

Pasture Supplementation of Dakota Bran™ Pelleted Distillers Product to Growing Heifers in Southern Iowa

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Summary

Sixty-six fall born Angus heifers were used in a grazing study to evaluate supplementation of Dakota Bran™ pelleted distillers grain product supplemented on Southern Iowa pastures. The levels of supplementation were two groups of none (CONT) and two groups fed 1.5 percent of body weight (TRMT). Stocking rates were increased 29 percent for the treatment groups compared to controls. Daily gains were 0.79 lb. per day for the controls and 1.48 for the treatments during the supplementation period. Calculations based off of sward height measures for both groups indicate supplemented heifers had a 26.8 percent reduction in pasture dry matter intake. At current costs for Dakota Bran™ treatment groups extra gain slightly outweighed feed costs while higher stocking rates and pasture extension increased value of the product.

Introduction

The sustained growth of the ethanol industry in the upper Midwest is well documented. There are many ways this affects the cattle industry. Increased demand for corn by the industry has driven prices to record highs in 2008. The increased cost and demand for corn have forced cattle producers to evaluate the many ways to use the by-products produced by the ethanol industry. Increased ethanol production has led to higher levels of the by-product distiller's grains wet with solubles (DDGS). Companies have started to market pelleted versions of this product that may be economical for cattle producers to use to extend pastures while cheapening gains. The increase in pelleted products has led to easier ways to transport, store, and feed these products to grass cattle. This study was designed to evaluate the effect of feeding mid-range levels of pelleted DDGS to heifers under Southern Iowa grazing conditions.

Materials and Methods

Sixty-six fall born Angus heifers were blocked by sire and randomly allotted to four pasture groups and two supplement treatments. The treatments were non-supplemented control (CONT), and supplemented (TRMT). The supplementation level represented approximately 1.5 percent of the treatment heifer's body weight as Dakota Bran™ pelleted distillers dried grains with solubles

(DDGS). The four pasture groups consisted of 16 paddocks ranging from 3.09 to 3.36 acres. Twelve of the paddocks consisted primarily of mixed cool season grasses. The remaining four paddocks contained a mixture of cool and warm-season grasses. A four pasture rotation was used for each replication. The two control and two treatment groups were allotted equally across pasture species. Stocking rates differed by treatment. The control groups were assigned 14 head while the treatments were increased to 19 head per replication.

The heifers were weighed, condition scored, and assigned to treatments on May 7, 2008. On July 1 they were re-weighed, condition scored, and poured with Dectomax (doramectin, Pfizer). Final weights were taken October 2. Initial and final weights were taken with cattle off water and pasture for 24 hours. Total grazing days were 148. All cattle were given access to a free choice mineral containing 12% Ca, 8% P, 10% salt, 2,500 ppm Mn, 3,000 ppm Cu, 23 ppm Ca, 30 ppm Se, 5,000 ppm Zn, 300,000 IU/lb Vitamin A, 35,000 IU/lb Vitamin D and 500 IU/lb Vitamin E (as-fed). Supplementation rates for the treatment groups were adjusted periodically for changes in cattle weights to target 1.5% of body weight daily. Dakota Bran used July 7-October 1 was in a pelleted form and was fed using one portable bunk per group. The analysis of the Dakota Bran product used in this study is shown in Table 1. Pasture sward heights were measured in ten locations when cattle were rotated in and out of each paddock. Two cages were also measured and moved at this time. The sward height inside the cages showed how much the pasture grew while the cattle were there. The data were analyzed using the GLM procedure of SAS.

Table 1. Analysis of Dakota Bran™ pelleted DDGS product used to supplement grazing cattle¹.

Dry Matter, %	93.4
Crude Protein, %	14.4
ADF, %	6.3
NDF, %	24.9
Fat, %	13.6
Ca, %	0.10
P, %	0.76
K, %	1.31
S, %	0.72

¹Percent of dry matter

Results and Discussion

The weights, daily gains and condition scores of the heifers are shown in Table 2. The results in Table 2 are

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reported as four independent groups, and also as treatment and control averages.

Overall the weight gain of the heifers was slightly lower than expected. Wet weather may explain much of the reason for lower gains. The wet weather led to a week of scours for one of the treatment groups resulting in hindered performance for that week.

There was a direct correlation between the heifers acceptance of the feed and weight gain. There was an initial acceptance period where the Dakota Bran™ had no real impact on weight gain. During period two cattle being supplemented gained 0.69 lbs/day faster than controls. There were not differences in condition scores after the initial scoring. Supplemented cattle may have gained condition at a faster rate during the supplementation period, July 1 to October 2.

Calculations for daily dry matter intake based on sward height reduction in grazed pastures, and cage growth, showed a 16.93 lbs or dry matter per head per day intake average for the two control groups during the feeding period. The two treatment groups consumed 12.39 lbs of dry matter per head per day; a reduction of 4.54 lbs of pasture dry matter intake. Supplementation of 1.5% of body weight decreased pasture intake by 26.8 percent.

Summarized in Table 3 are pasture productivity and pasture supplement costs. These costs are not intended to reflect total cost of production, only those costs that change given changes in rate of supplementation. Given feed cost assumptions from summer 2008, Supplementation improved gain per acre by 100 pounds at a similar cost of gain.

Table 2. Performance of heifers supplemented with Dakota Bran™ pelleted DDGS.

	Control	Supplemented	SE	Significance
Initial weight, lb.	469	452	2	<.04
July 1 weight, lb.	526	482	21	NS
Oct. 2 weight, lb.	598	619	33	NS
Initial condition score	4.07	3.98	.02	<.07
July 1 condition score	4.32	4.03	.40	NS
Oct. 2 condition score	4.21	4.34	.18	NS
ADG May 7-July 1, lb.	1.05	0.54	.41	NS
ADG July 1-Oct. 2, lb.	0.77	1.46	.56	NS
Overall ADG, lb.	0.88	1.12	.22	NS
DMI July1-Oct. 2, lb.	16.93	18.03	1.76	NS
--Forage	16.93	12.39	1.70	NS
--Supplement		5.65	--	

Table 3. Pasture Productivity and Costs.

	CONTROL	TREATMENT
Gain per Acre; lb.	143.28	288.59
DDGS/head/day, lb.	---	5.65(July-Oct)
Pasture & Supplement Cost		
Cost/Acre	\$58	\$129
Cost/lb. gain	\$.40	\$.44
\$58/acre pasture rent and \$205 per ton for Dakota Bran		