Dickinson Research Extension Center
1089 State Avenue
Dickinson, ND 58601

Comparison of the effect of Ralgro®, Revalor-G® and Compudose® on yearling beef steers in the Northern Great Plains[abc]

Chip Poland[1], Harvey Peterson[2] and Carl Birkelo[3]

[1]Dickinson R/E Center, North Dakota State University,
[2]Golden Valley Extension, North Dakota State University, Beach, ND
[3]Schering-Plough Animal Health, Union, NJ

Abstract

Growth-promoting implants were compared in yearling steers grazing native range in the Northern Great Plains. Use of implants improved final weight and seasonal gain over non-implanted control steers. Two estrogenic-based implants (Ralgro and Compudose) were not different in their ability to enhance growth performance. A combination androgenic/estrogenic-based implant (Revalor-G) enhanced growth performance over that of the estrogenic-based products. When weight gain is important objective of cattle producers grazing yearling steers, use of growth-promoting implants should be considered.

Introduction

Many producers in southwestern North Dakota graze yearling steers throughout the summer. Economics of this type of enterprise is largely a function of purchase and sale prices and weight gain during the grazing season. Growth implants are often used to enhance average daily gains of grazing steers. Once producers decide to consider implant use in a yearling operation, they have several options regarding product selection during the grazing season. The objective of the this trial was to determine the effect of implant selection (Ralgro®, Revalor-G® and Compudose®) on growth rate of yearling steers grazing predominantly native range pastures in the Northern Great Plains.

Materials and Methods

The trial was conducted at the ranch of Mr. Allen Gasho (801 Highway 16, Beach, ND 58621) in western North Dakota. Three-hundred-

twenty-three (323) predominantly Angus and Angus-X yearling steers grazed in a seasonlong strategy on predominantly native range pastures in 1999. Grazing began on May 12 and continued through August 9 (89 d of grazing). Steers were individually weighed (unshrunk), identified (2 ear tags; one large easily read and one smaller with higher degree of retention) and assigned to an implant treatment at the initiation of grazing. Treatments included no implant (47 steers) or implanted with either Ralgro® (92 steers), Revalor_G® (92 steers) or Compudose® (92 steers). For the purposes of implant assignment, steers were segregated into groups of seven as they sequentially moved through the chute to be processed. Implant treatments were assigned to steers in the 7-head group roughly in the following order: Ralgro®, Revalor_G®, Compudose®, no implant, Compudose®, Revalor_G®, Ralgro®. Initial individual weights were recorded as steers left the headgate following ear tagging and implanting. Administration of the implants was in accordance to manufacturer recommendations as to technique and ear placement. Following recording of initial weights, steers were sorted into three pasture groups roughly by weight and/or ownership without respect to implant treatment. Steers were weighed (unshrunk) at the end of the grazing season and total weight and average daily gain calculated. Three steers were not present at the final weighing (2 Compudose® and one Revalor-G®) and were not included in final data analysis. These steers were subsequently located in an adjacent pasture.

Weight gain data was analyzed as a completely randomized block design using analysis of variance with pasture group representing the blocking factor. Since there were no interactions between implant treatment and pasture group (P>.78), animal within implant treatment represented the experimental unit for data analysis. Significant (P<.1) implant effects were described using contrasts comparing no implant to implants, androgenic/estrogenic-based to estrogenic-based implants (Revalor-G® vs Ralgro® and Compudose®) and among estrogenic-based implants (Ralgro® to Compudose®).

Results

Initial conditions of the trial are presented in Table 1. In the process of administering implants to treatment steers (92/group), 96, 98 and 92 Ralgro®, Revalor-G®, and Compudose® implants were used. Overall, steers weights averaged 686.8 lb and ranged from 493 to 939 lb. There were no difference (P=.46) in initial weight among treatment groups.

Pasture group (Table 2) significantly affected initial (P=.001) and final (P=.001) weights and weight gains (P=.02). Pasture group 1 had the heaviest initial and final weights and the lowest weight gains. Initial and final weights were lowest for pasture group 3 and intermediate for pasture group 2. Weight gains did not follow this pattern. Total weight and average daily gain were greatest for pasture group 1, while gains for pasture group 3 were intermediate.

Three steers were not present at final weighing. Initial weight of steers present at final weighing was not different (P=.66) among implant treatment groups. Final weight (P=.06) and total and average daily gain (P=.001). followed similar pattern with regard to treatment differences. Implanting steers produced heavier final weights (P=.05) and larger gains (P=.001) over the grazing season. Revalor-G® implanted steers had heavier final weight (P=.06) and larger gains (P=.02) compared to Ralgro® and Compudose® implanted steers. There were no differences between Ralgro® and Compudose® implanted steers with respect to final weight (P=.59) or gain (P=.97).

Implications

Although there were differences among pastures in overall performance, implant response on liveweight gain of yearling steers was similar within pastures. In this trial, the utilization of growth-promoting implants resulted in improved performance over nonimplanted contemporaries. Among implanted steers, the androgenic/estrogenic-based implant enhanced performance over either of the estrogenic-based implant products. There were no differences in grazing performance between the estrogenic-based implants.

Authors wish to thank Allen and Betty Gasho for their supply and management of cattle and to Schering-Plough Animal Health for grant support.

Mention of trade names is solely to identify materials used and does not constitute endorsement by North Dakota State University.

Ralgro®, 36 mg zeranol, Schering-Plough Animal Health; Compudose®, 25.7 mg estradiol, Vetlife, Inc.; Revalor-G®, 8 mg estradiol and 40 mg trenbolone acetate, Hoechst.

Table 1. Summary table of initial weights for S-P implant study.

	Implant treatment				
	No implant	**Ralgro**	**Revalor-G**	**Compudose**	**Overall**
Number of steers	47	92	92	92	323
Num. of implants used	-	96	98	92	-
Initial weight (lb)	694.7	688.6	689.0	678.9	686.8
SD[a] (lb)	55.18	59.64	57.43	66.54	60.48
Minimum weight (lb)	542	548	562	493	493
Maximum weight (lb)	812	930	840	939	939

[a] Standard deviation.

Table 2. Summary table of final weights and gains for pasture groups in S-P implant study.

	Pasture group			
	1	2	3	P-value[a]
Number of steers	37	244	39	-
Initial weight (lb)	737.4	689.2	634.3	.001
SE[b] (lb)	9.06	3.66	8.85	
Final weight (lb)	972.5	943.0	882.4	.001
SE (lb)	10.15	4.1	9.91	
Total weight gain (lb)	235.2	253.8	248.1	.02
SE (lb)	6.15	2.48	6.00	
Average daily gain (lb)	2.64	2.85	2.79	.02
SE (lb)	.069	.028	.067	

[a] Probability of at least one of the pasture group means within a row is different from the others.

[b] Standard error of treatment means..

[X,y,z] Means within a row with different subscripts differ. Individual pairwise mean comparisons differ (P<.005).

Table 3. Summary table of final weights and gains for treatments in S-P implant study.

	Implant treatment	P-value[a]

	No implant	Ralgro	Revalor-G	Compudose	1	2	3	4
Number of steers	47	92	91	90	-	-	-	-
Initial weight (lb)	693.4	686.4	686.8	681.2	.66	.32	.66	.53
SE[b] (lb)	8.46	6.72	6.54	6.53				
Final weight (lb)	918.6	934.9	947.1	930.0	.06	.05	.06	.59
SE (lb)	9.47	7.52	7.32	7.32				
Total weight gain (lb)	225.1	248.6	260.3	248.8	.001	.001	.02	.97
SE (lb)	5.73	4.55	4.43	4.43				
Average daily gain (lb)	2.53	2.79	2.92	2.80	.001	.001	.02	.97
SE (lb)	.064	.051	.050	.050				

[a] Probability values for specific mean comparisons. 1 = at least one of the treatment means within a row is different from the others. 2 = No implanted steers differed from implanted steers. 3 = Revalor-G implanted steers differed from Ralgro and Compudose implanted steers. 4 = Ralgro implanted steers from Compudose implanted steers.

[b] Standard error of treatment means.

2000 Reports | All Reports | DREC Home | E-mail DREC