

A Comparison of Rumensin and Bovatec Fed in Wintering Rations to Beef Calves

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One million eighty three thousand cattle and calves were marketed in North Dakota in 1984, according to Carver and Hamlin (1985). Feed additives that improve rate of gain and/or feed efficiency have a positive effect on the economics of the livestock industry. Currently, two ionophores, Rumensin (monensin sodium) and Bovatec (lasalocid sodium), are reported to improve feed efficiency and, in some cases, rate of gain as well.

Review of research at the Dickinson Branch Station shows steers fed Rumensin or implanted with Ralgro or a combination of the two gained faster on less feed. When Rumensin was fed, 6 percent to 12 percent less feed per pound of gain was required in two out of three years. The combination of Rumensin and Ralgro resulted in a 13.7 percent saving in feed needed per pound of gain. In this study there was no apparent improvement in rate of gain from the feeding of Rumensin (Nelson and Landblom, 1979).

Rumensin and Compudose, a growth promotant implant, were evaluated under pasture and feedlot conditions by Dinusson and co-workers (1981). In phase one, yearling steers grazed native range for 112 days at the Central Grasslands Station. Steers fed Rumensin gained 6.5 percent faster, while those implanted with Compudose gained 15 percent faster than nonimplanted controls. Under feedlot conditions in phase two, Rumensin-fed steers required 6.4 percent less feed per pound of gain and gained 0.21 pounds per day faster. However, the gain advantage was not considered significant due to variation between treatment groups.

In feeding studies with steers, Spears and Harvey (1982) found that Bovatec significantly improved daily gains and lowered ruminal acetate levels. Lomas (1982) evaluated feeding levels of Bovatec and found that 100 mg. per head increased rate of gain by 16.4 percent, and at 200 mg. per head, weight gains were increased by 23.9 percent. Investigation by Embry and co-workers (1982) recorded weight gain improvement of about 16 percent and also reported that the cattle required 13 percent less feed per pound of gain.

While research has shown both Bovatec and Rumensin to be very useful feed additives in backgrounding and

finishing diets, there is limited research available comparing the two products under similar feeding and environmental conditions, particularly those in southwestern North Dakota. In addition, economics have not been applied in comparisons to show which product provides the greatest dollar return on investment.

To compare Bovatec and Rumensin when fed separately and in conjunction with the 200-day growth implant Compudose, Hereford and Angus \times Hereford (BWF) steer calves were allotted by weight class into three lots of heavy weight BWF steers, three lots of lightweight BWF steers and three lots of lightweight Hereford steers, with six steers per lot.

Three steers in each lot were implanted with Compudose according to recommended procedure.

Also, during initial processing, all steers were given a 7-way Clostridium booster vaccination, wormed with Rumatel and treated for lice with Lysoff pour-on.

All steers were self-fed a complete mixed ration containing alfalfa, alfalfa-brome mixed hay, barley, trace mineral salt and a supplement containing either Rumensin or Bovatec. A detailed description of the rations used is shown in table 1.

The steers were on feed a total of 109 days. At the close of the trial, the steers were weighed on two consecutive days with the average weight calculated as the final weight. The steers were sold through the local livestock auction market. An average selling price of \$61.70 was used to calculate economic returns.

Summary

Results of this investigation comparing the feeding value of Rumensin and Bovatec concur with the literature as far as improvement in feed efficiency is concerned. Both products significantly reduced the feed required to put on a pound of gain. Although some researchers have reported substantial improvements in rate of gain as well as feed efficiency, there was no measurable improvement in rate of gain in this study. A trend toward better gains was observed, but the differences were too small and too variable to be considered significant.

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Table 1. Composition of rations fed to control steers and those supplemented with either Bovatec or Rumensin.

Ingredients	Control		Bovatec		Rumensin	
	Starting Ration	Growing Ration	Starting Ration	Growing Ration	Starting Ration	Growing Ration
Barley, lbs.	250	430	250	430	250	440
Mixed hay, lbs.	600	400	600	400	600	400
Alfalfa, lbs.	93	93	93	93	93	93
Supplement, lbs.	50	70	50 ¹	70 ³	50 ²	60 ⁴
Trace mineral salt, lbs.	5	5	5	5	5	5
Dicalcium Phosphate, lbs.	2	2	2	2	2	2

¹Supplement supplied 12.5 mgs. of Bovatec per pound of finished feed.

²Supplement supplied 10.0 mgs. of Rumensin per pound of finished feed.

³Supplement supplied 17.8 mgs. of Bovatec per pound of finished feed.

⁴Supplement supplied 12.0 mgs. of Rumensin per pound of finished feed.

Feed efficiency improvement was greatest among steers receiving Rumensin. These steers required 10.86 percent less feed per pound of gain. Steers fed Bovatec, while very efficient, consumed slightly more feed per pound of gain. Compared to controls, Bovatec fed steers required 9.13 percent less feed per pound of gain. In net dollars, Rumensin returned \$6.90 more than Bovatec.

Bloat control is one of the attributes that ionophore type compounds like Rumensin and Bovatec are noted for. Since we did not encounter bloat among any of the trial calves, this aspect was not tested.

The long term effect of Compudose was not evaluated since it is designed to last 200 days and this trial was terminated after 109 days of feeding. During the time the implant was used, the effect on rate of gain was excellent. Steers implanted with Compudose returned \$9.34 for every dollar invested in the implant.

Results of this investigation indicate that North Dakota cattle feeders will gain an advantage by feeding either of the feed additives Rumensin or Bovatec and by implanting their feedlot cattle with growth promotants such as Compudose.

Literature Cited

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Table 2. Heavy weight Angus x Hereford (BWF) steers.

	Bovatec	Control	Rumensin
No. head	6	6	6
Days fed	109	109	109
Initial wt., lbs.	565.8	567.5	567.5
Final wt., lbs.	876.7	862.9	883.3
Gain, lbs.	310.8	295.4	315.8
ADG, lbs.	2.85	2.71	2.89
Feed Summary			
Feed/lb. of gain	8.02	9.07	7.70
Feed savings, %	11.5	0.0	15.1
Feeding Economics			
Feed cost/lb., \$.0439	.0428	.0432
Feed cost/steer, \$	109.44	114.79	105.06
Feed cost/cwt. gain, \$	35.21	38.86	33.26
Steer value/hd., \$	540.9	532.40	545.01
Return over feed, \$	431.46	417.61	439.95
Advantage over control, \$	13.85	0	22.34

Table 3. Light weight Angus x Hereford (BWF) steers.

	Bovatec	Control	Rumensin
No. head	6	6	6
Days fed	109	109	109
Initial wt., lbs.	496.7	497.5	500.0
Final wt., lbs.	798.3	778.8	810.4
Gain, lbs.	301.7	281.2	310.4
ADG, lbs.	2.77	2.58	2.85
Feed Summary			
Feed/lb. of gain	7.51	8.30	7.28
Feed savings, %	9.5	0	12.2
Feeding Economics			
Feed cost/lb., \$.0438	.0427	.0431
Feed cost/steer, \$	99.24	99.80	97.55
Feed cost/cwt. gain, \$	32.90	35.48	31.42
Steer value/hd., \$	492.55	480.52	500.02
Return over feed, \$	393.31	380.72	402.47
Advantage over control, \$	13.09	0	21.75