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Abstract

A 150-day field study was conducted to evaluate single vs. reimplant strategies for stocker heifers grazing irrigated smooth bromegrass. Three hundred forty-three previously nonimplanted British crossbred heifers averaging 494 lb were assigned to one of seven treatments: 1) no implant-control (NC), 2) Revalor-G® (REVG), 3) Ralgro® (RAL), 4) Synovex-H® (SYNH), 5) REVG/REVG, 6) RAL/RAL, and 7) SYNH/SYNH. Reimplanting (Treatments 5, 6, and 7) was done on day 75 of the trial. In the first 75 days, all implants increased ($P < .05$) average daily gain (ADG) compared to NC. For the last 75 days (days 75 through 150), heifers implanted with REVG, REVG/REVG, RAL/RAL, and SYNH gained faster ($P < .05$) than NC or those implanted with RAL, and SYNH/SYNH. No significant differences occurred among the latter three treatments. Over the entire trial, there was no advantage to reimplanting heifers with REVG or RAL. SYNH/SYNH heifers gained less ($P < .05$) than their single-implanted counterparts.

Keywords

Cattlemen's Day, 1997; Kansas Agricultural Experiment Station contribution; no. 97-309-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 783; Beef; Growth implant; Revalor-G; Ralgro; Synovex; Heifers; Pasture

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**EFFECT OF REVALOR-G ON THE PERFORMANCE OF
STOCKER HEIFERS GRAZING IRRIGATED,
SMOOTH BROMEGRASS PASTURE FOR A FULL SEASON ¹**

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Summary

A 150-day field study was conducted to evaluate single vs. reimplant strategies for stocker heifers grazing irrigated smooth brome grass. Three hundred forty-three previously nonimplanted British crossbred heifers averaging 494 lb were assigned to one of seven treatments:

- 1) no implant-control (NC),
- 2) Revalor-G® (REVG),
- 3) Ralgro® (RAL),
- 4) Synovex-H® (SYNH),
- 5) REVG/REVG,
- 6) RAL/RAL, and
- 7) SYNH/SYNH.

Reimplanting (Treatments 5, 6, and 7) was done on day 75 of the trial. In the first 75 days, all implants increased ($P < .05$) average daily gain (ADG) compared to NC. For the last 75 days (days 75 through 150), heifers implanted with REVG, REVG/REVG, RAL/RAL, and SYNH gained faster ($P < .05$) than NC or those implanted with RAL, and SYNH/SYNH. No significant differences occurred among the latter three treatments. Over the entire trial, there was no advantage to reimplanting heifers with REVG or RAL. SYNH/SYNH heifers gained less ($P < .05$) than their single implanted counterparts.

(Key Words: Growth Implant, Revalor-G, Ralgro, Synovex, Heifers, Pasture.)

Introduction

Growth-promoting implants have been adopted widely by cattle producers to enhance the performance of grazing stockers. Revalor-G is a newly approved anabolic agent for grazing cattle. However, no published research is available comparing REVG to traditional estrogenic implants for grazing heifers.

The objectives of this 150-day field study were to document the comparative effectiveness of REVG (40 mg trenbolone acetate and 8 mg estradiol), RAL (36 mg zeranol), and SYNH (20 mg estradiol benzoate and 200 mg testosterone propionate) as growth promotants for yearling heifers grazing irrigated smooth brome grass pasture, using either single-dose or reimplant strategies.

Experimental Procedures

Three hundred forty-three heifers purchased in Mississippi were assembled 4 weeks prior to trial initiation. Upon arrival, they were vaccinated against common viral and bacterial diseases. At trial initiation, all heifers were weighed individually (unshrunk) on 2 consecutive days, identified with a tag in each ear, dewormed, checked for evidence of prior implants, allotted to the seven treatments randomly within weight blocks, implanted according to manufacturers' recommendations, and dewormed. At the onset of the study, the smooth Brome grass pasture (115 acres with

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center pivot irrigation) was separated into four equal paddocks. All calves were rotated to a different paddock every week through the midtest period. The stocking rate up to the midtest period was 1800 lb liveweight per acre. Because of hot weather, the stocking rate was reduced to 900 lb liveweight per acre during the last 75 days of the trial. This was accomplished by sorting each treatment into two groups and placing them on two adjacent irrigated pastures.

On day 75, heifers were gathered and individually weighed, and appropriate treatment groups were reimplanted. Approximately 10 weeks prior to the end of the study, all heifers received 7 lb weekly of a wheat middlings-based cube containing GAINPRO® fed three times per week in prorated amounts. At the end of the study, all heifers were weighed on 2 consecutive days. Two heifers were removed because of health problem unrelated to implant treatment. The individual animal was the experimental unit for statistical analysis of weight gain data.

Results and Discussion

All implant treatments improved ($P < .05$) gain compared to NC heifers during the

first 75 day of the trial (Table 2), and no significant differences ($P > .05$) occurred among implant treatments. For the last 75 days (days 75 through 150), heifers implanted with REVG, REVG/REVG, RAL/RAL, and SYNH gained faster ($P < .05$) than NC or those implanted with RAL, and SYNH/ SYNH. The REVG/REVG treatment resulted in only slightly greater gain (.09 lb/day) than its single-implant counterpart (REVG). During the last half of the study, reimplanted RAL/RAL heifers gained faster ($P < .05$) than RAL heifers. Those receiving SYNH/SYNH during the last 75 days gained slower ($P > .05$) than single-implant counterparts (SYNH). Although buller activity was not seen in any treatment, SYNH/SYNH heifers exhibited above normal udder development and elevated tailheads.

Table 1. Nutritional Composition of Experimental Supplement^a

| Item | Percent, Dry Matter Basis |
|---------------|---------------------------|
| Dry matter | 88.29 |
| Crude protein | 24.00 |
| Crude fiber | 14.60 |
| Ether extract | 2.05 |
| Calcium | 2.46 |
| Phosphorus | .84 |

Table 2. Effect of Implant Treatment on Stocker Heifer Average Daily Gain

| Treatment | Days 1 - 75 | Days 75 - 150 | Days 1 - 150 |
|---------------------|--------------------|-------------------|---------------------|
| | ----- lb/day ----- | | |
| Control | 1.94 ^a | 1.22 ^a | 1.58 ^a |
| Revalor-G | 2.22 ^b | 1.39 ^b | 1.81 ^b |
| Revalor-G/Revalor-G | 2.19 ^b | 1.48 ^b | 1.83 ^b |
| Ralgro | 2.13 ^b | 1.25 ^a | 1.69 ^c |
| Ralgro/Ralgro | 2.14 ^b | 1.38 ^b | 1.76 ^{b,c} |
| Synovex-H | 2.22 ^b | 1.41 ^b | 1.82 ^b |
| Synovex-H/Synovex-H | 2.17 ^b | 1.19 ^a | 1.68 ^c |

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