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Evaluation of Rumensin® in late season, salt-limited, protein supplements fed to grazing steers and heifers

Abstract

Even though an average daily Rumensin® consumption of over 100 mg per was achieved in all three trials, it did not significantly improve daily gains of steers or heifers grazing late-season native range. Late-season protein supplementation improved average daily gain by over .2 lb per head.

Keywords

Cattlemen's Day, 1986; Kansas Agricultural Experiment Station contribution; no. 86-320-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 494; Beef; Rumensin®; Protein; Salt

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Evaluation of Rumensin® in Late Season, Salt-Limited, Protein Supplements Fed to Grazing Steers and Heifers^{1,2}

SLarry R. Corah and Frank K. Brazle³**U**

Summary

Even though an average daily Rumensin® consumption of over 100 mg per was achieved in all three trials, it did not significantly improve daily gains of steers or heifers grazing late-season native range. Late-season protein supplementation improved average daily gain by over .2 lb per head.

Introduction

Research has consistently shown that adding Rumensin® to a hand-fed supplement on grass will improve stocker gains by .15 to .2 lb daily. But, the concept has not been well accepted by producers because of the difficulty of feeding Rumensin®. Most producers would prefer some method of self feeding. These trials were designed to evaluate the use of free-choice, salt-limited, supplements as a method of supplying Rumensin®.

Experimental Procedures

Three trials were conducted with cooperating producers in 1985, involving late-season protein supplementation of grazing cattle. All of the trials were conducted on native range with the cattle rotated every 25-40 days to eliminate pasture effects. The trials ran 90 to 120 days with the trials starting in late July-early August. Cattle were weighed individually at the start and end of the trials.

The cattle were fed supplements consisting of 68-85% soybean meal, and 2% dicalcium phosphate, with the remainder being salt. The salt content was adjusted to achieve the desired 1 to 1 1/4 lb consumption of supplement per head daily. Rumensin® was added at the rate of 100 mg/lb to one of the supplements.

¹Rumensin® is a feed additive developed and marketed by Elanco Products Co., Division of Eli Lilly Co. Appreciation is expressed to Elanco for partial funding of this project.

²Appreciation is expressed to cooperating producers: Jack and Alan Grothusen, Ellsworth; Kimbell Ranch, Yates Center; Buck Gehrt, Manhattan; Eugene Beachner, St. Paul; David Holbrook, Washington; and Bill McLaughlin, Chapman; and to Kirk Roe, Ellsworth County Agricultural Agent for his assistance.

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Trial 1

One hundred forty-nine crossbred heifers were randomly allotted to three treatments: 1) control - no supplementation other than salt, 2) salt-limited protein supplement, and 3) salt-limited protein supplement plus Rumensin®. The supplements were fed free-choice in large self-feeders for the 106-day trial.

Trial 2

Fifty-eight crossbred steers were randomly allotted to two treatments: 1) salt-limited protein supplement, or 2) salt-limited protein supplement plus Rumensin®. The supplements were fed in wind-vane mineral feeders for the 91-day trial.

Trial 3

Sixty-three fall-born, crossbred heifers were allotted following late summer weaning to two treatments: 1) salt-limited protein supplement, or 2) salt-limited protein supplement plus Rumensin®. Supplements were fed in wind-vane feeders for the 114-day trial.

Results and Discussion

In trial 1, the use of a late-season protein supplement, with or without Rumensin®, improved gain by 25 and 21 lb, respectively (Table 30.1). The amount of supplement required for each additional lb of gain was 5.1 and 6.25 lb for the two respective treatments. When Rumensin® was added to the supplement, the salt level in the supplement was reduced by 7.5 percent. Although average daily Rumensin® intake was 138 mg per head, it had no effect on gain.

Table 30.1. Effect of Late-Season Protein and Rumensin® Supplementation on Performance of Grazing Heifers—Trial 1

Treatment	No. Heifers	Starting Wt., lb	Avg. Daily Gain, lb	Avg. Daily Supplement Intake, lb	Avg. % Salt In Suppl.	Avg. Daily Rumensin Intake, mg
Control-No Supplement	49	605.0	.89 ^a	—	—	—
Salt-Limited Supplement	50	596.8	1.12 ^b	1.18	20.0	—
Salt-Limited Supplement + Rumensin®	50	601.8	1.09 ^b	1.25	12.5	138

^{a,b} Means with varying superscripts are significantly different (P<.05).

In trials 2 and 3, adding Rumensin® to the supplement had no effect on average daily gain. Rumensin® reduced the salt level needed by 5-6% to achieve daily supplement intakes of 1 to 1 1/4 lb per head.

The fact that Rumensin® did not improve gain does not completely agree with other research results that have evaluated the inclusion of Rumensin in self-fed supplements. A few studies have shown no response to Rumensin® in self-fed supplements, but most have been positive. We do not have an explanation as to why so little response was noted in our three trials.

Table 30.2. Effect of Rumensin® in Late-Season, Salt-Limited, Protein Supplements on Performance of Grazing Steers and Heifers

Treatment	No. Head	Starting Wt., lb	Daily Gain, lb	Avg. Daily Supplement Intake, lb	Avg. % Salt In Suppl.	Avg. Daily Rumensin® Intake, mg
<u>Trial 2 with Steers:</u>						
Salt-Limited Supplement	32	780.6	.88	1.18	27.4	—
Salt-Limited Supplement + Rumensin®	26	743.8	.95	1.18	22.8	118
<u>Trial 3 with Heifers:</u>						
Salt-Limited Supplement	32	514.8	1.02	1.25	19.1	—
Salt-Limited Supplement + Rumensin®	31	531.6	1.08	1.14	12.5	114