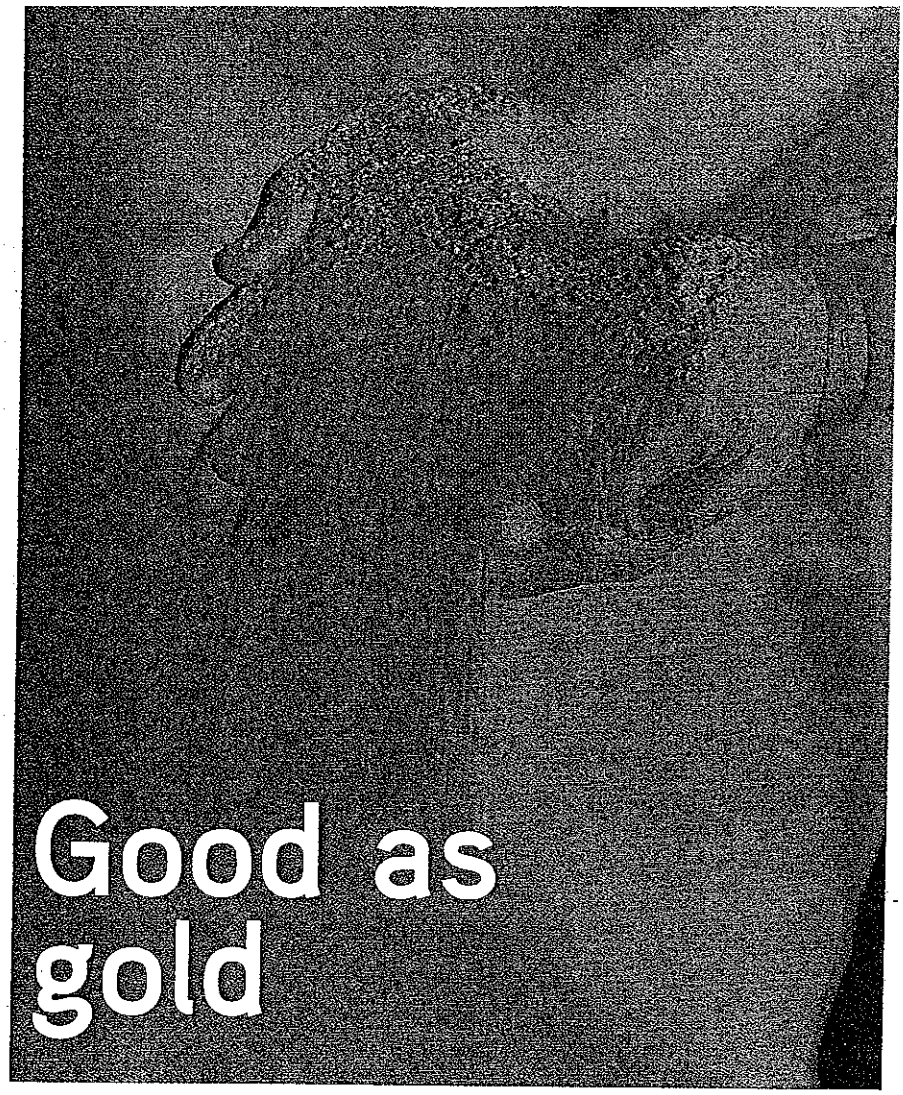

Photograph: David Lundquist - CHS

Good as gold

Distillers' grain is finding a profitable home in cattle feedlot rations.

BEEF INSIDER

Expert says the best feed value comes from feeding wet DG at 30% to 40% levels

By Gene Johnston, Managing Editor

Distillers' grain isn't just gold in color. It's also becoming highly valuable as a corn substitute in cattle feeds, especially feedlot rations.

A mountain of distillers' grain (DG) is piling up in the Ethanol Belt. For every 120 bushels of corn distilled into ethanol, a ton of dry DG is left behind. There could be 25 million tons produced this year – and more next year. Given its high energy and protein content, along with its palatability to ruminants, its best use is for beef cattle feed.

Successful Farming magazine asked Galen Erickson, a beef nutrition researcher at the University of Nebraska, for his advice for using DG in cattle rations. He has participated in dozens of DG research projects over the last several years.

THE COST FACTOR

Successful Farming: What's the first step in deciding if DG can replace corn in a feedlot ration?

Erickson: Be sure the DG is priced competitively, calculated on a dry matter basis or comparable basis to corn.

For instance, if corn is $3.40 a bushel and 15% moisture (85% dry matter), that calculates to $142.86 per ton. If wet DG is $40 a ton and 35% dry matter, that calculates to $114.29 per ton dry matter. In that case, DG would be an excellent buy.

For dry DG, use the same approach. However, since dry DG is probably similar to dry corn in moisture content, comparing prices without converting to dry matter is probably close enough to tell you if the DG should be considered.

I don't like to tell a beef producer what is a competitive price. We created a calculator model at our Web site [beef.unl.edu] where producers can put in their price for DG at the plant, their corn price, and calculate whether they would make more money by feeding various types and levels of DG.

[See an example of what the Nebraska calculator can show you on the following page.]

I will say that, in general, if you can buy the wet or dry DG at or below the price of corn on a dry matter basis, it's a good buy.

WET WORKS BEST

SF: What level of DG in feedlot rations give the best performance?

Erickson: If you determine the DG is economical, you can maximize wet DG at 40% of the diet on a dry matter basis and dry DG at 20%. The wet product results in better performance, and greater amounts can be fed.

There are some different theo-

WHAT'S THE VALUE IN FEEDING CORN PROCESSING BY-PRODUCT?

	CONTROL	DRIED DISTILLERS' GRAINS		WET DISTILLERS' GRAINS		SWEET BRAN	
BY-PRODUCT	CORN ONLY	20%	30%	30%	40%	30%	50%
Feed/lb. of gain	6.5 lbs.	6.14 lbs.	6.14 lbs.	5.79 lbs.	5.77 lbs.	6.20 lbs.	6.02 lbs.
Average daily gain	3.69 lbs.	3.98 lbs.	3.97 lbs.	4.32 lbs.	4.23 lbs.	3.98 lbs.	4.17 lbs.
By-product hauling cost/head (60M)	$0	$2.81	$4.22	$10.00	$13.26	$16.97	$10.11
Crude protein	13.5%	13.8%	16.1%	16.1%	18.4%	13.7%	16.7%
Ration cost $/ton	$153.41	$151.34	$151.22	$154.94	$156.00	$152.37	$152.90
Total feeding cost/head	$358.08	$335.34	$335.08	$326.18	$328.94	$341.64	$333.72
Profit	$20.73	$46.00	$46.20	$57.44	$54.92	$39.59	$48.93
Advantage of by-product		$25.27	$25.48	$36.71	$33.40	$18.86	$28.20

This run of the DG CattleCODE calculator at the Nebraska beef site (beef.unl.edu/byproducts) values dry corn at $3.70 a bushel and alternative DG products at 95% of that. It factors in higher transportation costs for wet DG. You can change the ingredients and prices to match your actual conditions. Performance and returns can be predicted for various levels and types of alternative ingredients.

ries about why that is true, and it's always been a little puzzling. With the dry product, especially at levels above 20% of the diet, it is a bit of a challenge to get it mixed and stay mixed in the bunks. But that doesn't explain all of the performance difference. We believe something changes when distillers' are dried so that the animal doesn't get as much energy. The protein is unaffected by drying, so it's all about the energy level.

SF: If you use DG to replace some corn in a ration, what is the best system for processing the corn?

Erickson: I would use either high-moisture corn or dry rolled corn with the DG. It does not appear to work as well in steam-flaked corn diets. We have some theories as to why this is true that we are testing here in Nebraska, and they are looking at it in other states as well.

HOW TO STORE WET DG

SF: Storage of the wet DG is an issue, as it will spoil after a few days, especially in hot weather. Are there solutions to this?

Erickson: It's true, wet DG may spoil if it's not fed within a week or so. We're experimenting with mixing it with other bulky materials that may lengthen storage time. We've tried wheat straw, cornstalks, and grass hay.

I recommend 25% wheat straw or cornstalks on a dry matter basis to be mixed with the wet DG. If you use a forage that is lower in fiber, you will need more. For example, with grass hay, you may need to start with 35% hay. A good barometer for whether the bulky material works in a bunker is simply if you can drive on it without getting stuck.

You can also store wet DG in a silo bag, and that requires less bulky material than bunkers. For bagging, you only need 15% to 20% cornstalks or straw or grass hay. Wet DG will actually bag without any forage, but you cannot put much pressure on the bag.

Some producers just pile the wet DG on the ground, cover the pile, and seem to get along fine. But I feel that it is a bit risky.

SULFUR PROBLEMS

SF: What are some other worries about feeding higher levels of DG to feedlot cattle?

Erickson: The DG diets will be higher in protein and phosphorus. The phosphorus may require changes in manure management plans.

If you are feeding 35% or more DG, this can lead to excess sulfur in the diet, too. This could be a toxicity issue, especially if the water that animals are drinking is high in sulfates. Have your water checked, and if you are feeding high levels of DG, watch for a condition of sulfur-induced polio. It happens sporadically, usually during periods of some other stress such as a grain-adaptation period.

We recommend feeding 150 mg to 200 mg of thiamine per animal daily to help control the problem of excess sulfur. If there is a case of polio, giving thiamine intravenously sometimes reverses the symptoms. I don't think we know enough about sulfur-induced polio yet, and we need to learn more. ■

learn more

beef.unl.edu/byproducts