



TECHNIGRAM

A Comparison of the Persistent Efficacy of Pour-On Formulations of Moxidectin (Cydectin®) and Ivermectin (Ivomec®) Against Naturally Acquired Nematode Infections of Beef Cattle (Cows and Calves) Following a Single Treatment

SUMMARY

A study was conducted with cow/calf pairs at the University of Florida, Santa Fe Ranch Research Station located northeast of Gainesville, Florida during the summer of 1998. Drought existed during most of the grazing season, and the summer of 1998 was recorded as having the worst precipitation conditions in over 50 years. However, weaned calves treated with Cydectin Pour-On gained 19.4 pounds more than untreated controls, and 11.7 pounds more than Ivomec Pour-On treated animals. The Ivomec Pour-On treated animals were 7.7 pounds heavier than untreated controls.

METHODS & MATERIALS

One hundred twenty cow/calf pairs (60 bull and 60 heifer calves, three to six months of age) predominately of Angus breeding were stratified by calf weight and sex, and allocated to five blocks. Within each block, four bull calves and four heifer calves and their dams were randomly allocated to each of three adjacent 15 acre pastures. Three treatments, untreated control, Cydectin Pour-On at 500 mcg/kg or Ivomec Pour-On at 500 mcg/kg, were randomly allocated to one group each within a block and administered once topically to cows and calves on day 0 (May 5, 1998).

Fecal samples were collected from calves on days -7, 0, 7, 14, 21, 28, 35, 42, 49, 56, 70, 84, 98, 112, 126 and 140 and from cows on days -7, 0, 28, 56, 84, 112 and 140. Fecal samples were processed by the Wisconsin Sugar Flotation method. Cows and calves were weighed on days -7, 0, 28, 56, 84, 112, 139 and 140.

RESULTS

Average calf fecal egg counts (Trichostrongyle type eggs) across all treatments at day -7 were 185 eggs per gram of feces. Calf fecal egg counts were decreased ($P < 0.05$) by Cydectin Pour-On compared to the untreated control from day 7 to 126. Ivomec Pour-On decreased ($P < 0.05$) calf fecal egg counts versus untreated control from day 7 to 56 and 98 to 112; however, there were no differences ($P > 0.05$) between Ivomec Pour-On and the untreated control for days 70, 84 and 126. At day 140, no differences ($P > 0.05$) in calf fecal egg counts were observed among the three treatments. During the study, no differences ($P > 0.05$) occurred in calf fecal egg counts between the two pour-on treatments.

Average cow fecal egg counts (Trichostrongyle type eggs) across all treatments at day -7 were 13 eggs per gram of feces. Cow fecal egg counts were not different ($P > 0.05$) between the two pour-on products from day 28 to 140. Both pour-on products reduced ($P < 0.05$) cow fecal egg counts versus the untreated control for all post-treatment sampling days, with exception of day 112 in which there was no difference ($P > 0.05$) between Cydectin Pour-On and the untreated control treatment.

Initial calf weights were very similar at the beginning of the study and averaged 275 pounds (Table 1). Mean total weight gain for all calves in the 140 day study was 270 pounds. Cydectin Pour-On treated calves gained 19.4 pounds more ($P = 0.10$) than the untreated controls and 11.7 pounds more ($P = 0.48$) than the Ivomec Pour-On treated calves. Ivomec Pour-On treated calves gained 7.7 pounds more ($P = 0.30$) than the untreated controls. During the 140 day study, average weight gain for all cows was 39.5 pounds with no differences occurring among treatments ($P = 0.69$ Cydectin Pour-On versus untreated control, $P = 0.66$ Ivomec Pour-On versus untreated control, $P = 0.40$ Ivomec Pour-On versus Cydectin Pour-On).

Record low precipitation levels during the course of the study likely reduced parasite exposure and thus response to treatment. Also, overall weight gains were significantly reduced compared to normal, due to decreased nutrient availability.



DISCUSSION

The average cow/calf pair administered Cydectin Pour-On in this study required 62 mL of product with a cost estimate for treatment at \$6.73. Cydectin Pour-On treated calves gained 19.4 pounds additional weight compared to the untreated controls. Assuming a calf market value of \$0.90 per pound, this would provide a producer \$17.46 in additional sales and \$10.73 in net return per calf compared to an untreated control.

Table 1. Weight Gain of Calves Treated with Ivomec Pour-On and Cydectin Pour-On Versus Untreated Controls

Parameter	Weight, Pounds			SE
	Untreated Control	Ivomec® Pour-On	Cydectin® Pour-On	
Initial weight (5-5-98) ^a	275	277	272	2.9
Final weight (9-22-98) ^b	536	546	552	8.2
<u>Weight Gain</u>				
Day 0 - 28	61.1	67.1	64.6	4.2
Day 28 - 56	68.3	62.1	67.8	5.8
Day 56 - 84	58.0	54.9	64.3	4.2
Day 84 - 112	46.5	48.9	44.6	5.4
Day 112 - 140	28.7	36.0	39.5	2.8
Day 0 - 140	261.3	269.0	280.7	7.6

^a Mean of days -7 and 0.

^b Mean of days 139 and 140.

No meat or milk withdrawal is required when used according to the label. A withdrawal period has not been established in pre-ruminating calves. Do not use in veal calves. Do not use in other animal species as adverse reactions may occur. See product labeling for full directions for use.



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