Technical Bulletin

Dewormer Block Efficacy Study
(Controlled Critical Study)

I. Summary

A study was conducted to evaluate the efficacy of fenbendazole-medicated dewormer blocks against natural infections of gastrointestinal nematodes of cattle.

Twenty calves were divided into 2 groups of 10 each. One group served as non-medicated controls while the other group served as the treatment group. Mixed breed calves (Hereford, Angus and Brahman) were purchased from the same farm with an average weight of approximately 500 pounds. They had been on pastures naturally contaminated with nematode larvae for several months prior to shipment to the study location. Upon arrival, calves were placed in a drylot and acclimated for 7 days prior to initiation of the study. During this period, they were allowed access to unmedicated dewormer blocks similar to those to be used in the study. Each calf was then placed in an individual pen so that block consumption could be monitored. They each received dewormer blocks without fenbendazole for 1 week prior to being offered medicated blocks. Untreated controls were not offered blocks. All calves received hay and water but no other supplemental feed or source of salt during the preliminary phase. Fecal samples were taken prior to treatment with fenbendazole-medicated dewormer blocks and again 5 days after the last day of treatment. All calves were necropsied 5 days after the last day of treatment to determine actual nematode count and species present.

Average body weights and fecal egg counts for each group are shown in Table 1.

Table 1. Average Body Weights, Pretreatment Fecal Egg Counts and Posttreatment Fecal Egg Counts for Control Calves Given Fenbendazole-Medicated Dewormer Blocks.

Group	Average Pretreatment Body Weight (lb.) (min - max)	Average Fecal Egg Counts (EPG)	
		Pretreatment (min - max)	Posttreatment (min - max)
Untreated Controls	498.8 (435.9-576.4)	1,207.8 (100-3,900)	1,620.0 (0-6,600)
Fenbendazole-Medicated Dewormer Block (3 days)	501.4 (420.0-602.4)	910.0 (100-3,000)	0

Efficacy of fenbendazole-medicated dewormer blocks against various species of nematodes is shown in Table 2.

Table 2. Efficacy of Fenbendazole-Medicated Dewormer Blocks in Cattle.

Species of Parasite	Controls Average Count (min - max)	Treated Average Count (min - max)	% Reduction
Haemonchus contortus (Barberpole Worm)	2,721 (122-9,757)	0	100
Ostertagia ostertagi (Brown Stomach Worm)	637 (225-1,185)	0	100
Cooperia punctata (Cooperid)	3,362 (1-13,150)	1* (0-2)	99.9
Cooperia pectinata (Cooperid)	1,268 (1-4,140)	1* (0-2)	99.9
Oesophagostomum radiatum (Nodular Worm)	99 (0-280)	0	100
Trichostrongylus axei (Small Stomach Worm)	29 (0-197)	0	100
Bunostomum phlebotomum (Hookworm)	24 (0-84)	0	100
Adult Helminths (Total)	8,177	2	99.97
Immature Helminths	551 (41-1,209)	3 (0-20)	99.45
All Helminths	8,728	5	99.94

*Average values less than 0.5 were recorded as 1.

Average daily consumption of medicated blocks by individual calves in the treatment group is shown in Table 3 compared to the theoretical daily consumption.

Table 3. Consumption of Fenbendazole-Medicated Dewormer blocks.

Calf	Day of Treatment			Average Daily Consumption	Theoretical Consumption
	1	2	3		
1	1.48	0	.09	.52	.61
2	1.06	.70	.64	.80	.53
3	1.10	.51	.57	.73	.50
4	.09	1.30	.48	.62	.48
5	.51	.53	.52	.52	.48
6	1.19	.84	.72	.92	.55
7	.62	.51	.52	.55	.52
8	.65	.75	.50	.63	.50
9	.43	.58	.45	.49	.45
10	.44	.46	.40	.43	.42

Consumption of the dewormer blocks is controlled such that cattle maintain a consistent and sufficient intake during the administration period. Efficacy of fenbendazole in controlling the major economically important nematode infections in cattle is excellent when administered over a 3-day period of dewormer blocks.

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Part #: A640416 Rev.1 03/01 TCPA
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