

Affect of Various Anthelmintics on Rate of Gain and Fecal Egg Count of Steers Grazing Wheat Pasture

J.A. Winder¹, K.S. Lusby²
D.R. Gill³ and T.L. Evicks⁴

Story in Brief

One hundred forty-two steers were randomly assigned to four treatment groups. One group received no anthelmintic treatment and served as a negative control. The steers in the remaining three groups were treated with one of the following commercial anthelmintics: Rumatel² (morantel tartrate), Thiabendazole³ or Tramisol⁴ (levamisole). The steers were individually weighed at the beginning of the test, at day 39 and at day 103 (final weight). Fecal samples were taken from approximately one-third of the steers at each weighing. Fecal egg counts were established for each sample.

Fecal egg counts were reduced by all anthelmintic treatments ($P < .05$) at both 39 and 103 days post treatment. Overall weight gains were not affected by deworming.

Introduction

Internal parasites have been shown to be indigenous to essentially all of Oklahoma (Young, 1963). The degree to which parasitism effects productivity of winter stocker cattle has not been firmly established. The purpose of this study was to evaluate the efficacy of three commercial anthelmintics. Both rate of gain and fecal egg counts were evaluated.

Materials and Methods

One hundred forty-two steers were randomly assigned to four treatment groups. One group received no anthelmintic treatment and served as a negative control. Each of the remaining groups were dewormed with one of the following commercial boluses: Morantel tartrate, levamisol or thiabendazole. The steers were individually weighed prior to treatment for day 1 to day 39 (period 1, December 11-January 19), day 39 to day 103 (period 2, January 19-March 18) and for the entire study (103 days). Fecal samples were taken from approximately one-third of the steers in each treatment group (fifty head) at the time of weighing. Fecal egg counts were later established for each sample by a private laboratory.

¹Area Special Agent ²Associate Professor ³Professor of Animal Science ⁴Extension Agent ⁵Pfizer Inc. ⁶Merck and Company ⁷American Cyanamid

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Table 1. Affect of anthelmintic on average daily gain.

Treatment	N	ADG, lb Period 1 ^c	ADG, lb Period 2 ^d	Overall ADG
Control	39	2.37	.58 ^a	1.26
Rumatel	36	2.27	.41 ^b	1.11
Thiabendazole	33	2.38	.56 ^{ab}	1.24
Tramisol	34	2.26	.51 ^{ab}	1.18

^{ab} Means with different superscripts are different ($P < .10$).

^c December 11, 1982 - January 19, 1982.

^d January 19, 1982 - March 18, 1982.

Following the initial treatment, the steers were placed on winter wheat pasture (December 11, 1982 until March 18, 1982). During this period, the steers received 2 lb of corn daily containing 50 mg of monensin per lb.

Results and Discussion

Only minor differences were observed in average daily gain. The non-treated group gained slightly more ($P < .10$) than those steers receiving the Rumatel boluses in period 2 (day 29 to day 103). No treatment differences existed for overall gain (day 1 to day 103). Low daily gains during period 2 were due to incimate weather for grazing and forage growth.

Pre-treatment fecal egg counts were similar for all treatments groups. However, sharp reductions in egg counts were noted in both post-treatment evaluations of samples taken from steers receiving anthelmintics (Table 2). Fecal egg counts were less ($P < .05$) in all treated groups at both 39 and 103 days post-treatment.

These data indicate that all three anthelmintics were effective in reducing the parasitic load. The lack of treatment differences in average daily gain indicate that the degree of parasitism was not severe enough to suppress growth rate. Had the parasitic load been heavier, a treatment response might have been expected. This is supported by the low correlations between fecal egg counts and average daily gain (Table 3).

Table 2. Affect of anthelmintic of fecal egg count.

Treatment	N	Pretreatment	Post Treatment 39 days	Post Treatment 103 days
Control	14	66.7	259.5 ^a	252.9 ^a
Rumatel	12	79.4	13.8 ^b	52.5 ^b
Thiabendazole	11	70.8	10.7 ^b	56.3 ^b
Tramisol	13	78.0	12.6 ^b	135.7 ^b

^{ab} Means with different superscripts are different ($P < .05$).

Table 3. Linear correlations between fecal egg counts and rate of gain.

	Pretreatments Egg Count	39 Day Egg Count	103 Day Egg Count
39 Day Egg Count	.24		
103 Day Egg Count	.29	.36	
ADG Period 1	.21	.08	-.19
ADG Period 2	.17	.01	-.10
ADG Total Period	.26	.07	-.23

Literature Cited

Young, J. 1963. Internal parasites of cattle. OSU Circular E-750.