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# Effect of using one versus two growth-promoting implants during the suckling period on the weaning weights of nursing calves

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## Effect of Using One Versus Two Growth-promoting Implants During the Suckling Period on the Weaning Weights of Nursing Calves

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### Summary

Three trials were conducted to study the effect on calf weight gains from using two 36-mg. Ralgro implants during the suckling period.

Two Ralgro implants 60 to 90 days apart improved the average weight gain during the suckling period by 39.4, 43, and 46.6 pounds for the three trials. A single Ralgro implant improved suckling gains by 33.5, 22.1, 28.4 and 27.9 lbs. for the four test groups. Ralgro implants used at birth gave the same response as when first used when calves were 4 months old. A 15-mg. DES implant used in trial one improved suckling gains 23.4 lbs.

These results suggest that at least one implant during the suckling period is a management practice cow-herd operators cannot afford to forego. Two implants during the suckling period gives an even more economical response.

### Introduction

Previous research here and at other Universities showed that implants like DES or Ralgro during the suckling period improved weaning weights 15 to 25 pounds. A year ago (Prog. Rpt. 291) we reported that one 36-mg. Ralgro implant improved weaning weight 8.4 pounds, but that implanting with a 36-mg. Ralgro implant within 1½ months of birth and again 70 days later improved weaning weights 43 pounds.

Since two implants during the suckling period substantially improved weaning weights, we conducted three additional trials this year to verify the previous results.

### Experimental Procedure

Trial 1. One hundred and twenty-five Polled Hereford, Hereford, or Simmental heifer calves were divided into four groups based on breed and

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<sup>1</sup>County Agent in Cherokee Co. who conducted Trial 2.

<sup>2</sup>NW Area Livestock Specialist who along with Russell Co. Agent, Dell Jepsen conducted Trial 3.

<sup>3</sup>Appreciation is expressed to the IMC Chemical Corp. for implants and funding support and to Moore Johnson, Columbus, Kansas and the Haise Ranch at Russell, Kansas for serving as cooperating ranches.

age. The four treatments were:

- Treatment 1 -- Control group - not implanted.
- Treatment 2 -- One 36-mg. Ralgro implant when the calves were approximately 2 months old.
- Treatment 3 -- One 15-mg. DES implant when the calves were approximately 2 months old.
- Treatment 4 -- Two 36-mg. Ralgro implants, one when the calves averaged 27 days of age and the second 89 days later.

The Polled Hereford heifer calves suckled cows on native grass; the Hereford and Simmental heifer calves suckled cows confined in drylot. All calf weights recorded were full weights directly off the cow.

Trial 2. Twenty-seven steer calves and 39 heifer calves were grouped by sex and randomly allotted to three groups:

- Treatment 1 -- Control group - not implanted.
- Treatment 2 -- One 36-mg. Ralgro implant at the start of the trial on November 19, 1976, when the calves were approximately 2 to 3 months old.
- Treatment 3 -- Two 36-mg. Ralgro implants, one at the start of the trial on November 19, 1976, and the second 63 days later.

The trial was conducted on the Moore Johnson farm at Columbus, Kansas. The calves were mixed Hereford and Angus crossbred calves and were 2 to 3 months old at the start of the trial on November 19, 1976. The trial ran for 152 days and all calf weights recorded were full weights directly off the cow.

Trial 3. Seventy-seven steer calves were randomly assigned at birth to one of four groups:

- Treatment 1 -- Control group - not implanted.
- Treatment 2 -- One 36-mg. Ralgro implant when the calves were approximately 4 months old.
- Treatment 3 -- One 36-mg. Ralgro implant at the time the calves were born.
- Treatment 4 -- Two 36-mg. Ralgro implants, one at birth and the second implant when the calves were approximately 4 months old (second implant given when group 2 calves were initially implanted).

The trial was conducted at the Haise Ranch near Russell, Kansas. The Hereford-Angus calves were born predominately during the month of March. All calves were weighed 3 times: at birth, July 26 when treatment 2 and 4 calves were implanted, and at weaning time October 21. All calf weights recorded were full weights directly off the cow. All calves were castrated May 10.

### Results

Trial 1. Heifer calves receiving one 36-mg. Ralgro or one 15-mg. DES implant gained 33.5 and 23.4 pounds more, respectively, by the end of the suckling period than calves not implanted. The responses are slightly higher than responses in previous trials. Calves receiving two 36-mg. Ralgro implants 80 days apart gained 39.4 pounds more than the non-implanted calves, which is consistent with last year's 43 extra pounds.

No side effects from any implant were observed. Most of the heifer calves will be saved as replacement heifers to see if implants affect later breeding. However, implanting replacement heifers at any time is not a recommended practice.

Trial 2. Calves receiving one 36-mg. Ralgro implant were 22.1 lbs. heavier at weaning than non-implanted calves while calves receiving two implants 63 days apart were 53 lbs. heavier at weaning than calves not implanted. After 63 days implanted calves were significantly heavier than calves not implanted.

No side effects were observed during the trial.

Trial 3. Steer calves implanted once either at birth or when 4 months old with 36-mg. of Ralgro gained 27.9 lbs. and 28.4 lbs. more from birth to weaning than non-implanted calves. Calves receiving two implants during the suckling period gained 46.6 lbs. more weight from birth to weaning than non-implanted calves which is similar to their response in trials 1 and 2.

No side effects were observed.

Table 5.1. Gains of the calves during the suckling period in Trial 1.

| Treatment   | No. calves | Average age at implanting | No. days implanting to weaning | Birth weight | Weaning wt.* | Gain birth*-weaning lbs. | Treatment advantage |
|---|------------|---------------------------|--------------------------------|--------------|--------------|--------------------------|---------------------|
| Not implanted                                     | 31         | --                        | --                             | 70.5         | 416.5        | 346.0                    | --                  |
| One 36-mg. Ralgro implant during suckling period  | 32         | 61                        | 136                            | 68.9         | 448.4        | 379.5**                  | +33.5**             |
| One 15-mg. DES implant during suckling period     | 31         | 61                        | 136                            | 72.8         | 442.2        | 369.4**                  | +23.4**             |
| Two 36-mg. Ralgro implants during suckling period | 31         | 27                        | 173                            | 74.8         | 460.4        | 385.6**                  | +39.4**             |

\*Weaning weights and pounds gained were adjusted based on age of calf.

\*\*P<.05.

Table 5.2. Gains of the calves during the suckling period in Trial 2.

| Treatment                     | Wt. at<br>start of<br>trial | No.<br>calves | Wt. at<br>weaning  | Wt.<br>gain        | Treatment<br>advantage |
|-------------------------------|-----------------------------|---------------|--------------------|--------------------|------------------------|
| Not implanted                 | 161.6                       | 22            | 396.8 <sup>a</sup> | 235.2 <sup>a</sup> |                        |
| One 36-mg.<br>Ralgro implant  | 178.1                       | 24            | 435.4 <sup>b</sup> | 257.3 <sup>b</sup> | +22.1 <sup>a</sup>     |
| Two 36-mg.<br>Ralgro implants | 175.5                       | 20            | 464.8 <sup>c</sup> | 289.3 <sup>c</sup> | +53.1 <sup>b</sup>     |

a,b,c Means in the same column with different superscripts differ significantly ( $P < .05$ ).

Table 5.3. Weight gains of calves during suckling period in Trial 3.

| Treatment                              | No. calves | Birth wt. | Wt. 7-26* | Wt. 10-21** | Gain-birth to 7-26 | Gain-7-26 to 10-21 | Gain-birth to 10-21 | Treatment advantage |
|--|------------|-----------|-----------|-------------|--------------------|--------------------|---------------------|---------------------|
| Non-implanted control                  | 21         | 69.7      | 320.9     | 452.6       | 251.2              | 131.6 <sup>a</sup> | 382.8 <sup>a</sup>  | --                  |
| At approximately 4 mos. of age         | 20         | 73.3      | 319.0     | 484.6       | 245.6              | 165.6 <sup>b</sup> | 411.2 <sup>b</sup>  | +28.4 <sup>a</sup>  |
| One 36-mg. Ralgro implant at birth     | 18         | 73.9      | 336.7     | 484.1       | 263.3              | 147.4 <sup>a</sup> | 410.7 <sup>b</sup>  | +27.9 <sup>a</sup>  |
| Two 36-mg. implant at birth and 4 mos. | 18         | 72.0      | 337.2     | 500.9       | 265.2              | 163.7 <sup>b</sup> | 428.9 <sup>c</sup>  | +46.6 <sup>b</sup>  |

a,b,c Means in the same column with different superscripts differ significantly ( $P < .05$ ).

\*Calves in treatment 2 and 4 implanted.

\*\*Calves weaned and weights adjusted to eliminate any variation due to calf's age.