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# Effect of Midsummer Deworming with Cydectinon Cows and Calves

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## Story in Brief

Two groups of cows and calves in two separate locations were used to demonstrate the effect of an anthelmintic on animal weight change through the summer grazing season to weaning of the calves in the fall. At the initial April weighing, cows and calves were individually identified and all animals received moxidectin (Cydectin®) at the approved dosage (.5 mg/kg body weight). Spring rainfall was less than normal and summer was extremely hot and dry. There was no difference in weight change of cows or calves subsequent to midsummer deworming. Additionally, there was no difference due to possible treatment combinations of cow/calf pairs. These results suggest there may be little or no benefit to midsummer deworming of cows subsequent to spring deworming during periods of intense hot, dry weather.


Key Words: Beef Cattle, Anthelmintics, Deworm, Drought

## Introduction

Numerous field trials with cows and their calves in eastern Oklahoma have demonstrated significant improvements in animal performance following treatment with anthelmintics (Smith et al., 1995, 1999; Stacey et al., 1994, 1995, 1996, 1997). Weight gains by dewormed cows are typically improved 25 to 35 lb when treated in midsummer. Nursing calves treated with anthelmintics have shown increased fall weaning weights of 20 to 25 lb as a result of mid-summer deworming (Smith et al., 1995).

Eastern Oklahoma has relatively high rainfall, an extended growing season, moderate winters and a preponderance of introduced pastures. As a result, stocking rates may be especially high. These factors are conducive to the life cycle of the brown stomach worm, *O. ostertagi*, leading to negative influences on animal performance in eastern Oklahoma.

Moxidectin, brand name Cydectin®, is a new generation anthelmintic labeled to control internal and external parasites in beef cattle. Moxidectin has proven itself effective against numerous internal parasites including *O. ostertagi*. The objective of these trials was to demonstrate the effect of treatment with an anthelmintic on animal performance from mid-summer to fall weaning of the calves.

## Materials and Methods

In mid April, 190 cows and their calves, in two locations, were initially

identified, weighed and topically treated with moxidectin (Cydectin®) at the recommended label dosage (0.5 mg/dg body weight). Trial 1 was conducted in Atoka County and Trial 2 was conducted at Lake Carl Blackwell Range near Stillwater, OK. Fecal samples were randomly taken from 15% of the cows and calves and sent to a commercial laboratory for analysis. Treated and untreated cows and calves were co-mingled throughout the summer grazing season. At the midsummer deworming, pairs were randomly allocated to one of four treatment groups. Treatment groups were identified as to whether cows and/or calves were treated with Cydectin© resulting in four treatment combinations. At the midsummer deworming, all cows and calves were weighed and fecal samples were taken from the same cows and calves, which produced the initial fecal samples. Midsummer weights were used as initial trial weights. In Trial 1, calves were individually weaned at approximately 205 d of age resulting in varied lengths of time from midsummer treatment to weaning. To compensate, adjusted 205-d weights were used as final weights. In Trial 2, final calf weights were actual body weights. In both trials, animals were weighed full after gathering in early morning. Both trials were conducted for 109 d. The statistical model included the effects of location, treatment and the associated interaction. Individual animals were considered to be the experimental unit.

## Results and Discussion

The effectiveness of an anthelmintic in controlling internal parasites and improving animal performance is dependent on several factors. Among those factors are the degree of individual animal infection, overall herd infestation, pasture conditions conducive to the life cycle of the parasite and efficacy of the anthelimintic.

Thirty-six percent and 47% of cows had positive fecal egg counts in Trials 1 and 2, respectively, as did 35% and 65% of the calves in Trials 1 and 2, respectively (Table 1). Fecal egg counts were low. However, Stacey et al. (1995) demonstrated significant weight gain in nursing calves with equally low fecal egg counts subsequent to treatment with an anthelmintic. Cow weight change due to midsummer treatment with an anthelmintic in these trials was less than indicated by previous studies in eastern Oklahoma. In Trials 1 and 2 there were no differences in weight gains of cows due to midsummer deworming. Cows in Trial 1 exhibited body weight changes of –33 lb to 7 lb (Table 2). Cows in Trial 2 gained from 73 lb to 100 lb with negligible change in body condition (Table 3). Calf weight gain was unaffected by treatment in both trials. Additionally, regardless of treatment combinations of cow/calf pairs, treatment had no effect on cow or calf weight gain to weaning. Previous trials by Smith et al. (1995) have shown improved animal performance in cows and stocker animals receiving follow-up treatments for internal parasites.

The drought under which these trials were conducted may have significantly reduced the pasture conditions necessary for completion of the parasite life cycle and animal re-infestation. With lowered rates of re-infestation following a spring treatment with an anthelmintic to a summer re-treatment, the average response of the herd to re-treatment would be expectedly reduced. Smith et al. (1999) also found no benefit to midsummer treatment with an anthelemintic to cow or calf weight gain following a spring deworming.

## Literature Cited

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**Table 1. Average fecal egg counts of cows and calves at time of deworming, eggs/g.**

| Location | % infected cows | Cow fecal egg count, eggs/g | % infected calves | Calf fecal egg count, eggs/g |
|---|---|---|---|---|
| 1 | 36 | 12 | 35 | 1 |
| 2 | 47 | 12 | 65 | 8 |

**Table 2. Average weight change of cows and their calves following deworming in July (Trial 1).**

| Treatment, cow/calf | Number of pairs | Initial cow wt, lb | Wt change, lb | Calf wt gain, lb |
|---|---|---|---|---|
| Trt/Trt | 22 | 1200 | -8 | 209 |
| Trt/Con | 23 | 1266 | -33 | 206 |
| Con/Trt | 26 | 1222 | 0 | 207 |
| Con/Con | 24 | 1203 | 7 | 211 |

[a]Least squares means.

**Table 3. Average initial weight and weight change of cows and their calves following deworming in July[a] (Trial 2).**

| Treatment, cow/calf | Number of pairs | Initial cow wt, lb | Wt change, lb | Body cond. score | BCS change | Calf wt change, lb |
|---|---|---|---|---|---|---|
| Trt/Trt | 23 | 1115 | 86 | 5.0 | .02 | 245 |
| Trt/Con | 23 | 1073 | 100 | 5.1 | 0 | 231 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Con/Trt | 25 | 1115 | 73 | 5.0 | -.06 | 244 |
| Con/Con | 24 | 1123 | 81 | 5.1 | -.20 | 247 |

[a]Least squares means.

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