend to downsize containers to 48 ounces.

Further Readings


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