

What are Distillers Grains?

DDGS is the dried residue remaining after the starch portion of the grain is fermented in the ethanol production process with selected yeasts and enzymes to produce ethanol and carbon dioxide.

The remaining grain nutrients are protein, fiber and oil. After the complete fermentation, the alcohol is removed by distillation and the remaining fermentation residues are dried.

DDGS is an excellent digestible protein and energy source for beef cattle. It is rich in cereal and residual yeast protein, minerals and vitamins. DDGS can comprise 20-30% of the ration dry matter (DM) basis.

Recommended feeding levels of DDGS for beef cattle are: creep feeding – up to 20%, feedlot cattle – up to 40%, receiving/starting cattle – up to 20% and brood cows – up to 35% of supplement.

Currently, dry mill ethanol plants produce 3.8 million metric tons of DDGS annually. Industry experts expect this number to hit 5.5 million metric tons by the end of 2005.

Kansas Ethanol Plants

MGP
1300 Main
Atchison, KS 66002
913-367-1480

Reeve Agri-Energy
PO Box 1036
Garden City, KS 67849
620-275-0234

US Energy Partners
1224 E. 15th
Russell, Kansas 67665
785-483-1007

East Kansas Agri Energy (beginning production mid-2005)
Garnett, KS
785-448-2888

Abengoa Bio-Energy
412 N. 1st St.
Colwich, KS
316-796-1234

ESE Alcohol
P.O. Box 813
Leoti, KS 67861
620-375-4904

Western Plains Energy, LLC
3022 County Rd 18
Oakley, KS 67748
785-754-2119

Additional Information:

Kansas Corn Commission
Kansas Grain Sorghum Commission
www.ksgrains.com
1-800-489-2676

University of Minnesota
www.ddgs.umn.edu
National Corn Growers Association
www.ncga.com
Distillers Grains Technology Council
www.distillersgrains.org

This brochure was sponsored by the following:



Distillers Grains Can Increase Your Profits!



Beef Cattle

Distillers grains are excellent feed resources for feedlot cattle. They are normally available for use in feedlot finishing rations in two forms, dried and wet distillers grains.

In general, there are two nutritional philosophies regarding their use in feedlot finishing rations. Distillers grains can be fed at 6 to 15% of the ration dry matter, serving primarily as a source of supplemental protein. When fed at higher levels (greater than 15% of the ration dry matter), the distillers grains' primary role is a source of energy replacing corn grain.

Other than dry matter content (wet distillers, 35-45%; dried distillers, 90-95%), the chemical composition of the two distillers byproducts is similar.

Distillers grains contain 10-15% fat (oil), 40-45% neutral detergent fiber, 30-35% crude protein and 5% ash (NRC, 1996).

Unique Benefits of Utilizing Distillers Grains

- Originates from grains; corn, grain sorghum, wheat, rye and barley malt.
- Distillery process concentrates grain protein 300% and fat 230%
- 55% of protein is by-pass for increased utilization
- Yeast fermentation in distillery process adds dried yeast cells high in B-meal vitamins
- High methionine content provides partial replacement for deficient soybean meal
- Economical cost - 1/2 cost of soybean meal
- Excellent palatability due to yeast fermentation flavors
- Provides higher feed efficiency on high urea rations

Typical Dried Distillers Grains Analysis

| Nutrient | DM | As Fed |
|----------------|--------|--------|
| Dry Matter% | 100.00 | 89.00 |
| Crude Protein% | 30.71 | 27.30 |
| TDN (%) | 77.83 | 69.19 |
| NEL (mcal/cwt) | 81.02 | 72.02 |
| NEM (mcal/cwt) | 87.88 | 75.46 |
| NEG (mcal/cwt) | 55.83 | 72.02 |
| NFC (%) | 18.06 | 16.05 |
| ADF (%) | 15.62 | 13.88 |
| NDF (%) | 33.25 | 29.56 |
| Fat (%) | 13.39 | 11.90 |
| Calcium | 0.06 | 0.05 |
| Phosphorus | 0.94 | 0.83 |

What's New?

Industry continues to improve the shelf life of wet distillers grains. There are several avenues for preservation to include liquid blended applications to silage style bags. Extending the shelf life of wet distillers grains will help lower the production cost for an ethanol plant, and decrease the feeding costs of producers.

One company has created "lick barrels" from distillers grains. These convenient tubs contain 20—30% protein, and provide several other key nutrients for cattle and other livestock. There is no special equipment needed, just drop it off.

Another company has created range cubes for use in daily cattle operations.

