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Abstract

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Keywords

Cattlemen's Day, 1990; Kansas Agricultural Experiment Station contribution; no. 90-361-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 592; Beef; Mature grass; Drylot; Growing; Limit feeding

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PERFORMANCE OF STEERS LIMIT-FED IN DRYLOT OR ON MATURE NATIVE PASTURE¹

F. K. Brazle² and G. L. Kuhl

Summary

Growing steers were limit-fed the same amount of a grain- and silage-based ration either in drylot or on dormant native range. The steers wintered on pasture gained 14.2% slower (1.82 vs 2.08 lb/d; $P < .01$) and were 15.3% less efficient than those in drylot, apparently because of increased energy expenditure from voluntary exercise.

(Key Words: Mature Grass, Drylot, Growing, Limit Feeding.)

Introduction

Winter pasture is often viewed as a "free" loafing area, offering convenience and freedom from mud, compared to drylot feeding. However, allowing cattle to roam large pastures can result in greater energy needs for maintenance because of unlimited exercise. The objective of this trial was to compare the performance of growing steers fed a medium energy ration on dormant pasture or in drylot.

Experimental Procedures

Two hundred twelve mixed-breed steers were allotted randomly to either a drylot or pasture group. Both groups were limit-fed a grain- and silage-based ration (Table 11.1) twice a day, 2 hr apart, in concrete bunks and were limited to about 80% of their estimated "full-feed" intake. Both groups were fed the same amount of mixed ration per head daily during the 112-d trial. Unheated drinking water was provided to both groups. The drylotted cattle were fed in well-drained pens with 675 sq. ft of space per head, so mud was not a problem. The pasture-fed steers were allowed access to a 320-acre pasture of dormant native tall grass. The pasture was stocked at the rate of 3 acres per steer.

Results and Discussion

The drylot-fed steers out-gained those fed on dormant native grass pasture by .26 lb per head daily ($P < .01$), even though both groups were fed the same level of mixed ration during the 112-d trial. Although the amount of grass consumed was not measured, our results suggest

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that standing, mature, native grass has little value in a backgrounding program. The reason steers on pasture gained slower and required over 15% more feed per pound of gain than those in drylot was likely the differences in maintenance requirements. The drylot steers had limited exercise, whereas the pasture steers roamed freely over the half-section pasture.

Early research by Ed Smith at KSU showed similar results when calves were fed to gain about .50 lb per head daily either in drylot or on dormant winter pasture. However, wintering cattle in drylot can be a problem if lots become muddy; then the reduction in gain because of mud could be greater than that caused by unlimited exercise. The importance of clean, well drained drylots to optimize growing cattle performance is emphasized.

Table 11.1. Limit-Fed Ration Composition and Analysis

<u>Ration mixture, as-fed basis</u>	
46.5%	Corn silage
47.5%	Ground grain sorghum
6.0%	40% Protein supplement with Rumensin (R-250)
<u>Estimated composition, dry matter basis¹</u>	
64.9%	Dry matter
81.0 Mcal/cwt	Estimated net energy for maintenance
51.3 Mcal/cwt	Estimated net energy for gain
74.8%	Estimated TDN
12.2%	Crude protein
9.0%	Crude fiber
.45%	Calcium
.30%	Phosphorus

¹Ration formulated based on analysis of individual feeds.

Table 11.2. Performance of Steers Limit-Fed in Drylot or on Dormant Pasture

Item	Drylot	Pasture
No. steers	106	106
Starting weight, lb	497.5	487.7
Average weight maintained during wintering period	615.0	592.7
Daily gain, lb	2.08 ^a	1.82 ^b
Daily ration intake:		
As-fed, lb	20.9	21.1
Dry matter, lb	13.6	13.7
Feed dry matter/gain	6.52	7.52

^{ab}Means in a row with unlike superscripts differ (P<.01).