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Effects of Supplementation with Corn or Dried Distillers Grains on Gains of Heifer Calves Grazing Smooth Bromegrass Pastures

L.W. Lomas and J.L. Moyer

Summary

Thirty heifer calves grazing smooth bromegrass pastures were used to compare supplementation with 0.5% of body weight per head daily of corn or dried distillers grains (DDG). Daily gains of heifers supplemented with corn or DDG were similar ($P > 0.05$).

Introduction

Distillers grains, a byproduct of the ethanol industry, have tremendous potential as an economical and nutritious supplement for grazing cattle. Distillers grains contain a high concentration of protein (25 to 30%), with more than two-thirds escaping degradation in the rumen, which makes it an excellent supplement for younger cattle. Recent advancements in the ethanol manufacturing process have resulted in extraction of a greater amount of fat resulting in distillers grains that may contain less energy than corn. This research was conducted to compare performance of stocker cattle supplemented with corn or DDG at 0.5% body weight per head daily while grazing smooth bromegrass pastures.

Experimental Procedures

Thirty heifer calves (420 lb) were weighed on two consecutive days, stratified by weight, and randomly allotted to six 5-acre smooth bromegrass pastures on April 8, 2014. Three pastures of heifers were randomly assigned to one of two supplementation treatments (three replicates per treatment) and grazed for 142 days. Supplementation treatments were ground corn or DDG at 0.5% body weight per head daily. DDG used in this study contained 25% protein and 6% fat. Pastures were fertilized with 100 lb/a nitrogen and P_2O_5 and K_2O as required by soil test on February 21, 2014. Pastures were stocked with 1 heifer/a and grazed continuously until August 28, 2014, when heifers were weighed on two consecutive days and grazing was terminated.

Cattle in each pasture were group-fed corn or DDG in meal form in bunks on a daily basis, and pasture was the experimental unit. No implants or feed additives were used. Weight gain was the primary measurement. Cattle were weighed every 28 days; quantity of supplement fed was adjusted at that time. Cattle were treated for internal and external parasites before being turned out to pasture and later vaccinated for protection

from pinkeye. Heifers had free access to commercial mineral blocks that contained 12% calcium, 12% phosphorus, and 12% salt.

Results and Discussion

Cattle gains and supplement intake are presented in Table 1. Daily gains and average daily supplement intake were 2.00 and 2.8 lb per head daily and 2.10 and 2.9 lb per head daily for heifers supplemented with corn and DDG, respectively. Gains and supplement intake of heifers supplemented with corn were similar ($P > 0.05$) to those of heifers that were supplemented with DDG. This result suggests that protein did not limit performance of heifers grazing these pastures because heifers fed corn received a similar amount of supplemental energy but less supplemental protein than those fed DDG.

Table 1. Effects of supplementation with corn or dried distillers grains (DDG) on gains of heifer calves grazing smooth bromegrass pastures, Southeast Agricultural Research Center, 2014

Item	Supplement	
	Corn	DDG
No. of days	142	142
No. of head	15	15
Initial weight, lb	423	423
Final weight, lb	706	720
Gain, lb	284	298
Daily gain, lb	2.00	2.10
Gain/a, lb	284	298
Total supplement consumption, lb/head	397	409
Average supplement consumption, lb/head per day	2.8	2.9

