

# ETHANOL FEEDS

FEEDING DISTILLERS GRAINS TO BEEF CATTLE



December, 2006

## Iowa State University Extension Do Distillers Grains Effect

### Beef Quality?

By Dan Loy

Recently Certified Angus Beef commissioned a white paper to evaluate factors affecting beef quality. This study was conducted to review factors that may be involved in a recent decline nationally in beef quality grades. A number of factors were identified including cattle health, feedlot size, steam flaking of corn and implant programs. Increased use of corn co-product feeds were mentioned also. An analysis of experiments using distillers grains (DG) showed that feeding greater than 30% decreased marbling by about 1/3 of a marbling score. While the magnitude of the marbling effect of DG feeding on marbling was small, this review set off a fire storm of re-analysis of existing data on the effect of DG on marbling.

Most experiments conducted to date with distillers feeds were designed to measure the nutritional value of the product. So cattle were fed to constant days on feed rather than a constant endpoint. The result is that few individual experiments show negative carcass effects. To get at the bottom of this issue requires analysis of multiple experiments or studies designed to evaluate carcass effects. Recently, Dr. Allen Trenkle of ISU summarized 4 ISU studies where cattle were fed up

## Distillers Grains: Cow-Calf Considerations

By Daryl Strohhenn

Interest and questions abound on the use of ethanol co-products (DG) in beef cow rations with the most common one being, "How much do I feed and are there any problems with this feedstuff?"

First question: how much do I feed? This is dependent upon other feedstuffs being used in the ration and what

### UPCOMING MEETINGS ON DISTILLERS GRAINS

Des Moines (ICA Convention)	Dec. 7th
Indianola, Clarion	Dec. 11th
Nashua	Dec. 13th
Creston	Dec. 20th
Boone	Jan. 10th
Lewis and Bethany MO (4-State Beef Conf)	Jan. 11th
Sioux Center	Jan. 17th
Washington	Jan. 18th
Iowa Falls	Jan. 20th

to 40% DG. There was some reduction in marbling at the high levels, but the net value of the carcasses in a typical grid market was not greatly different. Taste panel analysis of tenderness, juiciness and flavor was not changed. Interestingly, corn gluten feed did not change marbling scores when fed up to 90% of the ration, suggesting that perhaps the fat content of the DG may be the culprit in the marbling effect.

Another recent analysis was a review by Dr. Fred Owens of 29 experiments where DG were fed. Dr. Owens found a decline in marbling with DG feeding but not until the level reached approximately 50% of the ration dry matter. He found no effect on marbling when he analyzed just those studies where wet DG were fed. The bottom line: DG may decrease marbling at very high levels. However, the effect is not large enough to cause great decreases in carcass value. Efforts to decrease the fat content of DG may actually help reduce this effect.

co-product is under consideration. DGs come in many forms and varying moisture contents. A good Beef Center overview publication is IBC18, "Ethanol Co-Products for Cattle".

<http://www.extension.iastate.edu/Publications/IBC18.pdf> For instance, DGs range in dry matter from 30% dry matter (70% moisture) to 90%. Therefore, amount fed varies due to moisture content.

Crude protein in DGs run about 30% (+/- 4%) on a dry matter basis. From an energy standpoint DGs are from 90 to 100% TDN, in other words, as good as or better than dry corn. This added energy punch comes from the fat content. While this can be advantageous in rations with amounts less than 20–30% (on a dry matter basis), higher levels may be detrimental. At this point in time research has not covered the full range in feeding levels.

Simple rations can be formulated using DGs. With harvested cornstalks as the base roughage it takes about 5 lbs of DG dry matter to meet energy and protein needs of a mature late pregnancy British type cow in the winter time. Young females need more. When feeding a wet DG with 35% dry matter one would offer 14–15 lbs daily, while 10 lbs daily would be needed if feeding a 50% dry matter product.

In a second situation when stretching high quality mixed legume–grass hay with cornstalks and DG, it took only 2.5 to 3 lbs of DG dry matter. This would require daily DG intakes of 8 lbs with wet DG or 5 lbs of a 50% dry matter product.

**IMPORTANT TO REALIZE:** amount of DG to feed is not the same for all the different Iowa roughages. That's why you find ISU beef specialists using BRANDS, the ration balancing software from the Iowa Beef Center. Other considerations are mineral related. DGs are

## Nutrient Profiles of Iowa Ethanol Feeds

The Iowa Renewable Fuels Association has surveyed member plants on typical nutrient content of their feed coproducts. They also list contact information for plant personnel. To access this info point your web browser to: <http://www.iowarfa.org/> Also at this site look for presentations and information on manure management with distillers grains rations.

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variable in phosphorus (P) and sulfur(S). These two minerals can be problematic if DGs are fed at high levels. With lower levels like described in the prior paragraphs mineral balancing problems should not be experienced. But the producer should know that DGs can run up to 1% P and S, with occasional analysis higher. This means feeding DG can easily meet the P requirements of beef cows, thus the mineral supplement program should not add to it. Most feed companies are offering co-product type mineral balancers which basically have little to no P and get the job done in the calcium and trace mineral areas.

Finally, understand that wet DGs tend to go out of condition during storage, especially when outside temperatures are above freezing. Many growths are developing on the DG piles and that is currently under study. As results are uncovered in this area information will be forthcoming.

## Tell Us What You Think

This newsletter is the first of a series on feeding Ethanol Feeds. For suggestions, comments, questions or to get on the mailing list please contact us at [beefcenter@iastate.edu](mailto:beefcenter@iastate.edu) or give us a call at 515-294-BEEF. The next issue will be in January 2007 and will cover feeding levels, the sulfur issue and an update of meetings on the topic around Iowa. For more information on the meetings listed on page 1, contact your county extension office or go to the Iowa Beef Center website at: <http://www.iowabeefcenter.org>