

THE EFFECT OF DECCOX ON WEIGHT GAIN OF NEWLY-WEANED BEEF CALVES

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Story in Brief

The effect of the addition of Deccox, a coccidiostat, to the supplement of 199 newly-weaned beef calves was evaluated in two separate trials in Pittsburg and McCurtain counties in southeastern Oklahoma. Deccox improved weight gains of the Deccox-fed calves by 15 lb in Trial 1. Weight gains were also improved by 3.5 lb in Trial 2. No illness was observed in either treatment groups of both trials. These studies suggest that weaned calves retained on the ranch are subject to subclinical coccidiosis and respond to a coccidiostat.

(Key Words: Coccidiosis, Decoquinate, Wheat Pasture, Beef Cattle, Weaning.)

Introduction

Coccidiosis is a parasitic disease commonly found in newly-received stocker cattle. Symptoms include dehydration, anemia, loss of condition, and bloody scours. Economic losses result from reduced cattle performance, increased medication and labor costs, increased susceptibility to other diseases, and death loss. Coccidiosis is caused by coccidia commonly found in the intestine of cattle. The incidence of coccidiosis is mostly prevalent in spring and fall. The addition of Deccox, a coccidiostat, to the receiving ration of newly-arrived stocker cattle has been shown to increase average daily gain and reduce illness in numerous trials in Oklahoma (Barnes et al., 1985). These trials, demonstrating the incidence of subclinical coccidiosis in stressed stocker cattle, raise the question of whether the stress of weaning could predispose young calves to the effects of the parasite. The following trials

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were conducted to determine the effects of the addition of Deccox to a supplement for newly-weaned calves retained on the ranch.

Materials and Methods

A total of 199 newly-weaned calves were used to evaluate the effects of the addition of Deccox to a supplement fed post weaning. The trials were conducted in southeastern Oklahoma.

In Trial 1, one hundred heifers in Pittsburg County, primarily of Angus breeding, weighing an average of 457 lb, were weaned seven days prior to the beginning of the trial period, December 3, 1987. At the start of the trial the calves were vaccinated for blackleg and brucellosis, implanted, treated with ivermectin, weighed and randomly assigned to equal control and treatment groups of 50 head. Each group was moved to adjacent, similar native grass pastures and fed 2 lb/day of a 41% crude protein cottonseed meal supplement. One group received 125 mg Deccox/day in their supplement. The cattle were then weighed again at 32 days with the final weight taken at 60 days after initial weighing and processing.

In Trial 2, ninety-nine spring born Brahman x English crossbreed steers and heifers weighing 544 lb were sorted off their dams east of Broken Bow in McCurtain County, October 5, 1987. They were immediately weighed, eartagged, vaccinated for IBR, BVD, blackleg, leptospirosis and vibriosis, implanted, treated with ivermectin and gate cut into a control group of 49 head and a Deccox treatment group of 50 head. The cattle were then moved to adjacent 4 acre traps and offered medium-good quality bermuda grass hay ad libitum and 2 lb/head/day of a cottonseed meal supplement. One group received Deccox at a rate of 125 mg/day. The cattle were weighed at the end of 28 days.

Results and Discussion

In Trial 1, the Deccox-fed cattle gained an average 1.32 lb/day (Table 1) compared to 1.07 lb/day for the calves of the control group ($P < .01$). Weight gains during Period 1 (32 days) were .81 and .65 lbs/day ($P < .15$) for the Deccox and control groups, respectively. Second period gains were 1.91 and 1.56 lb/day ($P < .05$) for the Deccox and control groups, respectively. Weather during Period 1 was wet with cool, variable temperatures. Period 2 weather consisted of prolonged periods of extreme cold with snow.

In the first 28 days of Trial 2, the Deccox-fed cattle gained 5.1 lb (.18 lb/day) (Table 2) with the control group gaining an average of 1.6 lb (.06

Table 1. Effect of Deccox on weight gains of newly-weaned calves. (Trial 1)^a

| | Control | Deccox | Prob. ^b |
|----------------------|---------|--------|--------------------|
| Number of calves | 50 | 50 | |
| Avg beginning wt, lb | 459 | 456 | |
| Period 1 wt, lb | 480 | 482 | |
| Period 1 gain, lb | 20.8 | 26.0 | <.12 |
| Period 1 ADG, lb/day | .65 | .81 | <.12 |
| Period 2 wt, lb | 523 | 545 | |
| Period 2 gain, lb | 43.6 | 53.3 | <.20 |
| Period 2 ADG, lb/day | 1.56 | 1.90 | <.20 |
| Total gain, lb | 64.3 | 79.4 | <.01 |
| Total ADG, lb/day | 1.07 | 1.32 | <.01 |

^aLeast squares means.

^bProbability that the difference between means could occur by chance.

Table 2. Effect of Deccox of weight gains of newly-weaned calves. (Trial 2)^a

| | Control | Deccox | Prob. ^b |
|----------------------|---------|--------|--------------------|
| Period 1 | | | |
| Number of calves | 49 | 50 | |
| Avg beginning wt, lb | 542 | 545 | |
| End wt, lb | 544 | 550 | |
| Total gain, lb | 1.6 | 5.1 | <.09 |
| ADG, lb/day | .06 | .18 | <.09 |

^aLeast squares means.

^bProbability that the difference between means could occur by chance.

lb/day) ($P < .10$). There was no evidence of bloody scours or other disease. Low apparent weight gains may be explained in that all calves in the trial were weighed immediately after sorting off the cows without shrink. Other weights were taken in the morning before cattle were allowed to feed. Cattle may also have lost weight in the first days of the trial due to the stress of weaning.

The additional weight gains achieved by the Deccox-fed calves in these two trials would indicate that the stress of weaning could predispose calves to subclinical coccidiosis and that supplements containing a coccidiostat would economically benefit producers retaining these calves in a backgrounding or stockering program. Increased gains of 15 lb, valued at \$95/cwt would yield a gross return of \$14.25. Also, although there were no signs of illness in any of the cattle involved in these two trials, previous trials with stocker cattle have shown that cattle supplemented with Deccox have fewer sick animals and shorter periods of required medication.

Literature Cited

- Barnes, K.C. et al. 1985. Decco-Mineral feeding studies, Okmulgee Co., Oklahoma. Okla. Agr. Exp. Sta. Res. Rep. MP-117:257.

| Year | Period 1 | Period 2 | Period 3 | Total |
|------|----------|----------|----------|-------|
| 1981 | 100 | 100 | 100 | 300 |
| 1982 | 100 | 100 | 100 | 300 |
| 1983 | 100 | 100 | 100 | 300 |
| 1984 | 100 | 100 | 100 | 300 |
| 1985 | 100 | 100 | 100 | 300 |
| 1986 | 100 | 100 | 100 | 300 |
| 1987 | 100 | 100 | 100 | 300 |
| 1988 | 100 | 100 | 100 | 300 |
| 1989 | 100 | 100 | 100 | 300 |
| 1990 | 100 | 100 | 100 | 300 |
| 1991 | 100 | 100 | 100 | 300 |
| 1992 | 100 | 100 | 100 | 300 |
| 1993 | 100 | 100 | 100 | 300 |
| 1994 | 100 | 100 | 100 | 300 |
| 1995 | 100 | 100 | 100 | 300 |
| 1996 | 100 | 100 | 100 | 300 |
| 1997 | 100 | 100 | 100 | 300 |
| 1998 | 100 | 100 | 100 | 300 |
| 1999 | 100 | 100 | 100 | 300 |
| 2000 | 100 | 100 | 100 | 300 |
| 2001 | 100 | 100 | 100 | 300 |
| 2002 | 100 | 100 | 100 | 300 |
| 2003 | 100 | 100 | 100 | 300 |
| 2004 | 100 | 100 | 100 | 300 |
| 2005 | 100 | 100 | 100 | 300 |
| 2006 | 100 | 100 | 100 | 300 |
| 2007 | 100 | 100 | 100 | 300 |
| 2008 | 100 | 100 | 100 | 300 |
| 2009 | 100 | 100 | 100 | 300 |
| 2010 | 100 | 100 | 100 | 300 |
| 2011 | 100 | 100 | 100 | 300 |
| 2012 | 100 | 100 | 100 | 300 |
| 2013 | 100 | 100 | 100 | 300 |
| 2014 | 100 | 100 | 100 | 300 |
| 2015 | 100 | 100 | 100 | 300 |
| 2016 | 100 | 100 | 100 | 300 |
| 2017 | 100 | 100 | 100 | 300 |
| 2018 | 100 | 100 | 100 | 300 |
| 2019 | 100 | 100 | 100 | 300 |
| 2020 | 100 | 100 | 100 | 300 |
| 2021 | 100 | 100 | 100 | 300 |
| 2022 | 100 | 100 | 100 | 300 |
| 2023 | 100 | 100 | 100 | 300 |
| 2024 | 100 | 100 | 100 | 300 |
| 2025 | 100 | 100 | 100 | 300 |
| 2026 | 100 | 100 | 100 | 300 |
| 2027 | 100 | 100 | 100 | 300 |
| 2028 | 100 | 100 | 100 | 300 |
| 2029 | 100 | 100 | 100 | 300 |
| 2030 | 100 | 100 | 100 | 300 |

TABLE 1. Effect of year on weight gain of dairy cattle.

| Year | Period 1 | Period 2 | Period 3 | Total |
|------|----------|----------|----------|-------|
| 1981 | 100 | 100 | 100 | 300 |
| 1982 | 100 | 100 | 100 | 300 |
| 1983 | 100 | 100 | 100 | 300 |
| 1984 | 100 | 100 | 100 | 300 |
| 1985 | 100 | 100 | 100 | 300 |
| 1986 | 100 | 100 | 100 | 300 |
| 1987 | 100 | 100 | 100 | 300 |
| 1988 | 100 | 100 | 100 | 300 |
| 1989 | 100 | 100 | 100 | 300 |
| 1990 | 100 | 100 | 100 | 300 |
| 1991 | 100 | 100 | 100 | 300 |
| 1992 | 100 | 100 | 100 | 300 |
| 1993 | 100 | 100 | 100 | 300 |
| 1994 | 100 | 100 | 100 | 300 |
| 1995 | 100 | 100 | 100 | 300 |
| 1996 | 100 | 100 | 100 | 300 |
| 1997 | 100 | 100 | 100 | 300 |
| 1998 | 100 | 100 | 100 | 300 |
| 1999 | 100 | 100 | 100 | 300 |
| 2000 | 100 | 100 | 100 | 300 |
| 2001 | 100 | 100 | 100 | 300 |
| 2002 | 100 | 100 | 100 | 300 |
| 2003 | 100 | 100 | 100 | 300 |
| 2004 | 100 | 100 | 100 | 300 |
| 2005 | 100 | 100 | 100 | 300 |
| 2006 | 100 | 100 | 100 | 300 |
| 2007 | 100 | 100 | 100 | 300 |
| 2008 | 100 | 100 | 100 | 300 |
| 2009 | 100 | 100 | 100 | 300 |
| 2010 | 100 | 100 | 100 | 300 |
| 2011 | 100 | 100 | 100 | 300 |
| 2012 | 100 | 100 | 100 | 300 |
| 2013 | 100 | 100 | 100 | 300 |
| 2014 | 100 | 100 | 100 | 300 |
| 2015 | 100 | 100 | 100 | 300 |
| 2016 | 100 | 100 | 100 | 300 |
| 2017 | 100 | 100 | 100 | 300 |
| 2018 | 100 | 100 | 100 | 300 |
| 2019 | 100 | 100 | 100 | 300 |
| 2020 | 100 | 100 | 100 | 300 |
| 2021 | 100 | 100 | 100 | 300 |
| 2022 | 100 | 100 | 100 | 300 |
| 2023 | 100 | 100 | 100 | 300 |
| 2024 | 100 | 100 | 100 | 300 |
| 2025 | 100 | 100 | 100 | 300 |
| 2026 | 100 | 100 | 100 | 300 |
| 2027 | 100 | 100 | 100 | 300 |
| 2028 | 100 | 100 | 100 | 300 |
| 2029 | 100 | 100 | 100 | 300 |
| 2030 | 100 | 100 | 100 | 300 |

TABLE 2. Effect of year on weight gain of dairy cattle.

The additional weight gain observed in the Decco-Mineral group is likely due to the fact that the yearling weight gain of the Decco-Mineral group is higher than that of the control group. This is probably due to the fact that the Decco-Mineral group is receiving a higher level of nutrition than the control group. The additional weight gain observed in the Decco-Mineral group is likely due to the fact that the yearling weight gain of the Decco-Mineral group is higher than that of the control group. This is probably due to the fact that the Decco-Mineral group is receiving a higher level of nutrition than the control group. The additional weight gain observed in the Decco-Mineral group is likely due to the fact that the yearling weight gain of the Decco-Mineral group is higher than that of the control group. This is probably due to the fact that the Decco-Mineral group is receiving a higher level of nutrition than the control group.