

# Consider Grain Coproducts in Feedlot Diets

*A viable supplement option, grain coproducts require analysis, feeding considerations.*

by **BARB BAYLOR ANDERSON,**  
*field editor*

When it comes to coproducts, no one size fits all. That's according to Ohio State University ruminant nutrition professor Francis Fluharty, who discussed the topic during a recent webinar.

"U.S. corn use for ethanol production has increased significantly, which has created more coproduct availability for animal feed rations," he says. "But differences in coproducts exist. To be sure producers feed for the best response, they need to have coproduct batches analyzed."

Fluharty says aflatoxins may not all be destroyed during ethanol production, which can cause a reduced growth rate. In addition, variance in both nutrient and sulfuric acid levels can occur at the ethanol plant level. For example, sulfuric acid levels may range from 0.5% to 1.8% sulfur, while the maximum tolerable level for cattle feed use is 0.4% of diet dry matter.

"Modified, wet, dried and distillers' solubles all have varied dry matter. Small producers who buy the coproduct one time and use it in a feeding program without doing sulfur analyses could be in trouble. They may incorrectly estimate

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the percentage," he says. "Large feedlots with several loads a day can probably run 0.6%-0.7% with no problem if intake fluctuates."

Coproduct fat levels also vary. Fluharty says the more distillers' fed, the greater the chance of urinary calculi if phosphorus is being supplemented. Full-fat distillers' grain research shows fat should not be more than 6%, as fat will coat feed particles in the rumen. Coated particles do not allow bacteria to attach in the rumen and ultimately lower feed digestibility.

"On a growing forage diet, keep the dietary fat level below 4%. Otherwise fiber-digesting bacteria attach to the forage and the fat limits the attachment," he explains. "With grain feedlot diets and fat at 6%, you can increase the diet energy

density. That may be beneficial to animal performance, especially in hot weather."

Adding too much fat or too much sulfur can result in abnormal animal behavior. Resulting hydrogen sulfide gas can be eructated by the animal and then inhaled. The gas directly enters circulation through the pulmonary system and may disrupt energy metabolism in the brain.

To prevent such problems, Fluharty says producers can add monensin (Rumensin®) to rations.

"Animals fed 60% dried distillers' grains in the ration along with monensin and haylage may see rumen pH fall six to 14 hours after feeding. The hydrogen sulfide gas is then more acceptable, and cattle have the best gain," says Fluharty, citing feedlot research.

Coproduct particle size is another consideration. A big difference exists between corn kernel and dried distillers' grains sizes, for example. Fluharty recommends a smaller particle size for quicker movement through the rumen, as propionate increases glucose production, which means better average daily gain and marbling. Dried distillers' grains can be 20%-60% of the ration.

"Between 20% and 40%, there is no difference in average daily gain. Average daily gain and feed to gain are better at a 40% dried distillers' inclusion rate than at zero versus an all-corn diet," says Fluharty. "About 25% is good, but at 50% protein and sulfur may be too high. Crude protein also is a negative, depending on how you value and handle manure. While there are no differences in marbling scores or ribeye, more research needs to be done before we can recommend more than 40% distillers' grains be fed."

Fluharty adds corn gluten is another option that is 80% ruminally degradable and improves fiber digestibility. Soy hulls are highly digestible, and used for fiber, but not energy or protein.

**Editor's Note:** A former National Junior Angus Board member, Barb Baylor Anderson is a freelancer from Edwardsville, Ill.

