

What's the Bottom Line?

No matter what size your feeding operation, Pioneer designated HAE products are right for you. For additional information on High Available Energy Pioneer Hybrids contact your local Pioneer sales professional or

Pioneer Global Nutritional Sciences Team
Tel: 515.334.6645



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2003/2004 SL11734

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Pioneer High Available Energy (HAE)

Livestock & Poultry Information



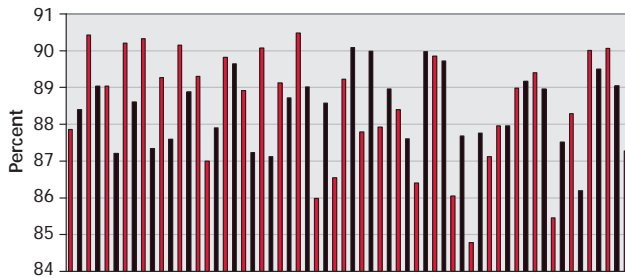
Linking the Seed to the End-Use Need

PIONEER CORN HYBRIDS DELIVER MORE AVAILABLE ENERGY

Today, more than 70 percent of the U.S. total annual corn grain is consumed by livestock feeding. As the world's leading supplier of hybrid seed corn, Pioneer Hi-Bred International, Inc., understands the available energy content of corn grain is key to efficient animal production. **Available Energy** is the amount of energy in corn an animal can extract for productive uses.

Since 1981, Pioneer's team of livestock nutritionists and researchers has evaluated corn grain to determine nutritional differences between hybrids that are important for optimizing their use in animal rations.

As the graph below indicates, energy digestibility co-efficients of hybrids are not equal.



Energy Digestibility of #2 Yellow Corn Hybrids

With this in mind, Pioneer researchers target improvements in energy availability of hybrids to help meet the needs of the pork and poultry industries. The result is Pioneer® brand products identified as **High Available Energy (HAE)**.

Pioneer has created two distinct energy categories by applying the HAE designation only to hybrids that have above average digestible energy values (1802 kcal/lb on a 100% dry basis; NRC, 1998).

These corn hybrids provide higher concentrations of digestible energy (DE) to add value to rations used in pork and poultry feeding.

EXTENSIVE PIONEER RESEARCH DATA BACKS PIONEER HAE IDENTIFIED HYBRIDS

Digestible Energy content of grain produced from Pioneer brand hybrids is determined using whole grain samples and a Near Infrared Transmittance (NIRT) calibration developed by Pioneer scientists during three years of research. This NIRT calibration was developed, and will be maintained and improved, using reference data generated from unique hybrid grain samples grown in isolated plots and precision fed to pigs in our metabolism facility located at the **Pioneer Livestock Nutrition Center**. Currently Pioneer has utilized more than 280 diverse and unique grain samples to formulate this initial calibration.



Pioneer uses this NIRT analysis to characterize commercial hybrids for digestible energy. To date, more than 10,000 individual hybrid samples from Pioneer's extensive system of corn testing plots across the Corn Belt have been analyzed. Pioneer's investment in personnel and in laboratory and feeding facilities, positions Pioneer as a world-class leader in energy determination capability and produced first-of-its-kind technology that directly predicts DE on whole grain samples.

HAE HYBRIDS FROM PIONEER PROVIDE VALUE

HAE hybrids fit the number one goal of livestock producers: to most efficiently transform grain energy into meat. Studies show pork and poultry producers benefit because animals are able to extract more digestible energy per acre from each unit of Pioneer HAE corn. HAE hybrids from Pioneer deliver:

- Higher digestible energy per pound of grain
- Improved grain consistency and quality
- More accurate and precise feed formulation
- Less waste output due to increased digestibility
- The industry-leading yield performance of Pioneer® brand hybrids.



PIONEER® BRAND HYBRIDS FOR HIGH AVAILABLE ENERGY

- High Available Energy (HAE) corn from Pioneer offer pork or poultry producer's grain with above average digestible energy in high-yielding hybrids
- The HAE designation is assigned to Pioneer® brand hybrids based on data from extensive feeding trials and proprietary analytical technology
- To qualify, a Pioneer hybrid must possess superior energy digestibility
- Every producer's needs are different. Your local Pioneer sales professional can suggest a package of HAE hybrids that can help deliver increased energy value for your feeding operation.

