

Effects of Worming and Implanting Compared Among Backgrounded Steer Calves

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Beef cattle producers are often faced with the decision of whether or not to deworm their livestock. In North Dakota, however, parasite research is very limited and those cattlemen who do use worming products do so based on very little local research. To date three worming experiments have been conducted at this station. One was a feedlot finishing study and two are pasture worming studies. Analysis of data in these studies has shown no advantage for deworming, except in therapeutic cases under the direction of a veterinarian, while adding unnecessary overhead costs to production. Under feedlot finishing conditions, it has been suggested that high energy rations cause the normal worm population to go into a quiescent state. Deworming during the backgrounding phase of production still remains to be investigated. It is possible that calves being grown on rations containing more roughage would be more likely to respond to worming.

Since worming has not been studied to any great extent in this geographical region, worm egg shedding during the winter and spring months from January to mid May needs to be monitored. Precise timing of worming isn't well defined and therefore, by monitoring fecal egg shedding, speciation and species fluctuation, baseline data will be obtained that will be useful in designing future research, with the objective of identifying the optimum time for worming.

Another objective of this study is to evaluate the ability of fenbendazole to kill arrested fourth stage larvae of Ostertagia ostertagi.

Numerous experiments throughout this country, and at this station, have shown the currently available growth promoting ear implants to be economically effective. No research has been conducted comparing the new fenbendazole wormer Safe-Guard[®] when used in combination with Compudose[®].

To test the products being compared, straightbred Hereford and Angus X Hereford crossbred steer calves averaging 530 to 600 pounds respectively were randomly assigned by breed class to one of the following four treatments: Control, worm only with Safe-Guard[®], implant only with Compudose[®], and both wormed and implanted.

Those animals wormed with Safe-Guard[®] received 2.3 ml of drug suspension per 100 lbs. of body weight on January 19, 1984. On the average, each calf was given 12.5 to 13 ml of drug suspension using a "no waste" dosing gun.

Treatments receiving ear implants were given a single 24 mg estradiol implant which was deposited under the skin on the backside of the middle one-third of the ear.

The calves were weighed at 28 day intervals and fecal samples taken. Fecal samples were analyzed by Dr. Myron Andrews, DVM and his technician, Mary Hansen, at the Veterinary Diagnostic Laboratory, N.D.S.U.

The ration fed was very simple consisting of 42.15% chopped hay, 55% barley, .5% dicalcium phosphate and 2% trace mineral salt.

Summary:

Worming backgrounded Hereford and Angus X Hereford steers in a 119 day growth study did not result in faster and more efficient gains. Using the worming product Safe-Guard® reduced worm egg shedding and cultured larvae to zero during the first half of the study. Shedding and numbers cultured began to increase during the last half of the study indicating that the arrested 4th stage larvae of *Ostertagia ostertagi* was not affected by the drug fenbendazole. Culturing revealed five species of worms: Brown stomach worm (*Ostertagia ostertagi*), small stomach worms (*Cooperia punctata* and *C. oncophora*), small stomach worm (*Trichostrongylus axei*), and the threadnecked intestinal worm (*Nematodieris*). Of these five species only the two species of small stomach worms and the brown stomach worm appeared in any numbers.

Implanting had the greatest impact on daily gains and feed efficiency. Hereford and Angus X Hereford steers implanted and wormed posted the highest daily gains and greatest improvement in feed efficiency. When compared to the steers that were wormed only, it appears that the improvement in performance strongly favors the effects of implanting and not worming. Analysis of the data presented here shows that worm burdens present in these test steers were not great enough to have had a detrimental effect on growth performance.

Worming and implanting among both the Hereford and Angus X Hereford steers resulted in a net return of \$15.94 more per head for the Herefords and \$11.77 more per head for the crossbreds when compared to the control steers.

Figure 1: Summary of Average Number of Worm Larvae Cultured from Combined Lots (For Compudose Implant)

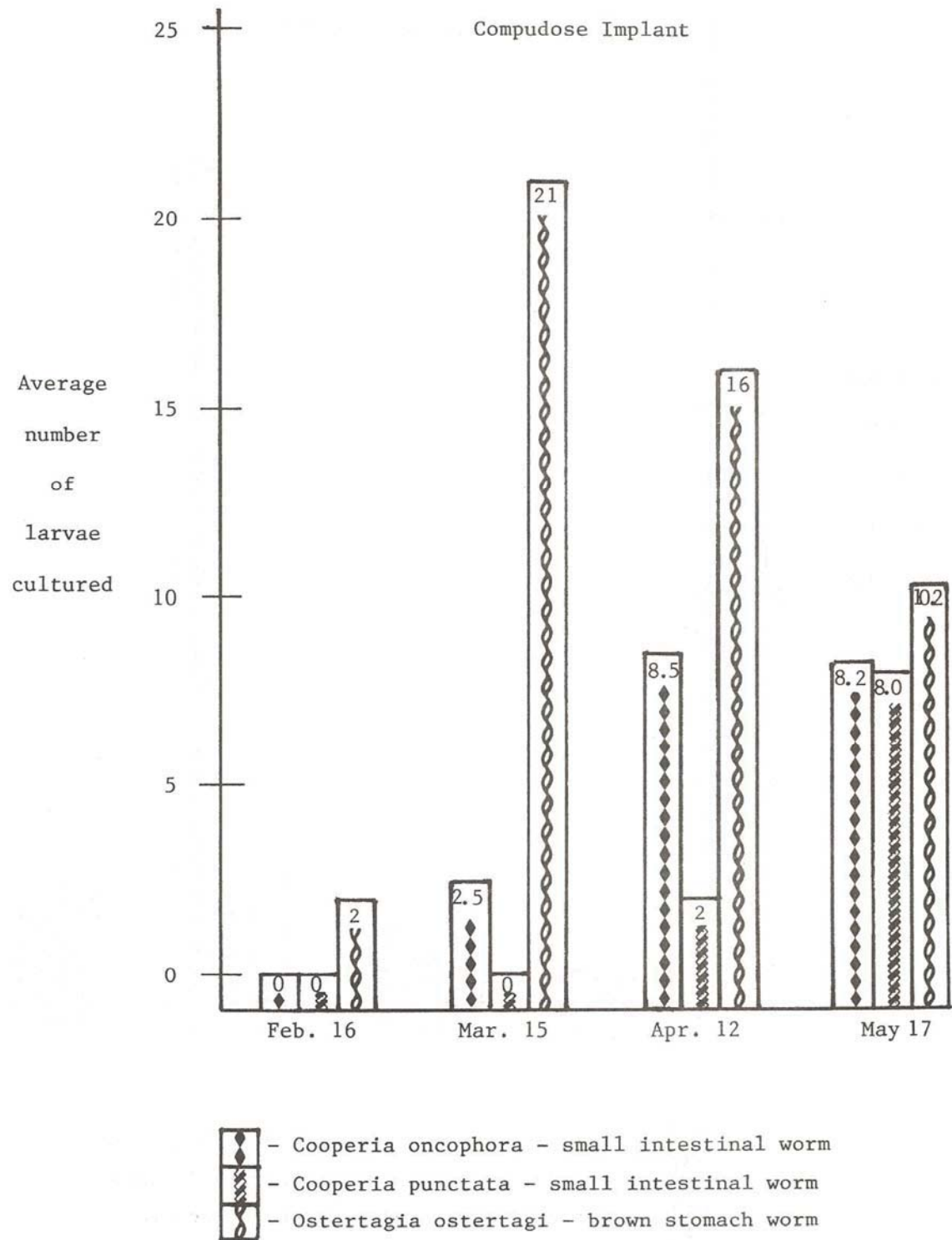


Figure 2: Summary of Average Number of Worm Larvae Cultured from Combined Lots. (For Safe-Guard / Compudose)

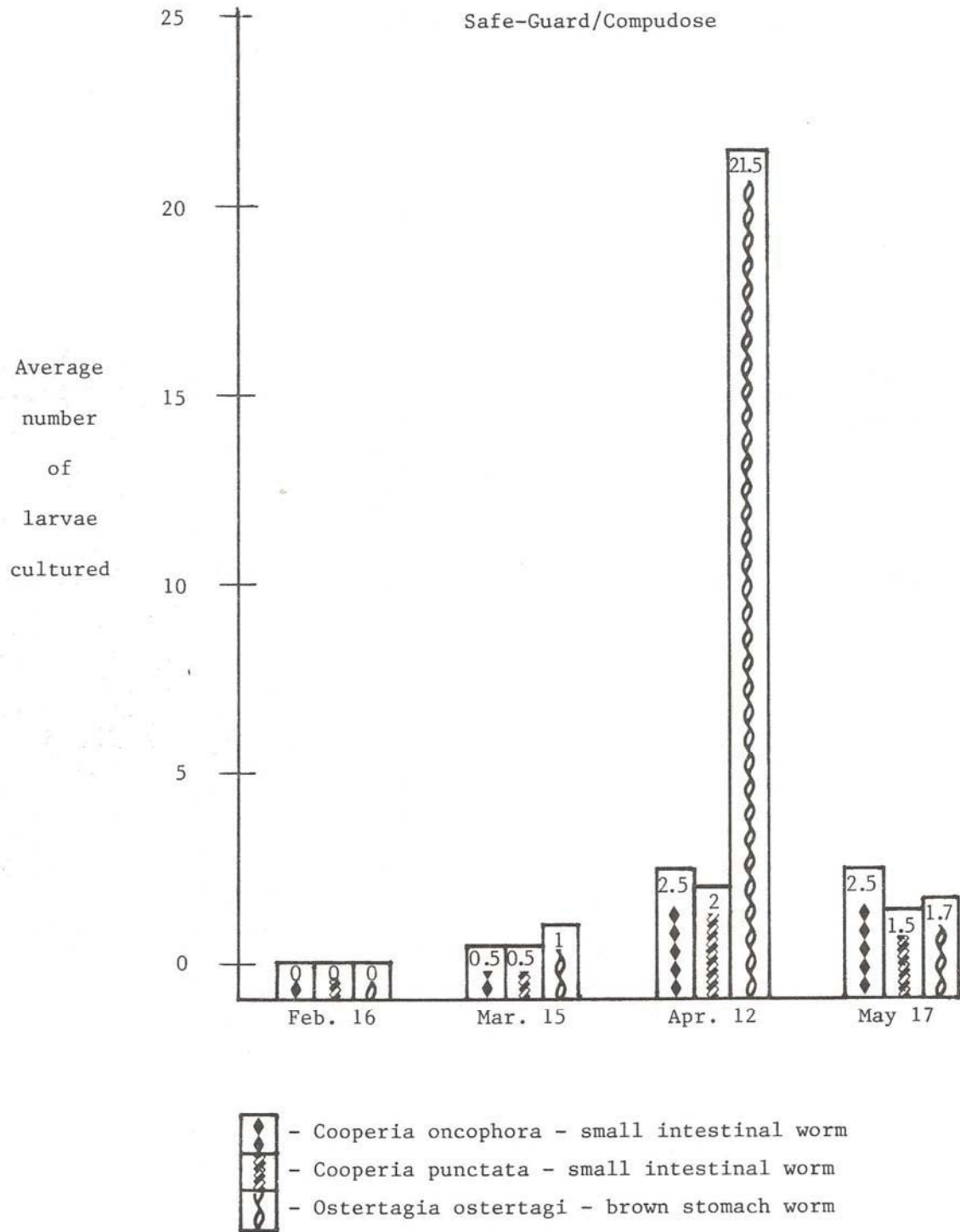


Figure 3: Summary of Average Number of Worm Larvae Cultured from Combined Lots (For Control)

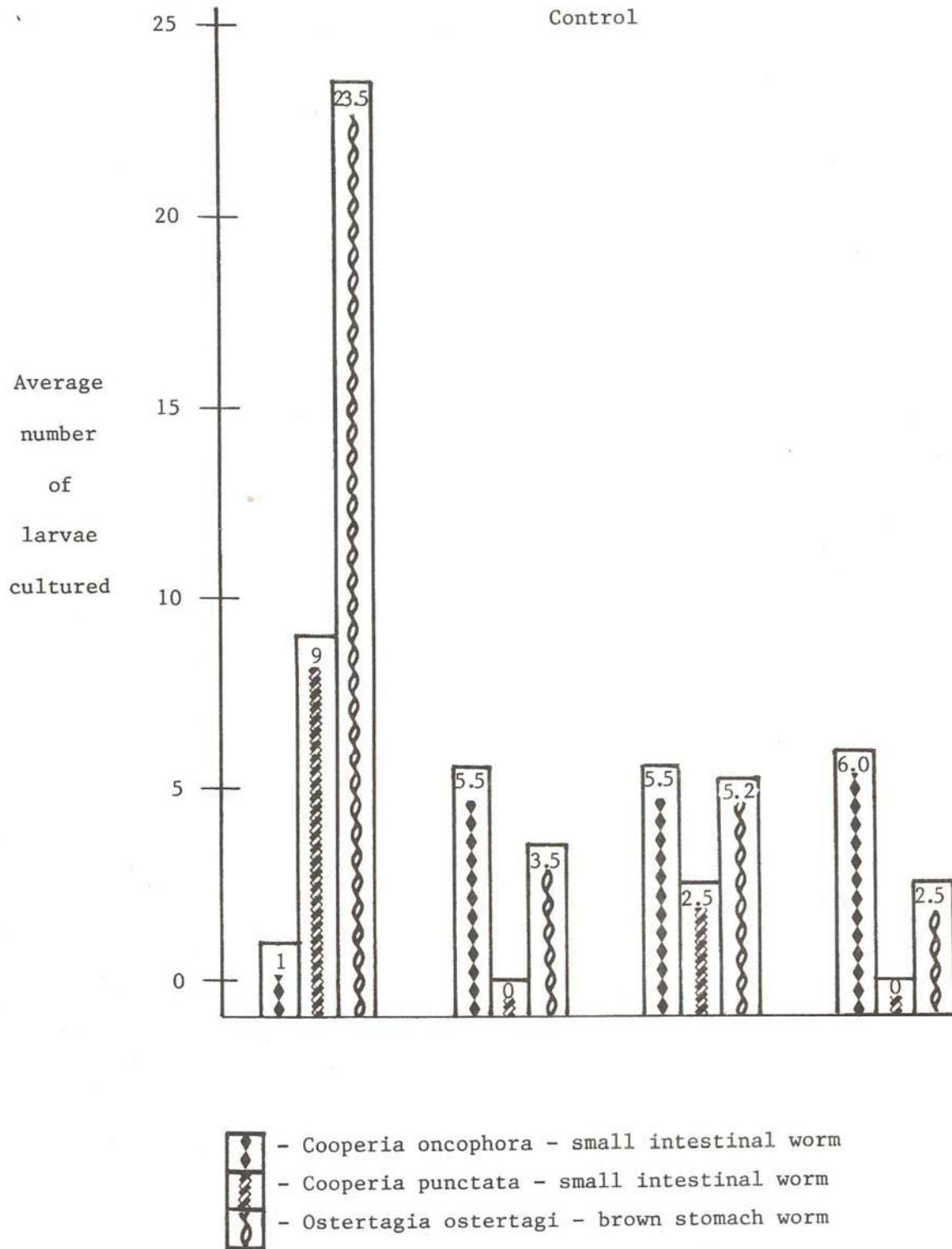


Figure 4: Summary of Average Number of Worm Larvae Cultured from Combine Lots (For Wormed with Safe-Guard®)

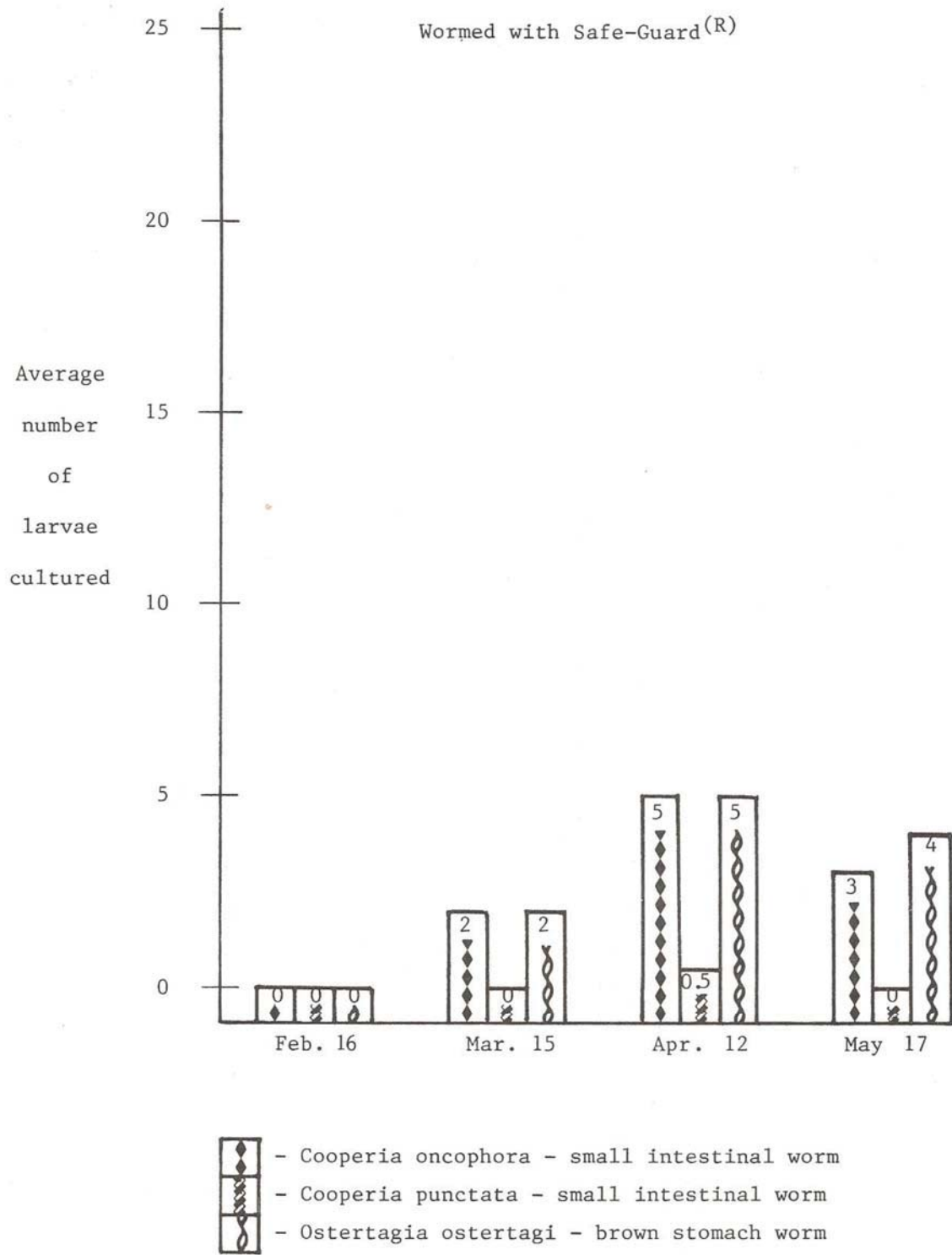


Table 1. Summary of Angus X Hereford Steers Backgrounded to Compare Worming with Safe-Guard[®], Implanting with Compudose[®], and the Two Products Combined

Angus X Hereford Steers	Control	Safe Guard[®]	Compudose[®]	Safe-Guard[®] Compudose[®]
No. Head	6	6	6	5 <u>1/</u>
Days Fed	119	119	119	119
Initial Wt., lbs.	606	603	599	592
Final Wt., lbs.	874	886	893	913
Gain, lbs.	268	283	294	321
A.D.G., lbs.	2.25	2.38	2.47	2.69
Feed/Day, lbs.	20.7	23.2	23.9	22.2
Feed/lb. gain, lbs.	9.2	9.75	9.68	8.26
% Improvement	0	+5.9%	+5.2%	-10.2%
Feed Cost/Cwt. gain, \$	37.12	39.35	39.06	33.33
Avg. Selling Price/Cwt., \$	57.97	57.97	57.97	57.97
Avg. Value Head, \$	506.65	513.61	517.67	529.26
Feed Cost/Steer, \$	99.39	111.49	114.79	106.83
Implant Cost/Steer, \$	----	----	2.10	2.10
Worming Cost/Steer, \$	----	1.30	----	1.30
Return Over Expenses, \$	407.26	400.82	400.78	419.03
Difference Compared to Controls, \$		-6.44	-6.48	+11.77

1/ One steer died of heart failure.

Table 2. Summary of Hereford Steers Backgrounded to Compare Worming with Safe-Guard[®], Implanting with Compudose[®], and the Two Products Combined

Hereford Steers	Control	Safe-Guard[®]	Compudose[®]	Safe-Guard[®] Compudose[®]
No. Head	6	6	6	6
Days Fed	119	119	119	119
Initial Wt., lbs.	544	532	523	541
Final Wt., lbs.	817	796	848	868
Gain, lbs.	273	264	325	327
A.D.G., lbs.	2.29	2.21	2.73	2.75
Feed/Day, lbs.	18.9	18.2	21.0	21.0
Feed/lb. gain, lbs.	8.23	8.26	7.69	7.63
% Improvement	0	0	-6.6%	-7.3%
Feed Cost/Cwt. gain, \$	33.21	33.32	31.03	30.79
Avg. Selling Price/Cwt. \$	57.97	57.97	57.97	57.97
Avg. Value/Head, \$	473.61	461.44	491.58	503.17
Feed Cost/Steer, \$	90.58	87.65	100.94	100.80
Implant Cost/Steer, \$	----	----	2.10	2.10
Worming Cost/Steer, \$	----	1.30	----	1.30
Return Over Expenses, \$	383.00	372.49	388.54	398.97
Difference Compared to Controls, \$		-10.54	+5.51	+15.94