BEEF CATTLE RESEARCH UPDATE

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Effects of Frequency of Dried Distillers Grains Supplementation on Cattle Performance

Reducing winter feed costs for beef cows is important to cow-calf producers since Standardized Performance Analysis records have shown that feed costs account for more than 60% of beef producers' annual cow cost with over one-half of these costs attributed to winter feeding.[1] The labor and transportation expenses associated with supplement feeding contribute significantly to the fixed cost of cattle operations. Therefore, frequency of supplementation is an important management and economic option to consider when designing supplementation programs for beef cattle fed forage-based diets. Numerous research studies have shown that supplementing cattle with high protein supplements (cottonseed meal) three times or once weekly usually gives similar performance compared to daily feeding.[2,3]

Research has demonstrated that dried distillers grain plus solubles (DDGS) is an excellent source of energy and protein for growing cattle. DDGS generally contains about 30% crude protein, 10% fat, 90 to 100% TDN, and 0.65% phosphorus (dry matter basis, DM) making it an excellent supplement in many grazing situations. Recent Kansas State University research examined the effects of infrequent DDGS supplementation on cow body weight and body condition score.[4] In this study, pregnant spring calving Angus-crossbred cows were maintained on native range pastures (7.5% crude protein) for 84 days before the expected onset of calving. The cows were supplemented with DDGS daily, every three days, or every six days over the 84 day period to provide 0.5 lb/cow per day of crude protein (1.8 lb DDGS/cow/day). For example, cows supplemented once every six days received 3 lb of crude protein (10.8 lb DDGS/cow) on the day of supplementation. In addition, the cows were fed ground forage sorghum hay (6.9% crude protein) daily to provide half of their expected forage intake to ease grazing pressure and ensure ample forage intake. On day 84, the treatments were terminated and the cows were moved to a different native arrange pasture where they had unrestricted access to the sorghum hay and were supplemented with DDGS daily at the same rate for the duration of the calving season. The cows were weighed and body conditioned scored every 28 days during the study, immediately following calving, and day 132 (prior to summer turnout).

These researchers reported that frequency of supplementation did not affect changes in cow body weight or condition score throughout the experiment. In addition, supplementation frequency did not affect calf birth weight or average calving date, and cow body weight at summer turnout. These data suggest that DDGS may be supplemented as infrequently as once every 6 days without adversely affecting performance of spring-calving cows.

An additional Kansas State University study evaluated the effect of frequency of dried distillers grains (DDG) supplementation on gains of heifers grazing smooth bromegrass pastures in 2009, 2010, 2011, and 2012 (30 heifers per year).[5] The average heifer initial weight and duration of the grazing period were 420 lb and 192 days, 422 lb and 168 days, 406 lb and 169 days, and 447 lb and 127 days, respectively, in 2009, 2010, 2011, and 2012. The heifers were supplemented with DDG at 0.5% of body weight per head daily or an equivalent amount of DDG fed three days per week (Monday, Wednesday, and Friday). These researchers reported that daily gains and DDG intake of the heifers fed daily or three days per week were similar during all four years. However, they did note that caution should be used when feeding greater than the equivalent of 0.5% of body weight per head daily fewer than seven days per week to avoid potential sulfur toxicity problems.

In summary, both of these studies suggest that cattle performance with daily supplementation of DDGS or DDG is not improved when compared to less frequent supplementation. The labor and fuel savings associated with reducing supplementation frequency would result in lower overall supplementation costs. **Note:** Since both DDGS and DDG are meals, it is recommended that they be fed in bunks. In both of these Kansas studies, the products were fed in bunks.

Can DDGS be Fed on the Ground?

University of Nebraska researcher published in 2011 compared feeding DDGS in a bunk or on the ground to steer calves (615 lb initial weight) grazing subirrigated meadow over 72 days.[6] The steers were fed the daily equivalent of 2 lb/head (DM basis) and the supplement was delivered three days per week. These researchers reported that steers fed in a bunk gained faster than steers fed on the ground (1.17 vs. 0.93 lb/day, $P < 0.001$). Using net energy equations, the difference in DDGS intake between treatments was calculated. For steers fed in a bunk, a reduction in DDGS intake between 0.79 and 0.90 lb/day would have resulted in a 0.24 lb/day reduction in daily gains which is the equivalent of 36-41% waste. Obviously, ground condition would affect the amount of waste. To determine, the feasibility of feeding on the ground, the cost of feed wastage needs be compared to the cost of providing a bunk. In this experiment, the researchers reported that profitability was greater for steers fed in bunks due to greater gains and no feed wastage.

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