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Antonio J. Neto, Curtis J. Bittner, Brandon L. Nuttelman and Galen E. Erickson

Summary

The effects of Safeguard® on fecal egg count (FEC) and performance of newly received calves in the feedlot were evaluated. Treatments were Safeguard® and Dectomax® injectable or only Dectomax® injectable. The basal diet consisted of 30% dry-rolled corn, 36% Sweet Bran® Cargill, 30% alfalfa hay, and 4% supplement. There were no differences in DMI, ADG, F:G, and initial FEC between treatments. However, FEC on d 19 was lower for animals receiving Safeguard® and Dectomax® compared to Dectomax®. The combination of Safeguard® and Dectomax® reduced FEC to very low amounts of newly received calves in the feedlot.

Introduction

Gastrointestinal parasitism is one of the most costly diseases in the US cattle industry, and has significant economic impact due to cost of treatment, prevention, and losses in beef production.

In feedlot animals, subclinical parasitism can cause inferior rates of gain and feed conversion. It is assumed that losses occur as a result of a number of factors, including the diversion of nutrients to parasite growth and reproduction, interference with nutrient absorption by reducing available surface area and direct damage to the gut lining.

The fecal egg count reduction test is a simple test recommended by the American Association of Veterinary Parasitologists to help producers verify that the dewormer they are using is effective.

Fenbendazole (Safeguard®, Merck Animal Health) and *Doramectin* (Dectomax®, Zoetis Animal Health) are indicated for use in cattle for removal and control of lungworms, stomach worms, and intestinal worms. However, interactions among these products have not been widely documented.

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Procedure

The effects of Safeguard® during the receiving period on fecal egg count (FEC) and steer calf performance in the feedlot were evaluated. The experiment was conducted at the University of Nebraska–Lincoln Agricultural Research and Development Center (ARDC) near Mead, NE. Three hundred sixty-eight (BW = 584 ± 44 lb) steers were used in a completely randomized design study with 16 pens (8 replications per treatment and 23 steers per pen). Treatments were applied to steers at arrival and were a combination of Safeguard® (1 mL/110 lb of BW) and Dectomax® injectable (2.5 mL/110 lb of BW) (SG+DTX) or only Dectomax® injectable (DTX). Steers were assigned to pen based on processing order, with every other steer assigned to SG+DTX or DTX. Once a pen replicate was filled, new pen replicates were started until all steers were assigned.

The basal diet consisted of 30% dry-rolled corn, 36% Sweet Bran® Cargill, 30% alfalfa hay, and 4% supplement. On d 1, steers were ear tagged, individually weighed, vaccinated with Bovi-shield® Gold One Shot, Somubac®, and individual fecal samples were collected. On d 19, fresh fecal samples were collected off pen floor surface (10 samples/pen). Fecal samples were analyzed for FEC (eggs per 3 grams) at a commercial laboratory (Animal Production Consulting, Inc.). At the end of the receiving period (24 d), steers were limit-fed a common diet consisting of 50% Sweet Bran® and 50% alfalfa hay (DM basis) at 2% of BW for 5 d before collecting ending BW to minimize variation in gut fill. Ending BW was an average of 2 d weights. Initial BW was not shrunk because steers were weighed within 12 h of arrival and had no access to feed before weighing.

Fecal egg count and animal performance data were analyzed using the MIXED procedure of SAS (SAS Institute, Inc., Cary, N.C.) with pen as the experimental unit.

Results

There were no differences in initial BW ($P = 0.13$), ending BW ($P = 0.33$), DMI ($P = 0.41$), ADG ($P = 0.94$), and F:G ($P = 0.43$) between DTX or SG+DTX (Table 1). In relation to FEC, no significant difference was observed for initial FEC ($P = 0.45$) between treatments and averaged 16.9 eggs per 3 g

Table 1. Effects of Dectomax (DTX) or Safeguard and Dectomax (SG+DTX) on fecal egg count and steer performance of newly received beef calves in the feedlot

Item	Treatments		SEM	*P-value*
	DTX	SG+DTX		
Initial BW, lb	579	589	4.4	0.13
Ending BW, lb	655	664	6.8	0.33
DMI, lb/d	12.9	13.4	0.38	0.41
ADG, lb	3.02	3.01	0.15	0.94
Feed:Gain[a]	4.29	4.46	—	0.43
Initial FEC[b]	18.7	15.1	3.35	0.45
Ending FEC	0.50	0.06	0.13	0.03

[a]Analyzed as G:F, the reciprocal of F:G
[b]FEC: Fecal egg count (eggs per 3 grams)

of feces, which is a fairly low parasite load. However, FEC on d 19 was lower ($P = 0.03$) for animals receiving SG+DTX (FEC = 0.06 eggs per 3 g feces) compared to DTX (FEC = 0.50 eggs per 3 g feces) (Table 1).

Results indicated the combination of Safeguard® and Dectomax® reduced the FEC of newly received calves in the feedlot slightly more than Dectomax® alone, but is probably not biologically significant. The parasite load was quite low on incoming cattle. Given the slight reductions between treatments and low parasite load on arrival, no performance impacts are logical.

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