Effect of Ralgro[1] and COMPUDOSE[2,4] on Grazing Steer Performance

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Summary

COMPUDOSE (an estradiol removable implant) increased steer gains during 202 days of grazing by 11.4%. Ralgro implants (once at the beginning of the study) increased gain 8.5%. Steer performance on the two implants was statistically similar.

Introduction

Growth-promoting implants usually result in an 8 to 15% faster gain in growing and finishing cattle. Synovex and Ralgro, the only implants currently approved for beef cattle, cannot be used within 60 and 65 days, respectively, of slaughter. Because both implants have an effective life of about 100 days, reimplanting is necessary for maximum benefits.

COMPUDOSE is a silicone rubber implant that releases estradiol-17β (a naturally occurring hormone) at a controlled rate. Although not currently cleared for use by the Food and Drug Administration, approval is anticipated in early 1982. Because it does contain a naturally occurring hormone, COMPUDOSE is expected to be approved for use without a required withdrawal period.

Procedure

On April 2, 1980, eighty-one Charolais steers averaging 539 lb were allotted thus: 1) control (no implant); 2) 36 mg of Ralgro; 3) COMPUDOSE (a removable, 4.76 mm x 3.0 cm silicone rubber implant containing estradiol-17β). Implants were placed subcutaneously in the median surface of the ear at the beginning of the trial and at no other time was any additional anabolic treatment given. Each COMPUDOSE-implanted steer was checked every 28 days to determine implant losses and was reimplanted if necessary. Steers were observed daily for abnormal behavior, such as "buller" steers. Cattle were grazed in three bromegrass pastures; all treatments were represented equally in each. Supplemental feed was provided equally when forage became short. Initial and final weights were the average of nonshrunk individual weights taken on consecutive days. The study was terminated October 22, 1980.

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[1]Ralgro is the trademark name for zeranol implants produced by International Minerals and Chemical Corp., Terre Haute, IN 47808. Implants provided by IMC.

[2]COMPUDOSE is the trademark name for the estradiol implant produced by Elanco Products Co., Division of Eli Lilly Co., Indianapolis, IN 42606. Implants and partial financial assistance provided by Eli Lilly Co.

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[4]COMPUDOSE is not currently cleared by the FDA for use in cattle.

Results

During the 202-day grazing study, steers implanted with COMPUDOSE gained 11.4% more ($P<.01$) than controls did. Ralgro-implanted steers gained 8.5% more ($P<.05$) (Table 18.1). The gain difference between the two implants was not significant ($P>.20$). Average calculated estradiol-17β release from the COMPUDOSE implants was 49µg per day. The incidence of "buller" steers or other mounting activity was similar among treatments.

Early in the study, several cattle lost their COMPUDOSE implants. Most implants retained for the first 28 days, however, remained for the entire 202 days. At the end of the test, 74% of the original COMPUDOSE implants remained in place.

Table 18.1. Effect of Implants on Steer Performance (202 days)

Item	Implant treatment		
	Control	Ralgro	COMPUDOSE
No. of steers	27	27	26
Initial wt., lb	539	536	540
Final wt., lb	894	922	937
Total gain, lb	355[a,c]	386[b,c,d]	397[b,d]
Average daily gain, lb	1.76[a,c]	1.91[b,c,d]	1.96[b,d]

[a,b]Values in the same row with different superscripts differ significantly ($P<.05$).

[c,d]Values in the same row with different superscripts differ significantly ($P<.01$).