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Effect of various levels of Ralgro on reproductive performance of yearling heifers

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Effect of Various Levels of Ralgro¹ on Reproductive Performance of Yearling Heifers



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Summary

Implanting heifers at weaning time with 12, 24, or 36 mg of Ralgro did not affect reproductive performance of the heifers when bred as yearlings.

However, using growth promoting implants with replacement heifers is not recommended.

Introduction

Trials in the United States and overseas have shown that Ralgro improves gain and feed efficiency of feedlot heifers from 0 to 20%. However, data are limited on how Ralgro affects reproductive performance of heifers. At Purdue, 36 mg of Ralgro at weaning time increased rate of gain but decreased reproductive performance slightly, and 72 mg further decreased reproductive performance. Recent data from Montana compared heifers implanted at weaning and approximately 100 days later with heifers not implanted. First-year results showed no effect on reproductive performance, with a slight reduction the next year.

We studied the effects of 12, 24, and 36 mg of Ralgro at weaning on weight gains, pelvic area, and reproductive performance of yearling heifers.

Experimental Procedure

The trial involved 105 Angus heifers on the Gene Gates² ranch at Coldwater, Kansas.

On October 17, 1978, the heifers were weighed, weaned, and randomly assigned into one of four treatments in table 7.1. At weighing and implanting, the heifers were 9 to 10 months old.

After they were weaned, the heifers were maintained as one group throughout the trial. On February 7, 1979, they were re-weighed and the pelvic

¹Ralgro (Zeranol acetate) is a product of International Minerals & Chemical Corporation.

²Appreciation is expressed to Comanche County rancher Gene Gates for use of cattle and help in conducting the trial.

area was measured. On March 29, 1979, they were bred by AI for about 30 days, and then exposed to a bull for another 35 days. On August 7, 1979, conception rates were determined by palpation.

Results and Discussion

Effects of Ralgro (12, 24, 36 mg) on weight gain (113 days), pelvic area, and reproduction are shown in table 7.1.

Heifers receiving 24 mg of Ralgro were 18.2 pounds heavier (22% more gain) than controls. In contrast to previous research, 36 mg of Ralgro did not increase weight gain. Both 24 mg and 36 mg of Ralgro increased the pelvic area.

Percentages of heifers detected in heat the first 21 days of the breeding season ranged from 76.9 for those receiving 36 mg of Ralgro to 88.5 for those receiving 12 mg. Overall conception rate was 95.2%. Using 36 mg of Ralgro reduced conception rate 7.8% below controls. This difference was not statistically significant. None of three heifers detected open in the 36-mg Ralgro group had cycled during the 21-day AI period.

Table 7.1. Effects of indicated levels of Ralgro on weight gains, pelvic area, and reproductive performance of yearling heifers.

Ralgro	No. heifers	Start. wt, lbs	Final wt, lbs	Lbs. gained	Pelvic area (sq cm)	Conception, %	Detected in heat 1st 21 days, %
0	27	524.0	614.6	90.6 ^b	158.6 ^b	96.3	81.5
12 mg	26	522.5	608.7	86.2 ^b	159.3 ^b	100.0	88.5
24 mg	26	508.1	616.9	108.8 ^a	173.0 ^a	96.2	84.6
36 mg	26	515.9	605.3	89.4 ^b	172.1 ^a	88.5	76.9

^{a, b} Means in columns with different superscripts are significantly different ($P < .05$).