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Effect of fenbendazole on cow-calf performance and fecal egg counts

Abstract

A field trial was conducted with 80 cow-calf pairs to evaluate the effect of deworming both cows and calves with fenbendazole, on cattle performance and internal parasite burden. Midseason and weaning weights of calves in the fenbendazole-treated group averaged 22.4 and 33.5 lb heavier (P<.04), respectively, than controls. Cow and calf fecal egg counts were low throughout the grazing season and were not materially affected by treatment.

Keywords

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Effect of Fenbendazole on Cow-Calf Performance and Fecal Egg Counts[1]

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Summary

A field trial was conducted with 80 cow-calf pairs to evaluate the effect of deworming both cows and calves with fenbendazole, on cattle performance and internal parasite burden. Midseason and weaning weights of calves in the fenbendazole-treated group averaged 22.4 and 33.5 lb heavier ($P<.04$), respectively, than controls. Cow and calf fecal egg counts were low throughout the grazing season and were not materially affected by treatment.

Introduction

Research evaluating the economic value of deworming cows and/or suckling calves has been inconsistent. Fenbendazole, a highly effective anthelmintic, has recently become available under the brandnames of Safe-Guard® and Panacur®. The purpose of this trial was to evaluate the effectiveness of this compound with cow-calf pairs grazing native range.

Experimental Procedures

Eighty cow-calf pairs were allotted to fenbendazole or control treatments based on the cows' previous performance records. The cattle were initially processed on April 25, 1984, prior to pasture turn out, with both cows and calves on the deworming treatment receiving fenbendazole oral suspension at the recommended body weight dosage. The cow herd had not been dewormed during the previous 18 months. Individual calf birth weights and dates were used in lieu of beginning trial weights. The calves averaged 49 days old at the beginning of the trial. Rectal fecal samples were randomly collected from about one-half of the cows and calves.

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Cattle on both treatments were run together in the same rotationally grazed native pastures. In mid-summer (July 25 and 26), the calves were weighed, rectal fecal samples were collected, and those calves on the fenbendazole treatment were retreated with dewormer prior to pasture rotation.

At weaning time (November 14), the calves were weighed, cows were pregnancy tested, and fecal samples were obtained from the same cows and calves as initially. Fecal samples were analyzed for parasite eggs utilizing the sugar floatation centrifugation technique.

The effect of treatment on calf performance during the early season (up to July 25), during the late season (July 25 to November 14) and on weaning weight was evaluated using Least Squares Means Procedures to remove effects of dam age, calf age, sex and sire, and pasture.

Results and Discussion

The effect on cow performance of deworming cow-calf pairs in the spring, followed by retreating the calves midsummer, is shown in Table 10.1. Fenbendazole increased early season calf gains by 22.4 lb ($P<.03$) and 252 day weaning weights by 33.5 lb ($P<.04$) compared to controls. Deworming tended to increase late season calf gains, but this was not statistically significant. Fall pregnancy rates of the cows were not affected by treatment.

Table 10.2 shows the average fecal egg counts and percentage of cattle passing detectable levels of parasite eggs at the beginning of the trial, midseason, and at weaning time. Egg counts of cows and calves were very low irrespective of treatment. Level and incidence of fecal parasite eggs in the cows decreased from spring to fall. In contrast, the strongyles (major roundworms afflicting cattle) and tapeworm egg counts of calves increased during the grazing season, while strongyloides (intestinal threadworm) counts dramatically dropped from spring to summer and fall.

The level of coccidia oocysts in the fecal samples was also qualitatively evaluated to determine their incidence and seasonal changes. It should be noted that dewormers are ineffective against this internal parasite. However, we noted that the percentage of cows with detectable fecal oocysts decreased over the grazing season, while the incidence of coccidia in calves increased substantially from spring to fall, infecting 89 to 100% of the calves in the two groups at weaning time.

Table 10.1. Effect of Fenbendazole on Suckling Calf Performance

Treatment	Least Square Means, Lb		
	Early Season Gain-140 Days	Late Season Gain-112 Days	252 Day Weaning Wt.
Control	227.6[a]	139.4	453.0[c]
Fenbendazole	250.0[b]	150.5	486.5[d]

[a,b] Means with different superscripts are significantly different (P<.03).
[c,d] Means with different superscripts are significantly different (P<.04).

Table 10.2. Effect of Season of Year and Deworming on Fecal Egg Counts of Cows and Suckling Calves

Item	Cows		Calves	
	Control	Fenbendazole	Control	Fenbendazole
No. Cattle [1]	24	20	18	23
Spring (April 25):				
Strongyles, EPG (%)[2]	12.5 (58)	8.5 (40)	3.3 (11)	2.2 (17)
Strongyloides, EPG (%)[3]	1.2 (12)	ND (0)	62.8 (56)	90.0 (74)
Coccidia, %[4]	42	40	28	39
Summer (July 25):				
Strongyles, EPG (%)	—	—	22.8 (61)	32.6 (91)
Strongyloids, EPG (%)	—	—	1.1 (11)	.4 (4)
Tapeworms, EPG (%)	—	—	37.2 (6)	25.2 (9)
Coccidia, %	—	—	72	70
Fall (November 14):				
Strongyles, EPG (%)	.4 (4)	.5 (5)	45.0 (83)	37.8 (87)
Strongyloids, EPG (%)	ND (0)	ND (0)	ND (0)	ND (0)
Tapeworms, EPG (%)	ND	ND (0)	12.8 (11)	141.3 (30)
Coccidia, %	8	15	89	100

[1] Rectal samples were collected from the same animals during each season. Cows were not sampled in summer.

[2] Average eggs per gram and percentage of cattle with detectable levels of strongyles, including brown stomach, large stomach, and small intestinal worm species.

[3] Intestinal threadworms.

[4] Percentage of cattle with clinically significant levels of coccidia oocysts.

[5] Not detectable.