

# **PUBLICATIONS**

**1980**

FORAGE AND BEEF CATTLE RESEARCH

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**1980 - Overton**

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

Texas Agricultural Experiment Station

Overton, Texas

RESEARCH CENTER

May 12, 1980

TECHNICAL REPORT NO. 80-1

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## USE OF RUMENSIN AND SUPPLEMENTAL FEED ON GAIN OF STEERS GRAZING BERMUDAGRASS

F. M. Rouquette, Jr.

### SUMMARY

Fall-born Charolais and Brangus crossbred steers were grazed on bermudagrass, immediately at weaning, from July 25 to September 26 at a stocking rate of 2.9 calves (1653 lbs) per acre. Two groups of 8 steers each were assigned to the following treatments: (1) pasture only; (2) pasture + 2 lbs/hd/da of 14% creep feed; and (3) pasture + 2 lbs creep feed + 200 mg/hd/da Rumensin. The pasture only and pasture + creep feed steers gained 1.00 and 1.03 lbs/hd/da, respectively. The Rumensin-supplemented steers, however, gained 1.49 lbs/hd/da, or a 45% improvement in animal performance. Estimates of forage:gain ratios showed a similar pattern for steers assigned to pasture only and pasture + feed with 20:1 and 19:1, respectively. Steers which received Rumensin in their diet had forage:gain ratios of 13:1.

### OBJECTIVES

The objectives of this grazing trial were to determine the effect of 2 pounds per head per day of a 14% creep feed, fed with 0 and 200 mg Rumensin, vs non-feed weanling steers; and to estimate the forage:gain ratios from each group.

### PROCEDURE

Forty-eight fall-born steers, weaned at approximately 265 days of age in mid-July and weighing an average of 570 pounds, were used in this study. The steers were from a herd of F-1 (Brahman x Hereford) cows and sired by either a Charolais or Brangus bull. Three 1/2 Charolais and five 1/2 Brangus steers were randomly assigned to each of 6 replicate groups. Two replicate groups were then randomly assigned to the following three treatments: (1) pasture only; (2) pasture plus 2 lbs/hd/da of a 14% protein creep feed; (3) pasture plus 2 lbs/hd/da of a 14% protein creep feed plus 200 mg/hd/da Rumensin. All steers were weighed at initiation of the trial (July 25) and at 21-day intervals thereafter during the 63-day grazing period. At the end of each 21-day period, all groups were rotated to a different paddock.

The stocking rate in each 2.75 acre paddock was 2.9 calves per acre.

On 21-day intervals, forage from each paddock was sampled for subsequent chemical analyses. Forage available dry matter was sampled at the beginning and end of each 21-day grazing period to provide an estimate of forage disappearance. These data were then used to estimate forage:gain ratios of each group.

### RESULTS

The average daily gain (ADG) of each replicate group as well as the average live weight gain per acre are shown in Table 1. The Rumensin-fed steers gained approximately one-half pound/day more than the other two groups. This additional gain represented a 45% improvement in animal performance. Two pounds/head/day of a 14% protein creep feed did not increase steer live weight gain over that of the pasture only steers.

Tables 2 and 3 show the nutritive characteristics and forage availability, respectively, from the treatment paddocks. Because of the similarities in the paddocks, steer gain differences are clearly due to the addition of Rumensin to the diet rather than pasture to pasture variations.

Estimates of forage:gain ratios from the three treatment groups are presented in Table 4. In this trial, Rumensin not only increased ADG by 45%, but also improved the forage:gain ratio.

Table 1. Average daily gain (ADG) of steers grazing bermudagrass with and without supplemental feed and with Rumensin.

Treatment Group	July 25 to September 26			Gain/Acre (lbs)
	ADG (lbs)			
	Group I	Group II	AVG	
Pasture Only	0.92	1.08	1.00 <sup>a</sup>	183 <sup>a</sup>
Pasture + Feed	0.98	1.07	1.03 <sup>a</sup>	188 <sup>a</sup>
Pasture + Feed + Rumensin	1.51	1.47	1.49 <sup>b</sup>	272 <sup>b</sup>

<sup>ab</sup> Means with similar superscripts in the same column do not differ significantly at the 0.05 level of probability.

Table 2. Percent Protein, Neutral Detergent Fiber (NDF), and In vitro Digestion of NDF (IVDADF) of Forage in Bermudagrass Paddocks

Date	Protein (%)			NDF (%)			IVDADF (%)			
	P <sup>a</sup>	PF <sup>b</sup>	PFR <sup>c</sup>	P	PF	PFR	P	PF	PFR	AVG
July 25	12.0	12.8	12.0	70.4	70.1	70.7	54.4	50.5	51.1	52.0
Aug. 15	14.3	14.8	14.4	71.4	70.4	69.0	51.5	54.6	54.3	53.5
Sept. 5	18.1	17.3	16.2	68.6	68.1	69.3	57.4	57.8	55.2	56.8
Sept. 26	17.1	17.2	16.7	66.4	69.9	69.6	57.0	57.0	54.0	56.0
AVG	15.4	15.5	14.8	69.2	69.6	69.7	55.1	55.0	53.7	

<sup>a</sup>Pasture only

<sup>b</sup>Pasture + feed

<sup>c</sup>Pasture + feed + Rumensin

Table 3. Forage dry matter available above a 2-inch height in bermudagrass paddocks.

Date	Pasture Only	Pasture + Feed	Pasture + Feed + Rumensin	AVG
	(lbs/ac)			
July 25	1549	1204	1386	1380
Aug. 15	1365	1568	933	1289
Sept. 5	895	746	409	683
Sept. 26	521	304	767	531
AVG	1083	956	874	

Table 4. Estimated forage:gain ratios from treatment groups.

Treatment Groups	Forage:Gain (lbs)
Pasture Only	20 : 1
Pasture + Feed	19 : 1
Pasture + Feed + Rumensin	13 : 1