

## Sunflower Facts

The sunflower is a distinctive, flowering plant (*Helianthus annuus L.*), the seeds of which contain a valuable edible oil that contains more Vitamin E than any other vegetable oil. Most sunflower oil is used in food products. The seeds of confection varieties of sunflower are also sold for human consumption and birdseed.



### Industry Overview

U.S. sunflower oil crushers can deliver three types of sunflower oil, NuSun, Linoleic and High Oleic sunflower oil. NuSun® is a mid-range oleic, 65 percent (monounsaturated) sunflower oil. It needs no hydrogenation and has a 9 percent saturated fat level. NuSun® is extremely functional for frying applications and has a good balance of linoleic acid — an essential fatty acid that enhances the taste of products. Linoleic sunflower oil has about 69 percent polyunsaturated fat, 20 percent monounsaturated fat and 11 percent saturated fat. Linoleic sunflower oil is excellent cooking oil with a neutral taste. This enhances the taste of food rather than overpowering it. High Oleic sunflower oil has 80 percent or more oleic (monounsaturated) acid. This unique oil has many specialty applications.

The U.S. confection sunflower industry is divided into three segments according to seed size and separated into groups. Processors of confection sunflower seed sell the seeds based on seed size. The largest size will go into the in-shell market, meaning the seed stays intact. The medium-sized seeds are usually hulled for the kernel market. The smallest size will go into the bird and pet feeding market.

The sunflower industry continues to have adequate processing capacity to meet the demands of the domestic and international markets. The U.S. is recognized as having the highest quality of sunflower products. U.S. processors have developed technology that currently surpasses any other supplier in both volume capacity and quality control standards. Several of the domestic processing plants have gone through major renovations, having added processing facilities to meet specific consumer requirements in areas such as refining and packaging of sunflower oil and roasting and flavoring of confection products.

### Common Varieties

There are two types grown. The first is Oilseed. This small black seed is very high in oil content and is processed into sunflower oil and meal. It is also the seed of choice of most bird feeders. The second type is Non-oilseed (confectionery sunflower). This is a larger black and white striped seed used in a variety of food products from snacks to bread.

## Major Products

There are three types of sunflower oil available; Mid-Oleic Linoleic and High Oleic sunflower oil. All are developed with standard breeding techniques. They differ in oleic levels and each one offers unique properties. With three types of sunflower oil available, sunflower oil meets the needs of consumer and food manufacturers alike for a healthy and high performance non-transgenic vegetable oil.

Confection sunflower seeds are normally black with white stripes and provide consumers with in-shell seeds and kernel. In-shell means the seed is left intact with the "meat" of the seed still in the shell. It is normally roasted and seasoned. It is eaten as a snack by cracking the shell with one's teeth, discarding the hull and eating the delicious morsel within. 'Chew and spit' is a great American pastime, especially at baseball games and other outdoor events. Kernel means the processor has mechanically removed the hull. The resulting kernel is now in a convenient form to be sold raw or roasted for snacking or as an ingredient.

## Processes Used

Confection sunflower seed is processed according to these steps:

- Seed preparation and cleaning
- Grading the seeds into large, medium and small sizes
- Seeds to be marketed as in-shell are bagged
- Seeds to be sold as kernel are hulled and then bagged
- Storage

Oil-type sunflower seed is normally processed according to these steps:

- Seed Preparation and cleaning
- Dehulling
- Physical pressing of the sunflower seed with subsequent hexane extraction of the remaining oil in the meal
- Degumming
- Refining
- Bleaching
- Dewaxing
- Deodorization
- Storage

Some smaller plants are only press-plants and do not apply the step of hexane extraction. This results in higher oil content in the meal.

## Major Companies

Archer Daniels Midland  
Cargill Oilseed Processing  
Colorado Mills, LLC  
CHS Inc.  
Dahlgren and Company Inc.  
Hi-Pro Sunflowers  
High Plains Oil Seed, LTD.  
Humko Oil Products  
Red River Commodities Inc.  
SunOpta Sunflower

## Market Trends

Over the past five years between 34 to 56 percent of U.S. sunflower oil production was exported and of this 80 to 90 percent of sunflower oil exports were shipped as crude oil. This

trend changed in the 2002/03 marketing year as domestic sales of NuSun® sunflower oil overtook exports. Also, refined sunflower oil sales represented the majority of sales versus crude sunflower oil. The percentage of sales shipped as refined oil has continued to increase and hit 80 percent of total sales in the 2004/05 marketing year and is expected to stay at this level in future years. With strong domestic demand for NuSun sunflower oil, exports are expected to be in the area of 25-30 percent of total U.S. sunflower oil production through 2010.

U.S. exports of confection sunflower products have represented 54 to 62 percent of U.S. confection sunflower seed production. The U.S. confection sunflower industry expects domestic and export markets to continue growing as U.S. supply continues to be sufficient to meet market needs. The export market has grown much faster than the domestic market and this should continue to accelerate in the future. It is expected that these trends will continue through 2010