

PUBLICATIONS

1978

Texas A&M University Agricultural Research and Extension Center at Overton – 1978

Forage

Beef Cattle

Soil

Research 1978 Overton

Research Center, Technical Report
No. 78-1

EFFECT OF RUMENSIN ON PERFORMANCE OF STEERS AND
HEIFERS GRAZING BERMUDAGRASS

J. L. Griffin, F. M. Rouquette, Jr., and R. D. Randel¹

SUMMARY

An equal number of half-sib ($\frac{1}{2}$ Simmental x $\frac{1}{4}$ Brahman x $\frac{1}{4}$ Hereford) steers and heifers were grazed continuously on 'Coastcross I' bermudagrass from mid-July until mid-October at a stocking rate of slightly more than 6 head/acre. All cattle received 2 lbs/hd/da of a 14% protein creep, and in addition, those calves assigned to the Rumensin group received 200 mg/hd/da of Rumensin. The average daily gain for Rumensin steers and heifers was 1.28 and 0.98 lbs/da, respectively. Steers and heifers in the control pastures gained 0.86 and 0.64 lbs/da, respectively. The Rumensin steers gained significantly more and the control heifers gained significantly less than all other groups. There was no difference in the weight gain of the control steers and the Rumensin heifers. As of the date of this printing, Rumensin has not been cleared by the FDA for use in pasture cattle, but has been cleared for use in feedlots.

Estimates of the forage:gain conversion ratio was 15:1 for those calves that received Rumensin and 19:1 for those calves that were in the control group. This difference in forage intake proved to be a 20% advantage in favor of the Rumensin cattle.

OBJECTIVES

The objectives of this pasture trial were to determine the effect of 200 mg/hd/da of Rumensin on rate of gain of both steers and heifers grazing bermudagrass during the summer months; and to estimate the influence of Rumensin on forage disappearance by calves.

¹Graduate research assistant; associate professor, forage physiology, Overton; associate professor, animal reproductive physiology, Overton, respectively.

PROCEDURE

Fall-born half-siblings were weaned at approximately 270 days of age and 550 pounds and assigned to either a Rumensin or control group. The 8 steers and 8 heifers assigned to the Rumensin group received 2 lbs/hd/da of a 14% protein creep plus 200 mg/hd/da of Rumensin. The same number of cattle assigned to the control group received only the daily allocation of creep feed. All groups were grazed continuously on a pasture that consisted of approximately 80% 'Coastcross I' and 20% common bermudagrass. The stocking rate was 6.2 calves per acre. Calves were weighed at 21-day intervals throughout the trial.

On 14-day intervals, each pasture was sampled for a nutritive value analyses, an estimate of forage availability, and an estimate of total forage production. The cage difference technique was used to estimate forage disappearance and forage was collected by hand-clipping to ground level.

RESULTS

Steer calves that received 200 mg/hd/da Rumensin had the highest average daily gain (ADG) (Table 1). By multiplying this ADG, 1.28, by the stocking rate, 6.2, the resulting gain per acre was 675 pounds. Thus, if projections were to be made for the entire summer, steer performance from this type pasture-supplement system would approach 1400 pounds of liveweight gain per acre. There was no statistical difference in the gain of Rumensin heifers and control steers. The control heifers, however, gained at a slower rate than any group in the test.

Forage availability was maintained at approximately 4000 lbs/ac on both groups and did not limit animal performance. Forage production and estimates of forage disappearance are shown in Table 2. In calculating forage:gain ratios for control vs Rumensin calves, those cattle which received Rumensin required 4 pounds less forage per pound of liveweight gain. The resulting efficiency of beef production from Rumensin, therefore, was approximately 20%. Data from this Center as well as other locations have indicated that Rumensin may have its greatest impact when fed in combination with high fiber, low quality roughages.

Table 1. Gain per calf and per acre of calves grazing 'Coastcross I' bermudagrass and receiving supplemental feed.

GROUP	HEIFERS		STEERS		AVG	
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac
Rumensin	0.98 ^b	516	1.28 ^a	675	1.13	596
Control	0.76 ^c	401	1.08 ^b	569	.92	485
AVG	0.87	459	1.18	622		

^{abc} Means with similar supercripts do not differ significantly at the 0.05 level of probability.

Table 2. Estimated forage production and disappearance, animal gain, and forage:gain ratios.

ITEM	CONTROL	RUMENSIN
	(lbs/acre)	
Forage Production	11,239	11,128
Forage Disappearance	9,271	9,063
Animal Gain	485	596
Forage:Gain	19:1	15:1