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Feed It Wet *or* Dry

Corn gluten, distillers' grains could help ranchers cut feed costs.

Story & photos by
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Byproducts from the ethanol and corn-processing industries could help ranchers cut feed costs when hay supplies are limited and expensive.

Cost-effective, high-protein feeds, such as corn gluten and distillers' grain, are becoming more readily available as ethanol plants and corn-processing facilities are built across the Plains, says Terry Klopfenstein, University of Nebraska (NU) animal scientist.

The byproducts can be fed in wet or dry form, each with specific advantages for varying herd sizes.

Ethanol plants produce distillers' grains by fermenting corn to alcohol. The resulting product contains the corn oil, which has a high energy value, Klopfenstein notes. Distillers' grains contain 25%-30% crude protein (CP) and 8%-12% fat. The feed has considerable economic value when fed as a protein source for young, growing beef cattle.

Another byproduct, corn gluten feed, is produced in the corn wet-milling industry as a byproduct of high-fructose corn syrup and alcohol. The feed has moderate energy value and contains 20%-22% protein and 16%-18% fiber.

Most starch is removed in the milling process, so the remaining corn gluten feed contains concentrated nutrients and is ideal for high-corn diets. The feed is high in phosphorus (P) and is available in dry or wet meal form or in pellets.

Both feeds contain beneficial fiber from corn kernels.

"It's a highly digestible fiber, so the cattle make really good use of it," Klopfenstein says.

Producers can use distillers' grains and corn gluten feed as supplements or substitutes for forage, he says. For example, in a limit-feeding situation, ranchers could use lower-quality forages, like wheat straw, as filler and feed byproducts as the primary source of nutrients.

Wet or dry

Many ethanol plants and corn-processing facilities sell much of their wet byproducts to feedlots and ranchers within a 100-mile radius, Klopfenstein says. This setup works well in states where there are substantial numbers of corn processors and cattle.

However, in many other states, only one resource — either cattle or the facilities — may be present, he notes.

In states like Iowa, Minnesota and South Dakota, ethanol plants are drying byproducts, making the product easier to ship greater distances and also much easier for buyers to store without facing spoilage issues. Dried byproducts may be better suited for smaller cattle operations, since wet products, which contain mostly water, can be costly to transport.

Conversely, wet byproducts often are cheaper, since drying costs are eliminated. Research conducted at NU in the early 1990s proved wet distillers' grains and corn gluten feed have more nutritional value than dry byproducts.

Best-suited for high-volume operations like feedlots, wet distillers' grains and corn gluten feed provide an economically viable feed option. The wet form often is impractical for smaller farmers and ranchers since the wet form often spoils more quickly and can require additional equipment and storage facilities, Klopfenstein says.

"In a feedlot setting, cattle are confined in larger numbers and are primarily on a grain diet," he says. "In a ranch or farm setting, cows or calves feed mainly on forage and aren't necessarily confined. Dry products fit better in this situation."

NU research studied the effectiveness of dry byproducts on more than 500 cattle at the Rex Ranch near Ashby, Neb. Results showed that supplementing bred heifers on winter range with dry corn gluten feed can reduce feed costs an average of 20%, or about $12.50 per head, compared to the cost of feeding hay.

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"Potentially, this will help cattle producers save a lot of money," he says. "Dried byproducts do cost more than wet byproducts, but they're still cheaper than feeding hay when winter range or crop residues are available."

In addition, heifers fed dry corn gluten feed lost less condition during winter and had similar weight gains and rebreeding rates as those fed hay, the study showed.

In another study at Mead, Neb., heifers were fed hay and dry distillers' grain (DDG) or corn-based supplements. The study indicated that DDGs provide 20%-25% more energy than corn, as well as offering protein and phosphorus. Heifers eating DDGs gained more and had better feed efficiency than corn-fed heifers.

Producer experience

But some farmers and ranchers have found ways to use wet byproducts effectively and take advantage of the greater nutritional value the wet forms offer.

Rick Hanschu first began feeding wet distillers' grains four years ago on his Ramona, Kan., ranch. Like many farmers, he quickly discovered the feed turned moldy before he could use it all. So he devised a practical solution that not only benefited him, but also his neighbors.

Hanschu purchases truckloads of wet distillers' grains, still steaming hot from a Colwich, Kan., ethanol plant. When the shipments arrive, he splits the feed with several neighbors. This enables each farmer to purchase smaller quantities of distillers' grains than offered directly

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from the plant, and it greatly reduces spoilage problems.

Hanschu also invested in a bagging machine that packages wet distillers' grains in large, white bags about 8 to 9 feet (ft.) in diameter. The bags seal out air and prevent the feed from molding. He rents the machine to neighbors to help them preserve their shares of the load.

"It's our way around the problem with wet distillers' grain," Hanschu says.

He also has fed dry corn gluten feed in the past, but switched to wet distillers' grain after his nutritionist recommended the byproduct to balance rations.

"It keeps the ration more moist, and it smells better," Hanschu says. "The cattle also don't get as fleshy, and they'll grow more. It has three times the protein of corn silage and twice as much energy, so my nutritionist is trying to talk me out of raising corn silage."

Transportation costs average about $40 per ton delivered, Hanschu says. The byproduct has been fairly cost effective compared to other feeds, he notes.

"Right now it's about an even deal when I push a pencil to it," he says.

Harvey Walker, who feeds cattle near Hope, Kan., has experienced similar results.

Walker started feeding DDG about 12 years ago since it was a cheaper protein source. About six years ago, he switched to feeding wet distillers' grain as part of his daily feed rations since the wet form was more affordable.

"It's cost effective and a cheap source of protein and fat," he says.

Both Walker and Hanschu have been pleased with the feed's results and its ability to provide a cost-effective source of nutrients.

"I recommend it to all my friends," Hanschu says. "I tell them they'll just like how the cattle like the feed, and they'll like what they see in the bunk and how the cattle eat it."

Walker agrees.

"We think we're getting better yield on the cattle," he says. "With the price of distillers' grains, the fat content is cheaper than what you can buy fat products for."

He continues, "On a dry-matter basis, the distillers' grain is about the price of corn. It has a lot more fat and no starch, and the cattle will do pretty well on it. We feel like not only do we get a little better yield, but we get a little more dry-matter consumption in the cattle."

Economic advantages

Feeding distillers' grains or corn gluten feed can help producers increase income or reduce costs, Klopfenstein says. A successful producer should constantly work toward reaching both goals, he says.

"A commercial producer should always try to market calves to their advantage and increase income," he says. "But at the same time, he should try to manage costs as best he can. This is one opportunity to help reduce feed costs."

As ethanol production increases, ranchers may discover byproducts are becoming easier to obtain.

"The expectation is that supply is going to be great, and these will be really good, economical feed resources for cattlemen," Klopfenstein says.

But the byproducts' cost effectiveness could vary from year to year, he cautions. In 2002 the Great Plains experienced drought and high forage prices, but there was plenty of inexpensive grain and byproducts, Klopfenstein says. In 2003 the drought was less severe, causing improvements in hay production that resulted in more affordable hay prices, he adds.

Weather isn't the only factor affecting price. Distillers' grains and corn gluten are good substitutes for soybean meal, so worldwide events such as drought or decreased soybean production can influence the price and availability of the byproducts in the United States, Klopfenstein says.

But for now, many producers are finding that byproducts could offer a viable and increasingly attractive option for cutting feed costs.