

**RUMENSIN WITH AND WITHOUT  
SARSAPONIN FOR FINISHING  
FEEDLOT STEERS  
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SUMMARY

A combination feeding of sarsaponin and Rumensin improved gains 6.0 percent and feed efficiency by the same magnitude as compared to the steers that were fed Rumensin alone. Sarsaponin was fed at the rate of 30 parts per million and Rumensin at the rate of 30 grams per ton complete ration.

INTRODUCTION

Results of the Sarsaponin-Rumensin Feeding Test, Trail I demonstrated that sarsaponin fed in conjunction with Rumensin resulted in a greater improvement in feedlot performance than either sarsaponin or Rumensin fed alone.

OBJECTIVES

Rumensin already is being used by most of the commercial feeding industry. Therefore, the current-study reconfirms the previous results where sarsaponin was shown to give additional benefits in average daily gain and feed efficiency in feedlot cattle already receiving rations containing Rumensin.

PROCEDURE

One hundred twenty Angus and Angus-Hereford crossbred steers with an average weight of 692 pounds were assigned to two treatment groups with two 30 head pen-replications per treatment as follows: Rumensin fed at 30 grams per ton; and Rumensin at 30 grams per ton plus 30 parts per million sarsaponin. In contrast to the first study, these cattle had been backgrounded in the Colorado State University feedlot, and, therefore, the pre-trial status of the cattle was considered in allotting the animals to the two treatments.

The steers were weighed, processed and implanted with Synovex-S immediately prior to the start of the experiment.

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The starting ration consisted of a 40 percent concentrate, 60 percent roughage mixture that included Aureomycin at 70 milligrams per head per day. From this starting ration, the cattle were increased to a 90 percent concentrate ration in approximately five weeks. Composition of the average daily ration consumed during the entire feeding period is given in table 1. After 60 days on feed, intermediate weights were taken on the steers and a mid-term performance calculation was made. Due to below-average feed intakes and gains associated with weather conditions and other factors, the ration concentrate level was reduced to 80 percent and fed at this level for the balance of the 128 day feeding period.

At the end of the trial, the cattle were weighed after withholding feed and water for 16 to 18 hours and subsequently slaughtered. Feedlot performance and carcass measurements were determined, and the data were statistically analyzed using least-squares analysis of covariance with initial weight as a covariant according to overall and Spiegel (1969).

#### RESULTS AND DISCUSSION

Average daily gain, average daily feed consumption and feed efficiency are presented for the two treatments in table 1.

When compared to the Rumensin group, the steers fed the sarsaponin-Rumensin combination gained 6.0 percent faster and converted feed to gain 6.5 percent more efficiently (table 1). Both of these results were found to be statistically significant at the ( $P < .05$ ) level. In absolute terms this amounted to an additional 20 pounds of weight gain and approximately 170 pounds less feed per steer.

Feed consumed per head per day was not different ( $P > .05$ ) for the Rumensin alone versus sarsaponin plus Rumensin fed steers. However, the steers fed the sarsaponin-Rumensin combination tended to consume more feed during the early stages of the feeding period, (grain adaptation period) and then consumed less feed when fed the final finishing ration.

Carcass data for the cattle in this experiment are presented in table 1.

Marbling scores tended to be lower (5.5 versus 5.9) for the steers fed the

Table 1. Feedlot Performance and Carcass Data.

TREATMENT	30 g/ton Rumensin	30 g/ton Rumensin + 30 ppm Sarsaponin <sup>1</sup>
No. Steers	60.00	60.00
Initial Weight, lbs.	697.00	687.00
Final Weight, lbs. <sup>2</sup>	1027.00	1037.00
Total Gain, lbs.	330.00	350.00
ADG	2.58	2.73
Average Daily Ration, lbs. (air dry basis):		
Flaked Corn	13.43	13.33
Beet Pulp	1.76	1.74
Protein Supplement	1.19	1.18
Corn Silage	3.45	3.45
Alfalfa Hay	1.32	1.30
Salt	0.04	0.04
Total	21.19	21.04
Feed/Cwt. Gain	8.21	7.71
Dressing %	64.86	64.61
Livers condemned, %	8.33	11.67
Marbling <sup>3</sup>	5.90	5.50
Fat	0.57	0.52
REA	11.60	11.80
USDA Yield	3.30	3.10
% Cutability		

<sup>a,b</sup> Means with different superscripts differ ( $P < .05$ ).

<sup>1</sup> Expressed on an active ingredient basis.

<sup>2</sup> Final weight = 1.45 (carcass weight) + 70.

<sup>3</sup> 5=small; 6=modest.

combination of sarsaponin and Rumensin. Backfat thickness was significantly lower for the cattle fed sarsaponin ( $P < .05$ ) while ribeye area was greater ( $P < .05$ ). This lower backfat thickness and greater ribeye area in the sarsaponin fed steers resulted in USDA yield grades of 3.1 versus 3.3 for the controls. These results suggest that cattle fed 30 parts per million sarsaponin tended to deposited less fat and more lean during the course of the feeding period.

Dressing percent and percent liver abscesses were not different ( $P > .05$ ) for the two treatments.

This trial's results, as well as those from the previous study, indicate that sarsaponin can cause significant improvements in economically desirable traits including gains, feed conversion and in some of the carcass characteristics in feedlot cattle. These improvements are obtained when Rumensin already is being included in the feeding program.