What's the Bottom Line?

Some grain companies and processors are offering incentives to growers who qualify under their HES contracting programs. For additional information on wet milling and these opportunities contact your local Pioneer sales professional or Tim Tierney, Business Manager, Wet Milling.

Tel: 515.334.7030
E-mail: Tim.Tierney@pioneer.com

Websites:
Corn Refiners Association
http://www.corn.org

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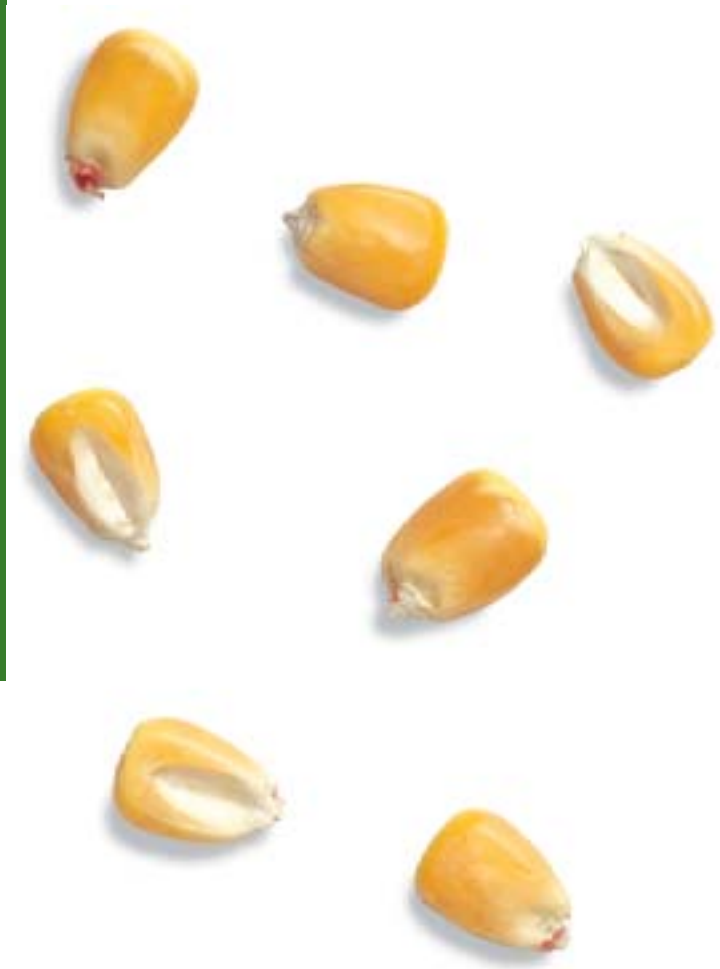

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2003/2004 SL11733

TECHNOLOGY THAT YIELDS. starch

Pioneer High Extractable Starch (HES) & Waxy Corn

Corn Wet Milling Information

PIONEER Industry Select SM PROGRAM

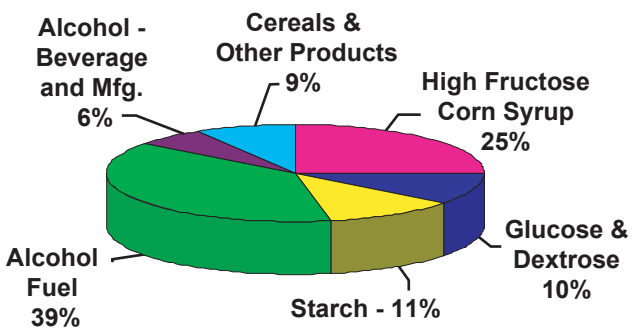
Linking the Seed to the End-Use Need

WET MILLING INDUSTRY OVERVIEW

The wet milling industry, also known as the "corn refining industry" began over 150 years ago with the production of starch for the laundry business. The industry grew rapidly as new products such as corn sweeteners, corn oil and corn gluten feed were developed. Today, new product development and technical innovation are still driving industry growth.

Figure 2. 2002/03 U.S. Corn Food and Industrial Uses

(Source: USDA, ERS, Feed Outlook, August 2002).

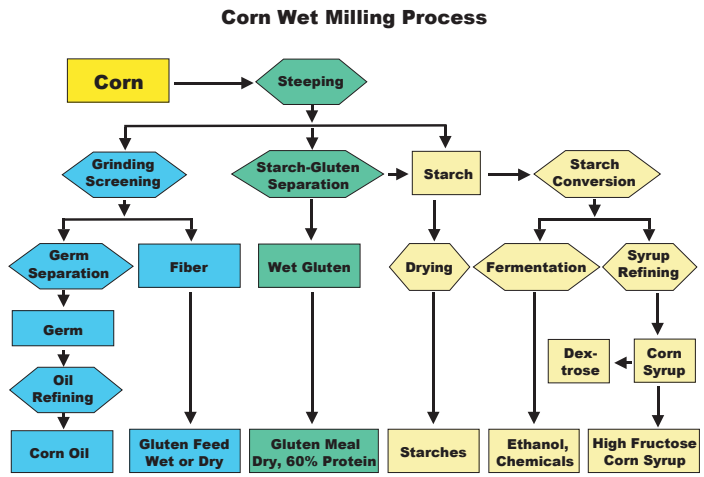


WET MILLING FACTS

- It is one of the largest uses of US corn....2.4 billion bushels, 17 million acres
- This process uses both *chemical* and *physical* methods of separating the components of the corn kernel.
- Extractable starch is the key measure of corn value, not just total starch.
- Waxy corn offers unique starch characteristics that are valued by food manufacturers and industrial users.

WET MILLING PROCESS:

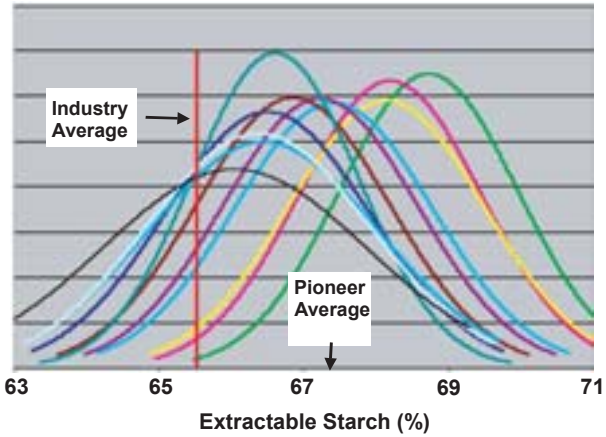
Wet milling is the process of separating the corn kernel into starch, protein (gluten), germ and fiber in a watery medium.



PIONEER AND WET MILLING:

- Pioneer began screening hybrids for starch traits over 10 years ago, targeting waxy and conventional starch markets.
- Pioneer end use experts work with wet millers to determine their needs.
- Based on several years of research, Pioneer has helped developed a Near Infra-Red (NIR) tool that measures the extractability of starch, allowing Pioneer to identify those Pioneer® brand hybrids having the highest levels as **HES** (high extractable starch) hybrids.
- The HES designation is assigned to elite Pioneer brand hybrids based on data from over 80,000 Pioneer plot samples over the past five years.
- Pioneer is conducting large-scale commercial trials with corn wet millers to further document the value of HES.

Research emphasis on the HES trait, rather than total starch, has been key to optimizing wet milling starch yields with Pioneer brand hybrids. Hybrids do vary. Pioneer brand hybrids designated as HES products target a 2% advantage over the industry average for extractable starch.



Desirable corn grain characteristics for wet milling:

- Above average level of extractable starch
- Low levels of damage and molds/diseases
- Low levels of broken kernels
- Low foreign material
- Low temperature dried corn

FUTURE DEVELOPMENTS:

Pioneer...working to add value for growers and the corn wet milling industry

- Pioneer has the most aggressive wet milling hybrid breeding program in the industry to combine high yields / agronomics with the processing traits wet millers demand.
- Pioneer is investing in longer term trait concepts for the wet milling industry.
- Pioneer is working with U.S. wet millers and international customers to develop new markets for HES grain.