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Evaluation of Revalor[®]-G as an Initial Implant for Yearling Steers

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Revalor-G compares favorably with other initial feedlot implants to maintain rate and efficiency of growth, with minimal impact on marbling and quality grade.

Summary

Three hundred thirty-six English crossbred steers (715 lb) were used to compare effects of reimplanting with Revalor[®]-S (administered on day 66) after three different initial implants (administered on day zero), to single implantation with Revalor-S (administered on day zero or day 66). Over the entire study, implanted steers gained faster and more efficiently than non-implanted control steers. Steers implanted initially with Revalor-G or Synovex-S gained faster than steers implanted only once. Of the three reimplant treatments, only those initially implanted with Revalor-G had improved feed efficiency compared with single-implanted steers on a live basis. Compared to non-implanted controls, marbling score was reduced only when Synovex-S or Ralgro was used as initial implants.

Introduction

Reimplanting is a commonly accepted practice for feedlot cattle fed in excess of 130 days. Type and dosage of the initial implant may impact animal response to the terminal implant, carcass characteristics and animal behavior. Therefore, the objectives of this study were to measure performance and carcass responses of finishing steers to reimplanting versus use of a single implant, and to evaluate

the effects of three different initial implants differing in active anabolic agent makeup and dosage.

Procedure

From a larger group of 381 steers, 336 predominately English crossbred steers (715 lb) were selected based on uniformity in weight. Steers were allotted within source and weight to one of 42 pens. Seven pen replicates were assigned to each of six treatments: 1) non-implanted control; 2) implanted with Revalor-S at day zero; 3) implanted with Revalor-S at day 66; 4) implanted with Revalor[®]-G at day zero and reimplanted with Revalor-S at day 66; 5) implanted with Synovex[®]-S at day zero, reimplanted with Revalor-S at day 66; and 6) implanted with Ralgro[®] at day zero and reimplanted with Revalor-S at day 66.

Initial processing consisted of weighing, ear tagging and vaccination against IBR, PI3, BSRV, H. somnus and seven clostridial species. Treatment for internal and external parasites was with Safeguard[®] and Tiguvon[®], respectively.

Initial and final weights were the average of individual weights obtained before feeding on two consecutive days. Four replicates were started on trial September 27, 1996 and fed until March 19, 1997 (173 days). The remaining three replicates were started on October 1, 1996 and fed until March 5, 1997 (155 days).

Steers were fed once daily a series of four or five intermediate step-up rations and were placed on the finisher within 21-25 days of starting the experiment, depending on replicate. The finisher ration on a DM basis was composed of 54 percent dry-rolled corn, 27 percent high-moisture corn, 5 percent alfalfa hay, 5 percent corn silage, 4 percent liquid supplement, 3 percent soybean meal, and

2 percent dry supplement and contained 65.3 Mcal NEg/cwt, 13.24 percent crude protein, .62 percent Ca, .34 percent P, .74 percent K and 0.16 percent Mg.

Steers were shipped (approximately 50 miles) and slaughtered the day after final weighting. Individual animal identity was maintained. Hot carcass weights and liver abscess scores were obtained at slaughter. Carcass data (backfat thickness, ribeye area, marbling score, percent KPH fat, maturity of lean tissue and bone, masculinity score and incidence of dark cutters) were obtained by trained personnel following a 24-hour carcass chill.

Data were analyzed by GLM procedures of SAS. Replicates were either housed in exposed, open lots or in a semi-enclosed barn with a southern exposure. Because of potential location or facility effects, the statistical model included treatment, facility treatment*facility, and replicate (facility) as independent variables. Means were separated using least significant difference. Percentage Choice or better carcasses and distribution of quality and yield grades were analyzed using Chi square statistics. Four live animals and one dead animal were taken off test during the conduct of the study for reasons unrelated to treatment and were eliminated from the analysis.

Results

All implants increased average daily gain and decreased feed to gain ratio in the initial 66 days of the study (Table 1). Steers implanted with Synovex-S gained faster than steers implanted with Ralgro, with Revalor-G being intermediate. Steers implanted initially with Ralgro were more efficient in the first 66 days compared with those initially implanted with Synovex-S.

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During the reimplant period (day 67-end), reimplanted steers gained faster and more efficiently than steers not reimplanted. Steers initially implanted with Revalor-G were more efficient than those initially implanted with Synovex-S, while Ralgro steers were intermediate. Steers implanted initially with Ralgro consumed less feed than those initially implanted with Synovex-S during the reimplant period.

Over the entire study, implanted steers gained faster and more efficiently than non-implanted control steers. Steers implanted initially with Revalor-G or Synovex-S gained faster than steers implanted only once. Of the three reimplant treatments, only those initially implanted with Revalor-G had improved feed efficiency compared with single-implanted steers on a live and carcass basis.

Implanted steers had heavier carcass weights and larger ribeye areas than non-implanted steers (Table 2). Dressing percentage and rib-fat tended to be higher for implanted steers. Average yield grade also tended to be higher for implanted steers, with no apparent differences in yield grade distribution (Chi-square = .20).

Marbling scores were reduced compared to non-implanted controls only when Synovex-S or Ralgro were used as initial implants. Use of a single Revalor-S implant, either at day one or day 66, had no significant effect on marbling score. Overall, steers graded extremely well in this study, with no significant reduction in quality grade as a result of implant treatment. Nonetheless, marbling score tended to be reduced to a lower extent when Revalor-G, rather than when Ralgro or Synovex-S was utilized as the initial implant.

Bone maturity scores were increased by all implant treatments compared with non-implanted controls, with the exception of the third treatment (no implant for 66 days, followed by Revalor-S). Although statistically significant differences existed, treatment means for bone maturity ranged only from A⁶⁴ to A⁸⁰. Similar small but statistically significant differences in overall maturity (average of lean and bone maturity) existed between treat-

Table 1. Effect of implant treatment on feedlot performance of yearling steers.

Day zero implant ^a :	None	Rev-S	None	Rev-G	Syn-S	Ralgro
Day 66 implant:	None	None	Rev-S	Rev-S	Rev-S	Rev-S
Day Zero-66						
ADG, lb	3.94 ^c	4.65 ^e	3.92 ^c	4.50 ^{de}	4.71 ^e	4.32 ^d
DMI, lb	23.31 ^{cd}	23.95 ^e	22.93 ^c	23.63 ^{de}	24.08 ^e	23.73 ^{de}
F/G	5.95 ^c	5.17 ^e	5.87 ^c	5.27 ^{de}	5.14 ^e	5.53 ^d
Day 67-end						
ADG, lb	2.21 ^c	2.34 ^c	2.73 ^d	2.78 ^d	2.60 ^d	2.68 ^d
DMI, lb	21.71 ^c	22.74 ^{de}	22.16 ^{cd}	22.53 ^{de}	23.00 ^e	22.15 ^{cd}
F/G	10.03 ^c	9.80 ^c	8.17 ^e	8.18 ^e	8.94 ^d	8.30 ^{de}
Overall, live basis						
End wt, lb	1194 ^c	1259 ^{de}	1244 ^d	1286 ^f	1280 ^{ef}	1267 ^{def}
ADG, lb	2.90 ^c	3.27 ^d	3.21 ^d	3.47 ^e	3.45 ^e	3.34 ^{de}
DMI, lb	22.21 ^d	23.08 ^{ef}	22.33 ^{cd}	22.83 ^{def}	23.29 ^f	22.64 ^{cde}
F/G	7.70 ^c	7.07 ^d	7.00 ^d	6.60 ^e	6.79 ^{de}	6.80 ^{de}
Overall, adjusted basis ^b						
End wt, lb	1172 ^c	1250 ^{de}	1229 ^d	1274 ^e	1276 ^e	1255 ^{de}
ADG, lb	2.77 ^c	3.22 ^d	3.12 ^d	3.40 ^e	3.42 ^e	3.27 ^{de}
F/G	8.06 ^c	7.18 ^{de}	7.20 ^d	6.76 ^f	6.85 ^{ef}	6.97 ^{def}

^aRev-S = Revalor-S; Rev-G = Revalor G; Syn-S = Synovex-S.

^bEnding weights were hot carcass weights divided by a constant (63 percent dressing percent).

^{cdef}Means in a row without a common superscript differ (P < .10).

Table 2. Effect of implant treatment on carcass traits of yearling steers.

Day zero implant ^a :	None	Rev-S	None	Rev-G	Syn-S	Ralgro
Day 66 implant:	None	None	Rev-S	Rev-S	Rev-S	Rev-S
Hot weight, lb	738 ^d	788 ^{ef}	774 ^e	803 ^f	804 ^f	791 ^{ef}
Dressing %	61.9 ^d	62.6 ^e	62.3 ^{de}	62.4 ^{de}	62.8 ^e	62.4 ^{de}
Ribeye area, in ²	12.42 ^d	12.91 ^e	12.90 ^e	13.02 ^e	12.88 ^e	13.17 ^e
Rib-fat, in.	.48 ^{de}	.53 ^{ef}	.53 ^{ef}	.49 ^{def}	.54 ^f	.45 ^d
KPH fat, %	2.15	2.11	2.10	2.18	2.12	2.15
Yield grade	2.97 ^{de}	3.11 ^{ef}	3.06 ^e	3.04 ^e	3.20 ^f	2.85 ^d
YG 2, % ^h	19.6	19.6	14.3	14.3	17.3	27.8
YG 3, % ^h	76.8	74.5	83.9	80.3	71.4	72.2
YG 4, % ^h	3.6	5.9	1.8	5.4	11.3	0
Marbling score ^b	6.60 ^f	6.35 ^{def}	6.24 ^{def}	6.36 ^{ef}	5.95 ^{de}	5.91 ^d
Prime (PR), % ^h	23.2	13.3	16.1	16.1	3.6	5.6
Choice (CH), % ^h	67.9	76.0	69.6	75.0	83.9	73.7
Pr + Ch, %	91.1	89.3	85.7	91.1	87.5	79.3
Select, % ^h	8.9	7.1	14.3	8.9	10.7	17.1
Standard, % ^h	0	3.6	0	0	1.8	3.6
Maturity ^c						
Bone	164 ^d	180 ^g	168 ^{de}	172 ^{ef}	176 ^{fg}	173 ^{ef}
Lean	165 ^{de}	169 ^{de}	167 ^{de}	164 ^d	168 ^{de}	171 ^e
Overall	165 ^d	175 ^f	168 ^{de}	168 ^{de}	172 ^{ef}	172 ^{ef}
Dark cutters, no.	0	1	0	0	0	0

^aRev-S = Revalor-S; Rev-G = Revalor G; Syn-S = Synovex-S.

^bSmall⁰ = 5.0, Modest⁰ = 6.0.

^cA⁰ = 100, A⁵⁰ = 150, B⁰ = 200.

^{defg}Means in a row without a common superscript differ (P < .10).

^hChi-square statistic indicated no apparent differences in distribution.

ments. Steers implanted initially with Revalor-S, Synovex-S or Ralgro had higher overall maturity scores than non-implanted steers. It appears choice of initial implant and/or timing of the terminal implant have only a slight effect on carcass maturity.

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