

Using Rumensin® in Rations For Wintering Replacement Heifer Calves

D. G. Landblom and J.L. Nelson

Developing a heifer calf to become a producing unit is an expensive venture. The largest portion of the expense is incurred for feed and maintenance. Since feed makes up a large portion of the expense of raising a replacement heifer, anything that will reduce the cost of feed without affecting growth or reproductive performance needs to be included in the overall management system.

The feed additive Rumensin® (monensin sodium), has been shown to be effective in reducing feed intake by 6-10% without affecting gains under feedlot conditions. Steer feeding trials conducted at this Station and reported in the 28th, 29th and 33rd Annual Livestock Research Roundup Bulletins show a strong advantage in feed savings and feed cost when Rumensin® was fed for maximum gains at levels of from 150-300 mg. per head per day. In addition, numerous research reports from University testing across this country and industry acceptance have shown both a savings of feed and cost advantage when Rumensin® was fed. One area that hasn't been as widely studied is the use of Rumensin® in classes of cattle, such as replacement heifers, which aren't being fed necessarily for maximum gains. There is some research that shows an advantage for earlier conception rate and earlier calving resulting in more time for the first calf heifer to return to regular cyclicity after calving with her first calf.

This investigation, which began with replacement type Angus and Hereford heifer calves in December 1981, has been conducted for 3 consecutive wintering periods: 1982, 1983, and 1984. Data collected to date also includes two calving periods with the last calving period in the spring of 1985 to complete data collection for this investigation.

Replacement type Angus X Hereford crossbred heifers weighing 500 lbs. were allotted to one of four experimental lots. Two lots received 150-250 mg. Rumensin® per day and two lots served as controls. Rumensin® was adjusted in the ration as daily feed consumption changed throughout the study. GTA's Beef Mix 600® was used as the supplement.

Just before the start of the experiment all heifers were booster vaccinated with a 7-way Clostridium Vaccine and wormed with Rumatel®.

Rations fed were complete mixed formulations that were adjusted in accordance with weight gains desired and winter conditions.

Onset of puberty was identified by placing sterile epididectomized yearling marker bulls in each lot. Heifers marked were recorded daily. In June of each year the heifers were randomly divided and used in an estrus synchronization study reported elsewhere in this progress report.

Summary:

Results of this investigation to date have not shown the strong advantage for Rumensin[®] when fed to replacement heifers that has been shown in other studies with heifers and with steers fed for maximum gains.

There was really no difference in daily gain, which was as expected because feed energy level was controlled to obtain a particular growth rate. Doing so resulted in a 4.2% improvement in feed efficiency in favor of the Rumensin[®] fed heifers. While there was an improvement in feed efficiency, the improvement was not great enough to offset the added ration expense.

Onset of puberty was slightly earlier among the Rumensin[®] fed heifers but the improvement was not a significant one. Analysis of calving data clearly shows no difference in the number of heifers conceiving by artificial insemination and the number of open females following a short 45-50 day breeding season.

Two year average calving date differed by only 2 days and favored the Rumensin[®] fed heifers.

Based on these data, and under conditions where gains are limited by energy level, including Rumensin[®] is of limited value. Two attributes of Rumensin[®] that must not be overlooked, however, are its value as a coccidiostat and bloat preventative.

Table 1. Calving Summary of 1st Calf Heifers Wintered Following Weaning as Calves With or Without Rumensin[®]

	Rumensin [®]		Control	
	1982	1983	1982	1983
No. Head	34	24	34	24
No. having calves	27	21	28	21
No. open in fall-sold	7	3	5	3
No. AI sired calves	20	15	20	16
No. Nat. sired calves	7	6	8	5
Average calf birth wt.	77.4	88.3	83.4	85.6
Average birth date	Mar. 18	Mar. 29	Mar. 24	Mar. 26
Combined average birth weight	82.8		84.5	
Combined average birth date	Mar. 24	<u>1/</u>	Mar. 26	<u>1/</u>

1/ Rounded to nearest day.

Table 2. Time of First Estrus among Replacement Heifers Wintered With and Without Rumensin®

Time of Detection	Rumensin®		Control	
	No. Head	%	No. Head	%
February	6	7.7	1	1.2
March	29	37.2	30	38.5
April	31	39.7	36	46.2
May	8	10.3	5	6.4
Undetected	4	5.1	6	7.7
Total	78		78	

Table 3. Three Year Average Gains and Feeding Economics for Angus X Hereford Crossbred Replacement Heifers Wintered With and Without Rumensin® Feed Additive

	Rumensin®	Control
Gains:		
No. Head	78 ^{1/}	78 ^{1/}
Initial Wt., lbs.	549.9	550.6
Final Wt., lbs.	785	781.8
Avg. Days Fed	117.0	117.0
Gain/Head, lbs.	235.1	231.2
ADG, lbs.	2.00	1.97
Feed & Economics:		
Total Feed/Head, lbs.	2337.6	2385.8
Feed/Head/Day, lbs.	19.90	20.25
Feed/Lbs. Gain, lbs.	9.88	10.31
Total Cost/Head, \$	106.96	104.03
Cost/Day, \$.9105	.8829
Cost/Cwt. Gain, \$	45.49	44.99

^{1/} Detector bulls placed in each lot, but feed and gains not confounded in this data.