

# Distillers' Decisions

Feeding ethanol coproducts is an easy sell in Illinois.

by Barb Baylor Anderson



**H**igh corn prices and the availability of compatible ethanol coproducts for use as feed was an easy sell for Hadley Farms Inc., Cambridge, Ill. Al Lyman says the Angus-based finishing program had been using corn gluten feed (CGF) since the early 1980s, and he was familiar and pleased with the results he'd seen from feeding gluten.

"We finish about 600 yearlings annually, and push those cattle on a high-energy diet," Lyman says. His wife, Karen Hadley Lyman, is the fifth generation in the family operation. "Two years ago, we switched to modified wet distillers' grain [with solubles] (MWDGS), which we obtain from an ADM ethanol plant. Since corn prices are higher, it is more economical to feed distillers', and we can get it close by. It works well for us."

More and more cattle producers in Illinois

are finding ethanol coproducts, both MWDGS and distillers' dried grains plus solubles (DDGS), are economical and better-performing feed ingredients than corn or CGF in high-energy diets. And, both distillers' products are becoming more readily available across Illinois.

The Renewable Fuels Association (RFA) estimates nearly half of U.S. fuel alcohol production occurs in Illinois and nearby states. The Illinois Corn Growers Association (ICGA) notes six ethanol plants produce 800 million gallons (gal.) of ethanol in Illinois each year, and another 350 million gal. will be coming on line soon. For every bushel of corn made into ethanol, the association says, about 18 pounds (lb.) of distillers' grains are created. More than 20 additional ethanol plants are in various planning stages in Illinois.

"The combination of high protein, fat and phosphorus concentrations in a low-starch feedstuff makes DGS an excellent choice for beef producers interested in reducing feed costs without sacrificing animal performance," says Justin Sexten, University

of Illinois Extension beef specialist. "When considering incorporating DGS into a feeding program, beef producers need to consider the nutritional characteristics of the product, transportation costs, storage options and feeding methods."

## Changes

Lyman finishes Angus-based cattle because they perform well in the feedlot and grade well. The operation for the last three years has also produced beef for Wolfe's Neck Natural Beef, a Pineland Farms Natural Meats Inc. Co., based in Maine. Wolfe's Neck works closely with its farmers to monitor select feed rations for a minimum 120 days.

"What we have found is that MWDGS has higher energy than corn and now is half the price on a dry-matter basis. In finishing cattle, energy is one of the most important things for us; more important than protein," Lyman says. "We mix and balance our own rations. The wet corn gluten has 90% the energy of corn, while the wet distillers' is 102% to 105% the energy and higher in

**Feeding &  
Feedstuffs**

protein. We don't get that from forage or soymeal."

Sexten notes that cattle on forage diets may require protein, energy and phosphorus supplementation.

"Most forage protein is degraded in the rumen, so cattle also require undegraded protein supplementation," he says.

"Distillers' grains plus solubles provides undegraded protein and phosphorus in a high-energy supplement that will not depress forage digestion due to its low starch content."

Lyman stopped feeding corn silage as roughage about five years ago. Today, the operation uses cornstalks, wheat straw, rye and some alfalfa instead.

"We grow our own corn and wheat," Lyman says. "We put dry shell corn through the roller mill and add the modified wet distillers' and balance the ration. In making the switch from corn gluten to distillers', we have created higher-energy diets. I would suggest producers work with their Extension on feeding. Balancing the calcium and phosphorus ratio can be an issue, and you may need to add thiamin."

The performance results speak for themselves. On the MWDGS, Lyman says the cattle are gaining not quite 4 lb. per day on the high end.

"It performs every bit as well as corn gluten, maybe better," he says. "I know some people think feeding distillers' hurts the grading, but I think the jury is still out on that. Age may be just as much a factor. We are feeding younger and younger all the time. Most of the cattle are only 16 to 22 months old when they are done now."

Lyman cautions that handling and storage can also be a concern for some producers. He has the wet distillers' delivered to the farm with a semi end-dump trailer and uses a belt conveyor to unload the product on a concrete pad.

"It stores fairly well," he says. "The distillers' lasts about 10 days in storage in warm temperatures and a little longer during the winter when it is cooler."

Lyman recommends working with a feed company familiar with the qualities and nutrition of ethanol coproducts, because those factors can vary from plant to plant.

"Look at the costs, including the transportation costs, and how hard or easy it is to incorporate distillers' into your rations. We are 75 miles from the plant we use, and it is priced competitively," he says. "We have several plants under construction near us, two in our county alone. When they come on line, we will check those out, too. Distillers' grains are here to stay as a feedstuff. You have to take a look at it."



## Pencil it out

Since feed costs are the largest factor influencing beef herd profitability, Justin Sexten, University of Illinois Extension beef specialist, advises producers to evaluate feeds on a dry-matter (DM) basis to determine their economic feasibility. Using local feeds when possible and calculating transportation costs help determine which product is most economical.

When feed costs and transportation costs per ton of DM are quoted together, Sexten estimates the general total cost of feed DM delivered to the farm as follows:

Delivered feed cost per ton ÷ % DM = \$ per ton of feed DM delivered

Soybean meal (SBM): \$200 ÷ 0.90 = \$222

DDGS: \$140 ÷ 0.90 = \$156

MWDGS: \$51 ÷ 0.50 = \$102

CGF: \$85 ÷ 0.90 = \$94

"Calculations aid in determining the base price producers can use to determine delivery cost to the farm," Sexten says. "Determining the most economical feedstuff requires additional calculations to determine actual nutrient costs. Since protein is generally the most expensive nutrient, cost analysis evaluating each on a protein basis is appropriate."

\$ per ton DM delivered ÷ % crude protein (CP) = \$ per ton CP, DM delivered

SBM: \$222 ÷ 0.48 = \$463

DDGS: \$156 ÷ 0.30 = \$520

MWDGS: \$102 ÷ 0.30 = \$340

CGF: \$94 ÷ 0.21 = \$448

"In this example, MWDGS is the most economical protein source. If storing and feeding wet products do not fit the operation, the comparison suggests CGF is more economical than SBM or DDGS," Sexten says. "When inclusion rates exceed animal protein needs, evaluate the feed alternatives on an energy basis as well."

\$ per ton DM delivered ÷ % total digestible nutrients (TDN) = \$ per ton TDN, DM delivered

SBM: \$222 ÷ 0.85 = \$261

DDGS: \$156 ÷ 0.92 = \$170

MWDGS: \$102 ÷ 0.95 = \$107

CGF: \$94 ÷ 0.80 = \$118

Since feedlot research has indicated DGS have about 120% of the energy value of corn, DGS can be substituted in feedlot diets beyond protein supplementation.

Finishing cattle (900-1,200 lb.) can be fed 10-20 lb. of MWDGS or 4-9 lb. of DDGS.

Sexten cautions that high concentrations of phosphorus and sulfur require management to prevent mineral imbalances. Diets utilizing DGS must maintain a calcium-to-phosphorus ratio of 1.8-to-1. In addition, dietary sulfur levels in excess of 0.4% of DM can lead to polioencephalomalacia (PEM). PEM occurs with sulfide overproduction in the rumen. Diets high in dietary sulfur may also require thiamine supplementation.