

The Pioneer IndustrySelectSM Products Difference...

Product characterization... *We know our products and their end use functionality. Pioneer has the most extensive food corn product characterization effort in the industry.*

Product yield and agronomic performance... *Because Pioneer® brand seed products are performance leaders, growers are more likely to participate in origination programs.*

Market footprint... *Pioneer products are widely produced, making it easier to source large volumes of grain with consistent quality.*

Seed Distribution Traceability... *Pioneer's unique seed distribution network facilitates tracking of grain availability and quality control.*

Grower relationships... *Pioneer's tradition of service and strong grower relationships allows us to efficiently link end use customer needs with quality oriented growers.*

Research commitment... *With the most aggressive end use product development research engine in the industry, you can be sure that Pioneer is committed to providing seed products that growers want to plant, and grain that end users value.*



At Pioneer, our continuing challenge is to provide seed products that growers want to plant, which yield the type of grain food corn processors find of value. For additional information regarding yellow and white food-grade hybrids, contact your local Pioneer sales professional or Morrie Bryant, Business Manager, Food Corn.

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Websites:
North American Millers Association
www.namamillers.org

Tortilla Industry Association
www.tortilla-info.com

American Association of Cereal Chemists
www.aaccnet.org

American Institute of Baking
www.aibonline.org



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TECHNOLOGY THAT YIELDS. *Food-Grade Corn*



PIONEER® brand Food-Grade White & Yellow Corn Hybrids

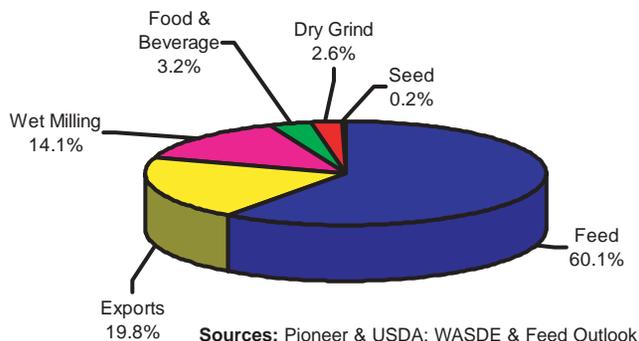
Food Corn Processing Information



Linking the Seed to the End-Use NeedSM

FOOD CORN INDUSTRY OVERVIEW

Approximately 3% of the annual U.S. corn production is used for human food consumption. Food-grade corn may be white or yellow. In either case, food corn grown in North America is a dent-type corn that possesses a higher proportion of hard, vitreous starch.



FOOD CORN FACTS

- Pioneer began developing superior white corn hybrids over fifty years ago. Today, Pioneer continues this commitment by maintaining three separate white corn breeding programs in North America.
- Food-grade corn is hard textured and the kernels have a higher density than other corn...thus test weights are often elevated.
- Biotech herbicide-resistant and insect-resistant traits are not currently used in white corn seed products from Pioneer. However, these traits may play a more important role in the future because of their positive effect on grain quality and yield per acre. These biotech traits are available in many yellow food-grade corn seed products.

- The term “hard endo” simply refers to corn with a hard endosperm, or corn of harder texture. This term is often used in reference to yellow food corn (YFC) and is commonly used by specialty grain handlers.
- All Pioneer® brand food-grade corn hybrids are *characterized* for such traits as kernel density, composition, size, and ear rot diseases (Fusarium, Gibberella, Diplodia).



THE U.S. FOOD CORN MARKET IS COMPOSED OF THREE SEGMENTS:

1. Dry Milling...is a form of value-added processing that fractionates corn mechanically, producing grits, meal, and flour. Popular foods such as breakfast cereals, baking mixes, and extruded snacks are made from dry milled corn.



2. Alkaline Cooking...is the ancient process that transforms corn into dough, generally referred to as *masa*. Corn tortillas, tacos, and corn chip snacks are all products of alkaline cooking.



3. Specialty Grain Handlers...distribute white and yellow food-grade corn to both domestic and export markets.

WHAT FOOD CORN PROCESSORS WANT

- Corn with a higher percentage of hard (horneous) endosperm
- Higher test weight corn
- Minimal dent in the crown of kernels
- Low levels of broken kernels and foreign material (BCFM)
- Low temperature dried corn
- Kernels free of stress cracks
- Low levels of mycotoxins
- Kernels of uniform size
- Corn with a clean yellow or pearly white color
- Appropriate taste and texture (mouth feel) when processed



Food corn market opportunities can be both worthwhile and rewarding. However, it is imperative that growers fully understand the expectations of a particular market prior to engaging in it. There are special considerations associated with producing food-grade corn that growers should be prepared to manage. Careful and proper harvesting, drying, handling, and storage of grain is necessary to ensure full grower premiums or incentives are received. Pioneer does offer growers information and expertise to help them fulfill these market demands.

