THE EFFECT OF CLORSULON ON WEIGHT GAIN ON LACTATING COWS AND THEIR CALVES

S.C. Smith[1], K.S. Lusby[2], J. Brisco[3], J.D. Enis[4], D.E. Cooper[5], and M.R. Montague[6]

Story in Brief

The effect of clorsulon (tradename, Curatrem) for control of liver flukes on subsequent weight changes in 118 lactating beef cows and their calves was evaluated in a trial conducted in Choctaw County in southeastern Oklahoma. There were no significant differences in cow or calf weight changes between treatment groups or pairings. This study suggests that, dependent upon the incidence and rate of infestation, subclinical field liver fluke infestations in a cow/calf operation may not constitute a production or economic burden.

(Key Words: Beef Cattle, Liver Flukes, Parasites.)

Introduction

Fascioliasis, liver fluke disease, caused by *Fasciola hepatica*, is endemic primarily along the Gulf Coast, West Coast, and Rocky Mountain Region of the United States. Observations indicate that liver fluke infestation is spreading to significant portions of Oklahoma. In an Oklahoma study feedlot steers with liver flukes gained 8.8% slower than steers without flukes over a 119-day feeding period (Hicks et al., 1987). Another Oklahoma experiment analyzed economic effects; liver flukes found to infect 101 of 317 feedlot steers at slaughter (Hicks et al., 1989). This trial demonstrated that for each 10% increase in the incidence of flukes in a pen of cattle, daily gain decreased by .028 lb/day and dry matter intake decreased by .151 lb/day; the economic impact was a difference in profitability of $14/head between pens of feedlot cattle either free of flukes or 100% infected. Australian workers reported that gains were reduced by 14.4% in grazing steers artificially infected with flukes. Other work has shown fluke infestations reduced reproduction rates in cows by 15% and calf weaning weights by 22 lb.

---

[1]Area Livestock Specialist [2]Professor [3]Ranch Manager, Fighting 7, Ft. Towson [4]Area Agronomist [5]County Extension Director and 4-H Agent [6]County Ag Agent

Materials and Methods

One-hundred-eighteen lactating crossbred beef cows and their Charolais sired spring-born calves were used to evaluate the effect of clorsulon on cow and calf weight change during 68 days from mid-July to mid-September. The initiation and termination of the trial were timed to coincide with the end of weather conducive to fluke infestation and the scheduled weaning of the nursing calves, respectively. The trial was conducted in southeastern Oklahoma. The site and herd used were selected on the basis of three veterinary testimonials regarding the fluke infestation of the herd, presence and prevalence of lymnaeid snails, and other facets of herd history.

Cows and their previously vaccinated and castrated calves were individually identified and weighed, injected with ivermectin (Ivomec), and randomly sorted into two treatment groups, one of which was treated with clorsulon (Curatrem). Cows and calves were observed to determine and confirm cow/calf pairings.

Shortly following the initial weighing, the cattle were moved to an upland pasture not infected with snails and returned to the original pasture three weeks prior to trial termination. Control and treated cattle were pastured together.

Results and Discussion

Mean body weight changes were -16.2, -17.6, 117.3, and 120.1 lb (Table 1) for control cows, clorsulon treated cows, control calves, and clorsulon treated calves, respectively. Mean cow weight changes within cow/calf treatment pairs were -13.4, -19.8, -18.9, and -15.4 lb (Table 2) for control/control, control/clorsulon, clorsulon/control, and clorsulon/clorsulon pairings, respectively. Mean calf weight gains within cow/calf treatment pairs were 115.7, 118.8, 119.2, and 121.1 lb for control/control, control/clorsulon, clorsulon/control, and clorsulon/clorsulon pairings, respectively. These values were not significantly different.

Given feedyard data demonstrating a .2 lb/day reduction in ADG due to subclinical fluke infestations, one may expect a lesser difference in weight gain performance in grazing cattle generally performing at a lower level. Economic justification for treatment of subclinically fluke infested grazing cattle would rely on sufficient days to accumulate added weight. Time from treatment at the end of the period of infestation to weaning may not be long enough for the accumulation of increased calf weaning weights to justify treatment. Cow weight changes in this trial would indicate that there is no

Table 1. Effect of clorsulon on weight changes of lactating beef cows and calves.[a]

	Treatment	
	Control	Clorsulon
Cows		
No.	56	62
Beginning weight, lb	898	921
Weight gain, lb	-16.2	-17.6
Calves		
No.	57	61
Beginning weight, lb	338	325
Weight gain, lb	117.3	120.1
Average daily gain, lb	1.73	1.76

[a] Least squares means. Means are not different (P>.05).

Table 2. Effect of clorsulon on weight changes of beef cow/calf pairs.[a]

Cow/Calf treatment[b]	Cow beg. weight, lb	Cow weight change, lb/hd	Calf beg. weight, lb	Calf weight gain, lb	Calf ADG lb/day
Cnt/Cnt	883	-13.4	327	115.7	1.70
Clor/Cnt	910	-19.8	336	118.8	1.75
Cnt/Clor	918	-18.9	346	119.2	1.75
Clor/Clor	923	-15.4	315	121.1	1.78

[a] Least squares means. Means in the same row with different supercripts (P>.05).

[b] Cnt is control; Clor is clorsulon treatment.

effect upon reproductive performance of the cowherd by treatment with clorsulon as body weight relates to body condition score. If the results of this trial reflect this reasoning then subclinical incidences of fluke infestations commonly found in cow/calf operations in southeast Oklahoma are of little production or economic consequence as they relate to calf weaning weights. If, however, significant numbers of cows are clinically exhibiting signs of liver fluke disease, then fluke incidence and infestation levels may warrant treatment of the entire cowherd resulting in increased cow reproductive performance and calf weaning weights.

Literature Cited

Hicks, R.B. et. al. 1987. The effect of liver flukes on the performance of feedlot steers. Okla. Agr. Exp. Sta. Res. Rep. MP-119:337.

Hicks, R.B. et. al. 1989. Impact of liver flukes on the performance of feedlot steers. Okla. Agr. Exp. Sta. Res. Rep. MP-127:123.