Compudose, Rumensin and Supplement for Grazing Yearlings –

Effect of Previous Pasture Treatments on Subsequent Feed Lot Gains and Efficiency

W.E. Dinusson[1], J.L. Nelson[2],

D.G.Landblom[2] and Barbara E. Straw[3]

Introduction:

When different treatments or management practices are used on pasture, it is desirable to ascertain if any of these treatments would have an effect on subsequent gains and performance during finishing in the feed lot. To investigate this possibility, steers from a grazing experiment conducted at the Central Grasslands Station were trucked to the Dickinson Experiment Station for the final finishing phase.

Experimental Procedure:

At the conclusion of the pasture phase following the final weighing at the Central Grasslands Station, 118 yearling steers were loaded and trucked to the Dickinson Experiment Station. Upon arrival in the late afternoon, the steers were given a feeding of hay and allowed to rest. The following morning they were vaccinated with a seven way Clostridium-Bacterin, implanted with 36 mg Ralgro and re-allotted at random within previous treatment and weight groups to 12 lots. The steers from the two replicate pasture treatments were pooled and re-allotted into four pens. Thus the twenty (or nineteen) steers in each pasture treatment were in two lots of 10 steers (or 9) to receive either Rumensin or none. One half of the 12 lots received Rumensin and half did not. All cattle were started on rations of 68 percent chopped mixed hay, 20 percent dry rolled corn, 4.8 percent soybean oil meal and 7 percent limestone, di-calcium phosphate and salt for about two weeks. Rumensin was mixed with corn and included in rations for half of the lots. During the first two weeks a level of 10 grams Rumensin per ton of pre-mixed ration was used. The Rumensin then increased to 20 grams per ton for four weeks and finally increased to 30 grams per ton for the remainder of the trial. These levels approximate 100, 200, and 300 mg per steer per day.

The corn was increased and hay decreased until corn formed about 80 percent of the ration after 30 days on feed. The concentrate to hay ratio was 72:28 for the entire feeding period.

All steers were individually weighed at 28-day intervals with two consecutive day weighings for the final weight. The steers were removed and sent to slaughter in three groups as they reached low choice grade or 1100 pounds. Complete carcass data was obtained. Statistical analyses were used to assist in interpretation of data.

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[1] Animal Science Department, NDSU
[2] Dickinson Experiment Station
[3] Lilly Research Laboratories, Greenfield, Indiana
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Results and Discussion:

The cattle receiving Rumensin gained an average of 3.05 pounds per day as compared to 2.84 pounds for those steers which did not receive Rumensin (Table 1).

Table 1. Rumensin vs. None in Feed Lot

	Average Daily Gain lbs	% Improvement Over Control	Feed Dry Matter Per lb of Gain	% Improvement Over Control
No Rumensin (57 steers)	2.84	-	8.17	-
Rumensin (59 steers)	3.05	6.89%	7.65	6.36%

Although this was a difference of 6.89% faster for the Rumensin treated cattle, it was not statistically significant because of variation within treatment groups. The steers receiving Rumensin required 6.36% less feed per pound of gain (7.65 pounds of dry matter compared to 8.17 pounds). To convert these dry matter values to a ″as fed″ basis, increase by about 10%. The average daily dry matter intakes were 23.33 pounds for those fed Rumensin vs. 23.20 for the steers not receiving Rumensin. Thus, Rumensin did not reduce daily feed intake. This was not expected with such high energy rations.

Two steers died during the finishing phase. One died within 12 days after starting on feed from enterotoxemia and a second steer died after 38 days on feed from becoming caught under a division fence. These two steers were removed from the data and were not included in these summaries.

One of the objectives of this experiment was to measure ″carry-over″ effects, that is, whether previous pasture treatments had any effect on feed lot performance. The use of Compudose implants on the pasture phase did not affect the subsequent gains in the feed lot. The gains averaged 2.99 pounds per day for the steers which had the Compudose compared to 3.08 pounds for those that did not. Of course, all steers in the feed lot were implanted with Ralgro.

Table 2 gives a summary of the steers by main pasture treatments and subsequent performance in the feed lot. There were no statistical differences in gains or feed efficiencies. Therefore, there were no ″carry-over″ effects of the pasture treatments.

If the steers are regrouped as was done in Table 2 of the previous paper pasture summary, this further substantiates the lack of ″carry over″ effect. This summary is presented in Table 3.

There were no measured differences in carcass characteristics between cattle which had received Rumensin and those which had not, nor between cattle from the different pasture treatments. The average quality grade was low choice and the yield grade was 2.7 for the steers which had not received Rumensin in the feed lot vs. an average choice quality grade and a yield grade of 2.8 for the steers receiving Rumensin.

The percent of abscessed livers in cattle receiving Rumensin in the feed lot was more than twice that of the steers which did not receive Rumensin in the feed lot (17 vs. 7%). However, there were no abscessed livers in the cattle that received Rumensin both on pasture in the feed lot. Explanations as to this observation await further research.

Pasture and Feed Lot Combined:

Combing the gain data from both the pasture and feed lot phase permits a summary of the 112 days during the pasture phase and 112-day feed lot phase. (The time the steers were in the feed lot varied from 93 days to 145 days for an average of 112 days).

The 57 steers that had received Compudose implants on pasture gained an average of 2.46 pounds per day; whereas, the steers without Compudose gained 2.38 lbs or 3.4% less. This is entirely due to the effect of Compudose on the pasture phase because the Compudose implants were removed at the end of the pasture period and all steers were implanted with Ralgro at the beginning of the feed lot phase.

Grouping by pasture treatment, the 39 control steers gained an average of 2.32 pounds per day for the entire two phase experiment. The 38 steers receiving only supplement gained 2.47 pounds and the 39 steers receiving Rumensin in the pasture supplement also gained 2.47 pounds per day. Both pasture supplemented lots gained 6.5% faster than the control.

Table 2. Effect of Previous Pasture Treatments on Feed Lot Performance

Pasture Treatment	Initial Wt. lbs.	Final Wt. lbs.	Avg. Daily Gain lbs.	% Charge	Feed DM/ lb. Gain	% Charge
Control- No Supp., No Rumensin (39 steers)	711	1043	2.93	-	7.83	-
2 lbs. Supp. No Rumensin (38 steers)	744	1075	3.03	+3.4	7.84	+0.1
2 lbs. Supp. 200 mg. Rumensin (39 steers)	757	1062	2.92	-0.4	7.99	+2.0

Table 3. Effect of Rumensin, Compudose and Supplement

Pasture Treatments on Feed Lot Gains

Compudose	Rumensin	Supplement	No. Animals	Average Daily Gain	Control = 100%
0	0	0	19	3.09	100
0	0	+	20	3.09	100
0	+	+	20	3.06	99
+	0	0	20	2.99	97
+	0	+	18	3.09	100
+	+	+	19	2.89	96

If the steer gains are regrouped as was done in Table 2 in the previous paper and in Table 3, performance can be measured for both pasture and feed lot phases. Table 4 presents such a summary. All the pasture treatments showed improvement for total gains ranging from 3 to 9% increase over the negative pasture control. All these increases are the results of the differences of gains on pasture because there were no ˝carry-over˝ effects of pasture treatment on the feed lot gains. For example, using Compudose, Rumensin and Supplement increased average gain per steer for the 19 head by about 45 pounds over those that received only pasture in Phase One. These same steers had gained about 68 pounds more on pasture and 23 pounds less in the feed lot phase, but still maintained a 45 pound advantage for the combined pasture and feed lot performance.

Table 4. Effect of Rumensin, Compudose, and Supplement Pasture Treatments

On Combined Pasture and Feed Lot Gains

Compudose	Rumensin	Supplement	No. Animals	Average Daily Gain	Control = 100%
0	0	0	19	2.29	100
0	0	+	20	2.41	105.2
0	+	+	20	2.45	107
+	0	0	20	2.36	103.1
+	0	+	18	2.47	107.9
+	+	+	19	2.50	109.2