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Abstract
Feeding supplements containing an antibiotic or ionophore improved stocker gains by .06 to .26 lb per head daily. A combination of Bovatec and Aureomycin in the mineral mixture improved (P<.08) steer gains over feeding Aureomycin alone. Mineral intake was higher than expected for the steers grazing burned, double-stocked) native grass pastures in 1987. Vaccinating steers with Piliguard at turn-out had no effect on pinkeye incidence and reduced stocker gains slightly.

Keywords
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Effect of Medicated Mineral Mixtures and a Pinkeye Vaccine on the Gain and Health of Steers Grazing Native Grass Pastures[1]

Frank Brazle[2]

Summary

Feeding supplements containing an antibiotic or ionophore improved stocker gains by .06 to .26 lb per head daily. A combination of Bovatec and Aureomycin in the mineral mixture improved (P<.08) steer gains over feeding Aureomycin alone. Mineral intake was higher than expected for the steers grazing burned, double-stocked, native grass pastures in 1987. Vaccinating steers with Piliguard at turn-out had no effect on pinkeye incidence and reduced stocker gains slightly.

Introduction

Bovatec® and Aureomycin® have been shown to improve gains of grazing cattle when added to grain-mineral mixtures. Rumensin® blocks have also been shown to increase stocker performance. The objective of this study was to compare Bovatec, Aureomycin, and a combination of Bovatec and Aureomycin in a mineral mixture on stocker performance. Bovatec and Aureomycin are not cleared at present for combination use. In addition, a pinkeye vaccine (Piliguard®) was evaluated.

Experimental Procedures

On April 23, 271 mixed-breed steers averaging 622 lbs. were weighed and randomly allotted to the following pasture supplementation: (1) salt and dicalcium phosphate; (2) salt, dicalcium phosphate, dried molasses, and Bovatec; (3) salt, dicalcium phosphate, dried molasses, and Aureomycin; (4) salt, dicalcium phosphate, dried molasses, and Aureomycin plus Bovatec; and (5) a commercial Rumensin block. The steers were intensive-early grazed (double-stocked) on burned native grass pastures until July 13 and were rotated among pastures to minimize pasture effects. They were observed weekly for incidences of watery eyes and footrot. Stocking rate was 2.37 acres per steer. Half of the steers within each pasture treatment were injected with a pinkeye vaccine (Piliguard) at the start of the trial. Steers were dusted weekly for fly control. Compositions of mineral mixtures are in Table 14.1.

Results and Discussion

Free choice supplement consumption was about 40% higher than expected for mineral mixtures and blocks. Steers eating the Bovatec plus Aureomycin mixture showed highest gains (Table 14.2). These gains, however, were not significantly

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higher than those of steers consuming the Bovatec mineral mixture or the commercial Rumensin block. Stockers consuming the Aureomycin mineral mixture showed intermediate gains, and steers on the salt plus dicalcium phosphate treatment had the lowest gains.

Steers consuming the Bovatec mineral mixture and the Rumensin block had the highest percentage of eye problems, while those fed the Bovatec plus Aureomycin mineral and the salt plus dicalcium phosphate mixture had the lowest incidences (Table 14.2).

The highest percentage of footrot occurred in steers fed the Aureomycin mineral, whereas the lowest occurred in those the fed Bovatec plus Aureomycin mineral and the salt plus dicalcium phosphate mixture. Most of the footrot and eye problems occurred in the first 20 days of the grazing period. Both of these problems may have been caused by an interaction between weather and pasture conditions. Since these conditions would have changed by the time the cattle were first rotated among pastures, it is likely that the health responses were confounded with pasture allotment. Other research has consistently shown a reduction in eye problems and footrot when an antibiotic was fed.

Table 14.3 shows the results of using the pinkeye vaccine. There was no difference in the incidence of pinkeye between the control and vaccinated steers. However, the control steers gained .10 lb per day more ($P<.07$) than the pinkeye-vaccinated steers. The steers were vaccinated on the day they went to grass. If the cattle had been vaccinated several days or weeks before turn-out, it is possible that a better outcome would have resulted.

Table 14.1. Composition of Mineral Mixtures (Per Ton) Used in Grazing Trial

Ingredient	Control Salt Dical Phosphate	Bovatec	Aureomycin	Bovatec plus Aureomycin
Dried molasses, lb	---	800	200	800
Dicalcium Phosphate, lb	500	160	300	160
Salt, lb	1480	993.5	1320	914.5
Mineral Oil, lb	20	20	20	20
Aureomycin (50 g/lb), lb	---	---	---	---
Bovatec (68 g/lb), lb	---	26.5	---	26.5

Table 14.2. Effect of Grazing Supplements on Stocker Performance

Item	Bovatec	Aureomycin	Bovatec + Aureomycin	Rumensin Block	Salt + Dical
No. Steers	59	59	59	47	47
Daily Gain, lb	2.54[ab]	2.46[bc]	2.66[a]	2.51[ab]	2.40[c]
Daily Intake:					
Supplement, lb	.28	.14	.27	.35	.14
Ionophore Intake, mg	252	---	243	140	---
% Eye Problems	7.3[a]	3.3[ab]	1.0[b]	10.1[a]	1.1[b]
% Footrot	2.9[a]	4.6[b]	1.0[a]	1.7[a]	1.2[a]

[ab]Means in same row not sharing the same superscript differ (P<.08).

Table 14.3. The Effects of Pinkeye Vaccine on Grazing Steer Performance

Item	Pinkeye Vaccine	Control
No. Steers	134	130
Daily Gain, lb	2.46[a]	2.56[b]
Steers with Pinkeye, %	7.5	7.7

[ab]Means in same row with different superscripts are different (P<.07).