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Effect of Oxytetracycline Hydrochloride Coating Added to Compudose Implants in Grazing Steers¹

Lyle W. Lomas²

Summary

Adding an oxytetracycline coating to Compudose implants did not change their effectiveness. Implanting with Compudose significantly increased gain of grazing steers an average of 17% compared to non-implanted controls.

Introduction

Compudose is a long lasting silicone rubber implant that contains estradiol-17 β . Its payout activity is about two times longer than other growth promoting implants. Previous research has shown that Compudose increases rate of gain in grazing stocker cattle by 9 to 16%.

Retention of the Compudose implant in the ear has been a problem when the implant was administered improperly. Failure to properly cleanse the implant site and disinfect the implanter needle has resulted in infection around the implant, which has been found to be the major factor causing implant loss. Research has shown that cleansing the implant site, disinfecting the implanter needle, and dipping it in a tylosin-neomycin powder reduced infection and thereby improved retention of the implants. This study evaluated the effects of adding an oxytetracycline antibiotic coating to Compudose implants on grazing steer performance.

Procedure

Eighty-one Brangus steers with an average weight of 551 lbs were divided into three weight blocks, with steers in each block assigned randomly to three implant treatments: 1) control - no implants, 2) non-coated Compudose implants, or 3) Compudose implant coated with at least 0.7 mg oxytetracycline hydrochloride powder. The implant needle was disinfected prior to each use with both types of implants and dipped in a tylosin-neomycin powder prior to implanting non-coated Compudose.

¹Implants and partial financial assistance provided by Eli Lilly and Co., Indianapolis, IN.

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All treatments were represented equally in each of the three weight blocks. Each block was assigned to three 10-acre smooth brome grass pastures. Cattle within each block were rotated among the three pastures assigned to that block at two week intervals. Steers in each block has access to an automatic waterer and a mineral feeder containing a mixture of equal parts steamed bone meal and trace mineral salt. Supplemental feed was provided uniformly as needed to maintain an average daily gain of at least one pound. Implants were palpated on days 28 and 56 and steers with missing implants were reimplanted. Implants were palpated again at the end of the study. Sexual behavior (mounting activity) of the steers was monitored daily during the first 28 days of the study. Initial and final weights were taken following a 16 hour shrink from feed and water. The 169 day study ran from May 11 to October 28, 1983.

Results

Results of this study are presented in Table 19.1. Steers implanted with non-coated and oxytetracycline coated Compudose gained 20.3% (51 lb) and 13.7% (33 lb) more ($P<.01$), respectively, than controls. There was no significant ($P>.05$) difference between the two types of Compudose, with an average increase in gain of 17% compared to non-implanted steers.

On day 28 of the study, one oxytetracycline coated Compudose implant was missing and the steer was reimplanted. All implants were present on day 56 and at the end of the study. Two non-coated Compudose implanted steers and one oxytetracycline coated Compudose implanted steer exhibited mounting activity during the first 28 days of the study. No other sexual activity was observed.

Table 19.1. Effect of Oxytetracycline-Coated Compudose on Gains of Grazing Steers (168 days)

Item	Control	Uncoated Compudose	Oxytetracycline Coated Compudose
No. of steers	27	27	27
Initial wt., lb	547	552	554
Final wt., lb	805	861	845
Total gain, lb	258	309	291
Average daily gain, lb	1.53 ^a	1.84 ^b	1.74 ^b

^{a,b} Means with different superscripts differ significantly ($P<.01$).