



Do We Have To Feed Grain?

This is a question that Dr. Galen Erickson from the University of Nebraska addressed at a recent Provimi meeting in Amarillo, Texas.

Given the current and projected prices for small grains (especially corn), the question is timely.

Current corn milling byproduct utilization in feedlot diets is usually up to 40% of the diet dry matter. The expected growth of the corn milling industry will increase the byproduct supply in the future, providing opportunity to increase the amount used. The levels used also may interact with roughage levels in the diet. Traditionally, roughage is fed to manage acidosis in feedlot cattle. Because corn milling byproducts also help with acidosis control, an opportunity may exist to lower roughage levels in diets with higher levels of the byproducts.

Dr. Erickson reported on a trial (Loza et al., 2005) in which 280 yearling steers (initial body weight = 815 lb) were used to evaluate the effects of increasing levels of a corn milling byproduct combination (50% wet corn gluten feed, 50% wet distillers grains; DM basis) and different alfalfa hay levels on feedlot performance. Wet distillers grains and wet corn gluten feed may be complementary based on their nutrient composition. Distillers grains are higher in fat and undegradable intake protein, while WCGF is higher in effective fiber. The data for 7.5% alfalfa hay diets are presented here.

The diets fed are presented in Table 1. While corn was not completely eliminated from any of the diets, a finishing diet with 12.5% of the diet as corn was fed.

Table 2 on page 2 shows the performance data for the cattle. Steer DMI, ADG, and F:G responded quadratically, with the greatest ADG and improved F:G at 25% and 50% blend. These results suggest feeding a 50:50 combination of wet corn gluten feed and wet distillers grains for up to 50% of a diet dry matter will enhance cattle performance. Cattle fed the 50:50 combination at 75% of the diet performed as well as cattle fed no corn byproducts.

Calculated yield grade and backfat showed a quadratic response ($P < 0.5$) to blend levels in the diets, while marbling scores showed a trend ($P = 0.08$) for a quadratic response.

While the question of “Do we have to feed grain?” remains, data from this University of Nebraska trial suggest that as little as 12.5% of the diet dry matter as corn can give satisfactory feedlot results.

Table 1. Diets Containing Different Levels Of A Byproduct Blend^a Fed To Finishing Steers

Ingredient	Treatments ^c			
	Control	25	50	75
Corn ^b	87.5	62.5	37.5	12.5
Wet distillers grains	0.0	12.5	25.0	37.5
Sweet Bran [®]	0.0	12.5	25.0	37.5
Supplement	5.0	5.0	5.0	5.0
Alfalfa hay	7.5	7.5	7.5	7.5

^a50:50 blend of wet distillers grains and wet corn gluten feed (DM basis)

^b50:50 blend of high moisture corn (71% DM): dry rolled corn (DM basis)

^cPercentage of diet DM 50:50 blend gluten and distillers

(continued)

Table 2. Effect Of Different Inclusion Levels Of A Byproduct Blend^a Fed To Finishing Steers

	Treatments			
	Control	25	50	75
DMI, lb/day	24.3 ^b	26.5 ^c	26.1 ^c	23.6 ^b
ADG, lb/day	3.99 ^b	4.57 ^c	4.56 ^c	3.93 ^b
F/G	6.10 ^b	5.80 ^c	5.73 ^c	6.01 ^{bc}
Calculated YG	1.85	2.37	2.08	2.10
Marbling score ^d	532	521	518	473
12th rib fat, in.	0.37	0.45	0.46	0.38
REA, sq. in.	14.5	14.4	14.1	14.2

^a50:50 blend of wet distillers grains and wet corn gluten feed (DM basis)

^{b,c}Different superscripts within a row are different (P<0.05)

^d450 = slight⁵⁰, 500 = small⁰, 550 = small⁵⁰, etc.

Reference:

Effect Of Feeding A Byproduct Combination Consisting Of Wet Distillers Grains And Wet Corn Gluten Feed To Feedlot Cattle. Pablo L. Loza, Kyle J. Vander Pol, Galen E. Erickson, Terry J. Klopfenstein, Rick A. Stock. In: 2005 Nebraska Beef Cattle Report.