

## Pasture deworming and (or) subsequent feedlot deworming with fenbendazole. I. Effects on grazing performance, feedlot performance and carcass traits of yearling steers.

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Resume of the article by Wicher Holland.

### 1. Introduction

Gastrointestinal (GI) parasites, particular *Ostertagia ostertagi*, are a major cause of economic loss in cattle throughout the world. The biology, life cycle and epidemiology of GI parasites have been well documented. Furthermore, there are many scientific papers concerning the pathophysiology and effects of GI parasitism on the host animal, particularly in experimentally-infected animals. There are, however, few reports on the economic impact of modern anthelmintics, such as fenbendazole (FBZ), in modern production settings.

This study was, therefore, undertaken to demonstrate in a modern North American feedlot the effects and interaction of strategic pasture and feedlot deworming practices. It also sought to determine the impact of deworming with FBZ on economically relevant outcomes in yearling beef steers, namely weight gain at pasture and in the feedlot, feed efficiency, carcass quality and general health.

### 2. Material and Methods

The trial was conducted in 2 phases - a pasture and a feedlot phase. At the start of the pasture phase, which lasted for 118 days, 363 steers were treated with an initial dose of 5 mg/kg<sup>1</sup> FBZ oral suspension (Safe-Guard<sup>®</sup>, Intervet USA). Subsequently, at days 28 and 56, these animals had access to free-choice minerals containing 0.5% FBZ (Safe-Guard<sup>®</sup>) for six consecutive days. The diet consisted primarily of grass with limited amounts of concentrate and free-choice minerals. A control group of 371 steers was left untreated. At the end of the grazing period, the FBZ-treated and untreated groups were equally

distributed to two groups - an FBZ-treated feedlot group and an untreated control group. Animals allocated to the treatment group were drenched once with 5 mg/kg FBZ oral suspension (Safe-Guard<sup>®</sup>). Rations were based on mixtures of alfalfa hay, corn silage, steam flaked corn and a liquid supplement. Steers were slaughtered when they were judged to have adequate finish for marketing. The average time that the steers spent in the feedlot was 121 days, with a range of 111 to 133 days.

<sup>1</sup>Recommended dosage in the USA.

### 3. Results

Steers treated with FBZ at turnout at pasture (n=363) gained an additional 22 kg compared to control animals (n=371; Table 1). If the animals had been sold at that time, the net benefit per head would have been 33.75 US\$ at prevailing market prices.

**Table 1. Effects of strategic deworming with fenbendazole (FBZ) on grazing performance of steers.**

	Control	FBZ treated
Number of animals	371	363
Initial weight, kg	285	288
End weight, kg	335	359*
Total gain, kg	50	72*
Daily gain, kg	0.42	0.61*

\* Significant at P<0.05

Final weight, daily gain, and carcass weight in the feedlot phase were affected by interactions between pasture and feedlot treatments. These indicated that while feedlot deworming improved performance of all steers, it had a much greater effect on the steers that had not been treated at

pasture (Table 2). On a live basis (minus dead), deworming of the pasture control steers with FBZ in the feedlot improved their daily weight gain by 13.4% (2.08 kg/d versus 1.83 kg/d for untreated steers), compared with the 4.2% improvement for steers that were treated at grass and again in the feedlot (1.98 kg/d versus 1.90 kg/d for untreated steers).

For the complete grazing-finishing system, feedlot deworming of previously untreated steers using FBZ produced a net benefit of 30.61 US\$. Feedlot deworming of steers previously dewormed at pasture produced an additional net benefit from these animals of 11.07 US\$.

#### 4. Conclusion

Under the conditions of this study there were clear performance and economic benefits from strategically deworming grazing steers with Panacur®/Safe-Guard®, as well as from deworming these animals with Panacur®/Safe-Guard® as they entered the feedlot from summer pasture. Care should, however, be taken in extrapolating these data to other geographical locations or different management systems. This said, further studies to demonstrate the benefits of deworming with Panacur®/Safe-Guard® on performance of animals are encouraged.

**Table 2. Effects of strategic pasture deworming and subsequent feedlot deworming with FBZ on feedlot performance of feedlot steers.**

Pasture treatment	Control		Dewormed	
	Control	FBZ treated	Control	FBZ treated
Feedlot treatment	Control	FBZ treated	Control	FBZ treated
Number of animals	155	160	159	160
Initial weight, kg	330	330	354	354
End weight, kg	551 <sup>a</sup>	580 <sup>a</sup>	589 <sup>b</sup>	598 <sup>b</sup>
Total gain	221 <sup>c</sup>	250 <sup>c</sup>	235 <sup>d</sup>	244 <sup>d</sup>
Daily gain, kg LW	1.83 <sup>e</sup>	2.08 <sup>e</sup>	1.9 <sup>f</sup>	1.98 <sup>f</sup>
Hot carcass weight	322	344	348	357

Values sharing identical superscripts are significantly different ( $P < 0.05$ )