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Effect of Aureomycin and Rumensin on Performance of Finishing Heifers

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Summary

We used 210 yearling Hereford heifers to evaluate the efficacy of Aureomycin¹ and Rumensin² fed alone and in combination. Each product is cleared by the FDA for use in feedlot rations as an individual feed additive, however, additional clearance must be obtained to use the two products in combination in the same ration. Aureomycin effectively controlled liver abscesses, and Rumensin improved feed efficiency by 8.7%.

Introduction

AUREOMYCIN is recognized for its ability to reduce the incidence of liver abscess in feedlot cattle. RUMENSIN has gained acceptance in feedlot rations as an additive that improves feed efficiency. Clearance from the Food and Drug Administration must be obtained before the two feed additives can legally be sold for use in the same supplement or complete feed.

Procedure

We used 210 yearling Hereford heifers in this study. They were purchased from one ranch and had been on wheat pasture as a group since the late fall of 1976 and until delivery to the beef research unit on May 8, 1977. The heifers were weighed individually and placed into either a light or heavy replicate. Heifers within each replicate were randomly allotted to 16 pens of 6 heifers per pen.

A 4 x 4 factorial design was used resulting in 16 treatments for each replicate. Aureomycin levels of 0, 70, 140, and 280 mg./head/day were factorialized across Rumensin levels of 0, 10, 20, and 30 grams per ton of complete feed. The 112-day trial began May 10 and ended August 30, 1977. Composition of the ration and supplement is shown in Table 20.1. The premixes providing the Aureomycin and Rumensin were withdrawn on the 11th day, and all heifers received a non-medicated ration until September 7, 1977, at which time they were shipped to Dugdale Packing Co., St. Joseph, Missouri. Carcass and liver data was obtained for

¹Aureomycin is registered trademark name for chlortetracycline produced by American Cyanamid Co. Aureomycin and partial financial assistance provided by American Cyanamid Co., Princeton, NJ.

²Rumensin is registered trademark name for monensin sodium produced by Elanco Products Co., Indianapolis, IN.

each heifer.

Results

The heifers averaged 557 pounds initially and 904 pounds after the 112-day feeding period. The effect of Aureomycin and Rumensin on daily gain and feed efficiency is shown in Table 20.2. Aureomycin did not significantly affect rate or efficiency of gain. Rumensin at 20 grams per ton significantly increased daily gain and all Rumensin levels were significantly more efficient than the controls.

Only one liver from the 48 heifers on the 140 mg. and one liver from the 48 heifers fed 280 mg. Aureomycin per head per day was condemned. The incidence of liver abscess is shown in Table 20.3.

More complete results of this study are available on request.

Table 20.1. Ration and supplement composition.

Ration:		Ingredient	%, as fed basis
		Cracked corn	83
		Corn silage	13
		Supplement	4
		Premix ¹	--
Supplement:			lbs. per ton of supplement
		Soybean oilmeal	1000
		Rolled milo	286
		Limestone	300
		Urea	200
		Salt	150
		Fat	30
		Dyna K	20
		Trace mineral	10
		Vitamin A	4

¹Premix was pulverized corn fortified with the appropriate levels of Aureomycin and/or Rumensin to provide the treatment levels specified in the experimental design. A total of 2 pounds of premix was fed per heifer per day.

Table 20.2. Effect of Aureomycin and Rumensin on performance of feedlot heifers.

	Aureomycin, mg./hd./day								Mean	
	0		70		140		280		ADG	Eff.
	ADG	Eff.	ADG	Eff.	ADG	Eff.	ADG	Eff.		
Rumensin gm/ton										
0	3.19	6.98	3.08	6.98	2.91	7.33	2.86	7.24	3.01 ^a	7.13 ^a
10	3.08	6.80	3.02	6.88	3.22	6.96	3.04	6.73	3.09 ^a	6.84 ^b
20	3.22	6.48	3.11	6.64	3.29	6.49	3.20	6.54	3.23 ^b	6.52 ^c
30	2.90	6.79	3.14	6.30	3.12	6.44	3.14	6.52	3.08 ^a	6.51 ^c
Mean	3.10	6.76	3.09	6.70	3.14	6.78	3.08	6.76		

^{a,b,c}Numbers in some vertical row with different superscripts differ significantly (P<.05).

Table 20.3. Effect of Aureomycin and Rumensin on incidence of liver abscess in feedlot heifers.

	No. condemned livers per treatment group of 12 heifers				Mean
	Aureomycin, mg./hd./day				
	0	70	140	280	
Rumensin gm./ton					
0	2	0	0	1	0.75
10	0	2	1	0	0.75
20	1	0	0	0	0.25
30	1	3	0	0	1.00
Mean	1	1.25	0.25	0.25	