

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

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Summary

A total of 60 heifer calves grazing smooth bromegrass pastures were used to compare supplementation of 0.5% of body weight per head daily of corn or dried distillers grains (DDG) in 2014 and 2015. Daily gains of heifers supplemented with corn or DDG were similar ($P > 0.05$).

Introduction

Distillers grains, a by-product 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; therefore, creating 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

Sixty heifer calves were weighed on two consecutive days, stratified by weight, and randomly allotted to six 5-acre smooth bromegrass pastures on April 8, 2014 (423 lb) and April 7, 2015 (438 lb). Three pastures of heifers were randomly assigned to one of two supplementation treatments (three replicates per treatment) and grazed for 142 and 182 days in 2014 and 2015, respectively. 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 and March 11, 2015. Pastures were stocked with 1 heifer/a and grazed continuously until August 28, 2014 and October 6, 2015, 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 Tables 1 and 2 for 2014 and 2015, respectively. Grazing gains and supplement intake were 2.00 and 2.8 lb/head daily, 2.10 and 2.9 lb/head daily, 1.69 and 3.0 lb/head daily, and 1.61 and 3.0 lb/head daily for heifers supplemented with corn and DDG in 2014 and 2015, 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 would suggest that protein was not limiting performance of heifers grazing these pastures as 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

Table 2. Effects of supplementation with corn or dried distillers grains (DDG) on gains of heifer calves grazing smooth bromegrass pastures, Southeast Agricultural Research Center, 2015

Item	Supplement	
	Corn	DDG
No. of days	182	182
No. of head	15	15
Initial weight, lb	438	438
Final weight, lb	746	731
Gain, lb	308	293
Daily gain, lb	1.69	1.61
Gain/a, lb	308	293
Total supplement consumption, lb/head	539	537
Average supplement consumption, lb/head per day	3.0	3.0