

ETHANOL FEEDS

FEEDING DISTILLERS GRAINS TO BEEF CATTLE



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Iowa State University Extension

Using Distillers Grains in Beef Cow Rations

By Daryl Strohhahn

Questions continue to be asked at producer meetings concerning rations for beef cows involving the use of distillers grains. As mentioned in the December, 2006 newsletter the common one being asked was how much can or should I feed. Let's be clear there are a number of factors which should be considered in answering this question. Let's review those.

First, what stage of production is the cow in-- , mid or late pregnancy or the beginning of nursing a calf? The difference in energy needs between these three stages is substantial. For instance, cows nursing a calf will need 50% more megacalories of Net Energy for maintenance than a cow in the middle of pregnancy.

Second, what feeds are being fed along with the distillers grains? Recently at a meeting one producer asked about supplementing a corn stover based ration versus another producer wanting to supplement a limit fed mixed corn silage and ground hay ration. These are two completely different situations.

A third consideration that was covered in the December, 2006 newsletter was the difference in distillers grains moisture levels. Don't forget dry distillers only contain about 10% moisture while wet distillers grains typically contain 60 to 70% moisture. The table included in this article shows how to adjust distillers feeding rate for moisture.

So let's look at four different rations and see how much dried distillers it takes for wintering a 1350 lb late pregnancy cow. First, a ration using poor quality brome hay, 10% crude protein and 52% TDN. You will find that meeting protein needs is not a big problem with this ration, but we need about 4.5 lbs daily of dried distillers grains for energy. This ration contains almost 50% more protein than is needed. As we move into lactation this ration would need 10 lbs of dried distillers grains.

Convert DDG dry matter intake to As Fed with Varying Moisture Levels

DDG Moisture Content	Amount of Distillers Grains Dry Matter being Fed			
	3	6	9	12
10%	3.3	6.7	10.0	13.3
40%	5.0	10.0	15.0	20.0
50%	6.0	12.0	18.0	24.0
60%	7.5	15.0	22.5	30.0
70%	10.0	20.0	30.0	40.0

A second ration asked about is supplementing harvested corn stalks. For the 1350 late pregnant cow it would take 5.5 lbs of dried distillers grains and all the corn stalks the cow will eat. This ration would need some Calcium supplementation from the mineral program, but no Phosphorus will be necessary. To move this up to a ration for nursing cows will require about 12 lbs of dried distillers grain daily. A caution here. IF the distillers grains are over .75% Sulfur this ration may be too high in total Sulfur intake.

A third ration combination is stretching hay with both harvested corn stalks and distillers grains and limiting intake. For instance, a 2 part corn stalks to 1 part good quality hay on a limited basis and supplemented with 3 to 3.5 lbs of dried distillers grains works well for a late pregnancy cow. To move this into a lactation situation one will need to feed 15 lbs of dried distillers grains. Again, take note of the Sulfur issue here.

Finally, a number of producers are looking at limit feeding corn silage mixed with ground corn stalks or poor quality hay. Again, for a 1350 lb late gestating cow an example would be 40 lbs of corn silage, 15 lbs of ground corn stalks and 3.5 lbs of dried distillers grains. To make this work for early lactation the ration would need 10 lbs of dried distillers grains. Keep in mind both silage and stalks are low in Calcium and would need some help in that area, plus vitamins and trace minerals.

In summary, keep in mind the amount of distillers grains needed varies according to forages fed and be sure to adjust for moisture content of the distillers that you purchase.

“Establishing Economic Value of Distillers Grains for Beef Cows”

by Daryl Strohbehn

In Iowa most of the hays that we feed are sufficiently high in protein to meet cow herd needs, but many will be insufficient in energy content. Therefore, most cow-calf producers should look at the cost of distillers grains from an energy perspective, which is likely much different than the way a feedlot might look at the product.

Historically, Iowa's most competitive source of feed energy readily available on the farm is CORN. However, many producers do not like to feed corn and would rather price distillers grains against their old standby, hay.

To do these price comparisons one needs to take into account moisture differences in the products, energy density, transportation costs to the farm and finally any differences in storage and feeding losses. Keep in mind that moisture, energy and protein levels can vary immensely in these products resulting in large fluctuations of cost per unit of nutrient.

Rather than accepting average table value results as the final answer you should know how to determine the nutrient value on your own. The place to start is evaluating the feeds on a relative nutrient content basis. Be sure to evaluate at the same moisture content, thus convert everything to a 100% dry matter basis. Let's show an example.

Compare wet distillers grains to purchased hay for energy:

Wet distillers grains: 35% dry matter, \$55/ton delivered to your farm, 110% TDN and 10% storage and feeding loss:

Step 1: Pounds lost due storage and feeding = 2000 lbs - 10% of 2000 lbs = 2000 x 10% of 2000 (200 lbs) = 1800 lbs remaining
 Step 2: Pounds of dry matter in remaining distillers grains = 1800 lbs x 35% dry matter = 630 lbs of dry matter
 Step 3: Pounds of TDN in remaining distillers grains = 630 lbs x 110% TDN = 693 lbs of TDN
 Step 4: Cost per pound of TDN = \$55.00 / 693 lbs = \$.0794 / lb of TDN

Purchased hay: 85% dry matter, \$80/ton delivered to your farm, 58% TDN and 15% feeding loss

Step 1: Pounds lost due storage and feeding = 2000 lbs - 15% of 2000 lbs = 2000 x 15% of 2000 (300 lbs) = 1700 lbs remaining
 Step 2: Pounds of dry matter in remaining hay = 1700 lbs x 85% dry matter = 1445 lbs of dry matter
 Step 3: Pounds of TDN in remaining hay = 1445 lbs x 58% TDN = 838 lbs of TDN
 Step 4: Cost per pound of TDN = \$80 / 838 lbs = \$.0954 / lb of TDN

This method works very well when protein sources are assumed to be equally utilized, but does not work well if this is not the case.

Updates and Links

The Iowa Renewable Fuels Association has updated their quarterly survey on feed analysis of distillers' feeds from Iowa plants. The survey is in the form of a downloadable spreadsheet and was conducted in March 2007. The website is <http://www.iowarfa.org/>. Also on their site is presentations from a Distillers' Grains Workshop held in March.

If you are not already aware the USDA Market News publishes prices of wet and dry distillers' feeds. This website will give you current regional prices of wet, dry and modified distillers' grains. The address for this website is: http://www.ams.usda.gov/mnreports/nw_gr111.txt

For suggestions, comments, questions or to get on the mailing list please contact us at beefcenter@iastate.edu or give us a call at 515-294-BEEF.



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