Supplementation of Dried Distillers Grains to Yearling Heifers Grazing Native Range: A Potential Management Strategy during Drought

Rachael Brooke
Phillips-Rooks District Extension Agent
Agriculture and Natural Resources

Maintaining the delicate balance of cattle performance and rangeland health is part of the overall goal of managers each year. It becomes easier for these two components to become imbalanced during drought, with several consecutive years of overgrazing contributing to long-term negative consequences on rangeland productivity. While conditions certainly vary, much of the major beef cattle production areas of Kansas are in some degree of drought to start the 2023 growing season.

Can strategic supplementation of a protein and energy source such as dried distillers grains plus solubles (DDGS) to cattle on grass mitigate the potential negative impacts of grazing in years following drought? Costs associated with labor and equipment necessary for regular handling and delivering DDGS to grazing cattle make it impractical for some operations. Thus, feeding DDGS through portable self-fed feeders may be a feasible strategy provided consumption is limited. However, if fed in self-fed feeders, what levels of intake may be realized by adding varying levels of salt to DDGS? Research conducted at Kansas State University (Melton et al., 2014) addressed these questions with yearling heifers grazing Flint Hills native range and concurrently fed DDGS as a self-fed supplement.

A 78-day grazing study was conducted from mid-June through early-September at the Kansas State University Beef Stocker Unit near Manhattan, KS utilizing heifers weighing approximately 580 lbs. Heifers were assigned to one of three grazing treatments with four pasture replicates per treatment (CONT = non-supplemented; LOW = supplemented DDGS with 10% added salt; and HIGH = supplemented DDGS with 16% added salt). Typically, pastures at this research unit are stocked at 250 lbs. of beef per acre. This study employed lower stocking rates to account for drought conditions and the addition of supplemental DDGS. Therefore, the control (CONT) treatment was stocked conservatively at 200 lbs. of beef per acre, whereas the HIGH and LOW treatments were more heavily stocked (225 and 250 lbs. of beef per acre, respectively).

To accommodate the heavier stocking rates for treatments in which cattle were supplemented, the daily targeted DDGS consumption allowances were set at 0.6% and 1.0% of body weight (3.3 and 5.7 lbs. DDGS daily on a dry matter basis) for the HIGH and LOW salt inclusion treatments, respectively. These daily DDGS intake levels targeted for each treatment were based upon previous K-State research with yearling cattle grazing Flint Hills native range during summer. Upon turning cattle out to their respective treatment pastures, supplementation with DDGS began and was provided through portable creep feeders for the remainder of the study. All feeders were weighed weekly to determine consumption of DDGS during the previous week. If DDGS intake was beyond the target amount, the feeder was moved further away from the primary water source to reduce consumption.

Consumption of DDGS between low and high-salt treatments differed as was anticipated. Total intake of DDGS for cattle on the low-salt treatment was nearly two times the amount of cattle on the high-salt treatment. On a per day basis, cattle offered access to DDGS with 10% added salt consumed approximately 3 lbs. per head more than cattle fed DDGS with 16% added salt. The level of salt added to DDGS resulted in acceptable supplement consumption for the HIGH treatment, but intake for the LOW treatment exceeded targeted amounts by approximately 12% (6.4 vs. 5.7 lbs. per head per day DM basis). Compared with CONT, both LOW and HIGH salt treatments resulted in significantly greater average daily gain. This resulted in greater ending weight upon conclusion of the trial for supplemented cattle. Although numerically greater for cattle

on the LOW salt treatment, gains were not statistically different between treatments in which DDGS was supplemented regardless of the level of salt added. Likewise, no differences in efficiency of supplement utilization were detected between LOW and HIGH salt treatments (11.2 vs. 7.7 lbs. DDGS per pound of added gain for LOW and HIGH groups, respectively). These data indicate that a growth response may be observed by supplementing yearling cattle grazing Flint Hills native range with a protein and energy source such as DDGS during the growing season. During drought or in years following drought in which forage production may be limited, supplementation may be a strategy producers can employ to offset reduced stocking rates without harming pasture productivity. This research further demonstrates that salt can be added to DDGS to limit consumption when offered to cattle in a free-choice manner, and that inclusion of salt may be varied accordingly to achieve desired consumption levels.

For more information, please contact the local K-State Research and Extension Office.