Corn Coproduct Survival Guide

Consider a number of factors before buying.

Story by
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If you're eyeing the possibility of incorporating corn coproducts into your operation's feed rations, the information below may help you succeed. Extension nutrition and management specialists say beef producers can survive in a corn coproduct world, as long as a number of factors are considered before buying.

"To utilize corn coproducts, it is imperative that producers become knowledgeable about what products are available, obtain the name and phone number of their local ethanol plant marketing manager, learn how to access product prices and understand product analysis," says Dave Seibert, University of Illinois Extension animal systems educator.

Seibert stresses that producers must also become knowledgeable about the effect of moisture levels and the cost it takes to get products from different plants, consider storage and spoilage possibilities, be able to compare the costs of the various energy and protein sources, and have the ability to formulate and supplement their beef cattle diets.

"You can't just jump into the corn coproduct world without asking whether or not these coproducts fit into your program at home," advises Daryl Strohbehn, Iowa State University Extension beef cattle specialist. "Corn prices are going to continue to be the main factor in determining how you are going to do things."

With that said, Strohbehn adds that beef cattle are uniquely suited to manage corn coproducts in their diets, including distillers' grains from ethanol production. The principal products from the ethanol process are wet or dried distillers' grains, condensed distillers' solubles and combination products of the two, depending on the plant.

Distillers' alternatives

"Corn coproducts from the ethanol industry offer cattle producers a feed resource that is high in protein and superior to its parent grain in energy," he says. "Because the starch is removed in ethanol production, distillers' grains do not interfere with fiber digestion in rations high in roughage content. Distillers' grains also have good bypass protein characteristics, which enhance their role in growing calf and lactating cow rations."

Strohbehn explains that the rumen is what gives cattle unique digestion capabilities suited for corn coproducts. The rumen physically mixes and breaks down the feed, which allows fermentation to take place. Calling the rumen a "forage digestion system," he notes that while the system may not be the best scenario for feedlot finishing rations that contain large amounts of grain in combination with distillers' grains, the system offers a very positive alternative for cow and stocker diets supplemented with distillers' grains.

"Distillers' grains have a nutrient analysis about three times greater than corn grain, except for the energy value," he says. "Energy estimates vary greatly among feeding rations. Feedlot research shows energy estimates can vary by as much as 40%."

Energy values, fat content and protein

Strohbehn says feed rations higher in distillers' grains generally end with energy estimates in the 110%-120% range of corn grains. Low-level feeding rates end with energy estimates of 140%-150%. In cow rations, he uses a conservative estimate of 125% the energy value of corn, adding that a great deal of the energy is due to the corn oil left in the distillers' grains. He recommends that for beef cow rations, producers not exceed total ration fat content of 5%-6% with distillers' grains.

Strohbehn estimates on the protein side that distillers' grains, even when solubles are added in, tend to range from 28%-36% crude protein (CP) on a dry-matter (DM) basis, or 10-15 percentage units less than 44% soybean meal if compared on a DM basis.

"A distinct difference exists in crude proteins when comparing distillers' grains to either alfalfa hay or soybean meal, and that is in the degree of rumen degradation to ammonia or the amount which bypasses rumen fermentation," he says. "Distillers' grains have lower degradation rates. Distillers' is absorbed as amino acids for productive functions."

Bypass is important because growing calves and lactating cows have higher protein requirements and need some bypass protein to achieve maximum gains and milk production. Strohbehn says growing calves weighing 350 to 600 pounds (lb.) probably offer the greatest opportunity for using bypass protein from distillers' grains.

"When feeding a ration containing hay, a large portion of the crude protein is degraded in the rumen," he explains. "In lower-energy growing rations for calves, there may not be sufficient energy intake for the rumen microbes to synthesize microbial protein from this degraded alfalfa protein, resulting in protein shortages for the calf.

"Growth rate and efficiency are reduced because protein requirements are not met," he continues. "When distillers' grains are included in the ration, a larger portion of the protein bypasses rumen degradation, supplying the necessary protein for gain allowed by the amount of energy being fed."

Weigh the options

Strohbehn reiterates that producers must weigh these and possibly other factors before entering the corn coproduct world. "As always, when determining if a byproduct feed fits into your production system, consider the delivered purchase cost, efficient storage principles and the ability to incorporate the product into feeding regimens," he says. "Be sure to consider all potential factors prior to making any wholesale ration changes."

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