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D. L. Whittington
South Dakota State University

G. Kuhl

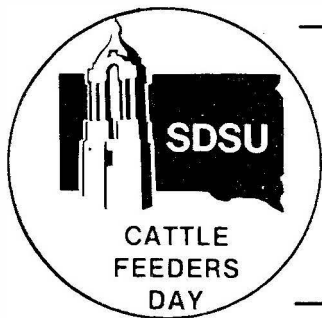
A. Dittman

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PREWEANING AND POSTWEANING PERFORMANCE OF
CROSSBRED CALVES¹--0, 1 OR 2 RALGRO² IMPLANTS

D. L. Whittington, G. Kuhl³ And A. Dittman

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Summary

The preweaning performance of 221 steer and heifer calves given differing numbers of Ralgro implants was evaluated. The steer and heifer calves given one implant had an additional 23 and 33 lb weaning weight compared to those receiving no implant. No additional response was shown by steer calves receiving a second implant 100 days after the first was given. Average daily gains during the 105-day growing period were not significantly faster than those receiving two implants during the 103-day finishing phase.

This work supports other studies indicating that implanting calves at weaning time is an economical management practice. The work further indicates to feeders that calfhod implants have little or no effect on subsequent performance in the feedlot.

Introduction

Although a great deal of work has been done with Ralgro implants identifying their benefit for varying ages of cattle, there has been no work in South Dakota to demonstrate these benefits throughout the lifetime of a calf. Therefore, this series of trials was done to evaluate the performance of beef calves receiving varying number of Ralgro implants during calfhod and to follow the performance of steer calves through to slaughter to identify the possible effects of previous implant treatments.

Procedures

On May 15, 1980, 111 steers and 110 heifer calves belonging to Dennis Ruzicka, Highmore, South Dakota, were randomly allotted to evaluate the effect of Ralgro implants on calf performance. The calves were out of large cross-bred cows and Gelbvieh bulls. Twenty-three steer and 22 heifer calves received no implant throughout the study. Forty-three steers and 86 heifers received an implant in the base of the ear on May 15 when calves were being branded, dehorned and castrated before going on summer pasture. Forty-five steer calves were implanted at branding and received a second implant on August 21, 1980, 98 days after receiving the initial implant.

¹Trial conducted at Dennis Ruzicka Ranch, Highmore, South Dakota and James²Valley Experiment Farm, Redfield, South Dakota.

²Gratitude is expressed to Dr. John Bonner of International Minerals and Chemical Corporation for furnishing the Ralgro implants.

³Gerry Kuhl is currently Beef Cattle Extension Specialist, Kansas State University, Manhattan, Kansas.

Initial weights were taken on May 15. An intermittent weight was taken on August 21 and final weight was taken at weaning on October 10. All weights were full body weights. The entire study period was 167 days.

The calves were born between March 26 and May 9. On May 15 they were turned on to native range with their dams. The calves were given access to a commercial pelleted creep feed. All calves were handled similarly and maintained on similar range throughout the study.

At weaning the steer calves were purchased to be fed out at the Redfield Experiment Station. Seventy-two of the steers were allotted by shrunk weight taken November 25 and previous treatment (0, 1 or 2 implants) into six pens to evaluate a commercial high "by-pass" protein supplement. The 105-day growing period ended on March 11 and a shrunk weight was taken to end the growing phase and start the 103-day finishing phase. The steers were shrunk and weighed off test to go to slaughter on June 6. Carcass data were collected at the slaughter plant.

The growing ration consisted of corn silage plus 2 lb of shelled corn plus 1 lb or 1½ lb of protein supplement depending on the treatment. The same finishing ration was fed to all steers which was 80% shelled corn plus 20% ground oat hay plus 1.5 lb of a 55% "by-pass" protein which contained 25% protein equivalent from urea and 300 mg of rumensin per pound.

All steers were implanted irregardless of previous treatment on November 25, 1980, and April 8, 1981. Therefore the steers in the growing and finishing phase had received 2, 3 or 4 Ralgro implants throughout their lifetime.

Results

Table 1 shows the performance of 0, 1 and 2 Ralgro implants on steer calves and 0 and 1 Ralgro implants on heifer calves in the preweaning phase of the study. Steers given one implant gained significantly faster (.15 lb/day) than the unimplanted control steers. Steers given two implants gained significantly faster (.13 lb/day) than controls but did not differ in gain from the steers receiving one implant. The heifers given one implant gained significantly faster (.2 lb/day) than those receiving no implants.

TABLE 1. PREWEANING PERFORMANCE OF CROSSBRED STEER AND HEIFER CALVES RECEIVING 0, 1 OR 2 RALGRO IMPLANTS

Item	No implants		One implant		Two implants
	Steers	Heifers	Steers	Heifers	Steers
No.	23	22	43	86	45
Wt. 5/15, lb	153.8	141.7	147.6	153.4	146.9
Wt. 10/29, lb	529.3	497.9	548.2	542.9	543.9
Gain, lb	375.5	356.2	400.6	389.5	397.0
Advantage	---	---	25.1	33.3	21.5
Average daily gain, lb	2.25 ^a	2.13 ^a	2.40 ^{ab}	2.33 ^{ab}	2.38 ^{ab}

^{a,b} Column values with different superscripts are significantly different (P<.05).

Although the differences in average daily gain seem small, the additive effect across the 167-day study is economically important. Those steers and heifers receiving one implant gained an additional 25 and 33 lb total, respectively. On a \$75 feeder calf market, this is worth an additional \$18 to \$25. This work agrees with many research findings indicating a 20 to 30 lb response from one Ralgro implant.

Other workers have found that two Ralgro implants given 100 days apart will be worth from 15 to 25 lb per implant. However, this study would not support this as there was no additional response to the second Ralgro implant.

Table 2 presents a comparison of the feedlot performance of steer calves given 0, 1 and 2 implants during the preweaning phase. Average daily gains during the 105-day growing period did not differ significantly, although the steers which had received either one or two implants during calthood gained slightly faster (2.19 vs. 2.10) than steers receiving no implant. In the 103-day finishing phase, steer calves receiving no Ralgro implant as a calf gained significantly better than those receiving two implants (3.02 vs 2.73) and gained better than those receiving one implant (3.02 vs. 2.76). However, this difference was not significant.

TABLE 2. POSTWEANING PERFORMANCE OF CROSSBRED STEER CALVES RECEIVING 0, 1 OR 2 IMPLANTS PREWEANING

Item	C		
	Calthood implant treatment		
	0	1	2
No. steers	20	24	28
Beg. wt 11/25, 1b	577.7	575.6	581.5
End growing period, 3/11, 1b	798.7	804.1	813.3
ADG, growing period (105 days)	2.10	2.18	2.21
Finished wt, 6/22, 1b	1110.4	1088.3	1094.4
ADG, finishing period (103 days)	3.02 ^a	2.76 ^a	2.73 ^b
ADG, accumulative (208 days)	2.56	2.47	2.47
Carcass data			
Carcass wt, 1b	668.7	659.7	664.3
Fat thickness, in	.37	.36	.38
Loin eye area, (sq in)	13.26	12.94	13.06
Quality grade ¹	5.95	6.00	5.61
Yield grade	2.25	2.39	2.25

¹5 = low choice, 6 = high good.
^{a,b}Column values with different superscripts are significantly different (P<.05).

The apparent compensatory gain observed by the steers not receiving Ralgro implants as a calf has not been found by other research workers. Generally speaking, the accumulative work has shown an additional response to Ralgro with every implant.

There were no apparent or significant effects on the carcasses. The steers could have been fed another 30 days to a higher quality grade without affecting yield grade.