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Effects of Second Implant on Feedlot Gain and Carcass Traits

A.S. Leaflet R2503

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Summary and Implications

Two hundred eighteen steers were finished in a total confinement deep-bedded system at the Armstrong Research Farm, Lewis, IA during 2009. All steers were implanted with Synovex-Choice on day 1 and half the steers in each pen were implanted with Synovex-Choice on day 56. All steers were harvested on day 118. The 2nd implant resulted in an immediate and significant improvement in average daily gain. In the 76 day weigh period following reimplantation the group receiving the 2nd implant gained .66 lb/day more than the group not receiving an additional implant. The overall average daily gain of steers implanted once compared to the steers implanted twice was 3.81 vs. 4.10. The 2nd implant group produced significantly heavier carcasses. There were no significant differences in carcass fat cover or ribeye area. The twice implanted steers had a lower percentage low Choice or better ($P=.0571$) and a greater percentage Select ($P=.0555$). Implanting a second time resulted in an increase in carcass weights, an almost significant reduction in % Choice but still resulted in a numerical, non-significant increase in carcass value.

Introduction

Implants are widely used in the feedlot industry. Producers and veterinarians have raised questions whether to re-implant cattle that will be fed 110 to 120 days. This trial was conducted to determine the impact of re-implanting cattle fed 118 days on gain and quality and yield grade.

Materials and Methods

Two hundred eighteen steers were finished in a total confinement deep-bedded system at the ISU Armstrong Research Farm, Lewis, IA during 2009. Steers were obtained from four sources over a 14 day period. All steers were individually identified and weighed by source group on May 19. Cattle were allocated by weight to one of two implant treatments. Cattle were weighed and sorted into one of seven pens on May 20. The on-test weight is the average of the weights collected on May 19 and 20.

All steers were implanted with Synovex-Choice on May 20. On July 15, day 56 of the trial half the steers in each pen were re-implanted with Synovex-Choice. Pens were bedded with corn stover as needed. Steers were harvested on September 15 with full carcass data collected.

Feed ingredients and ration percentages on a dry matter basis are presented in Table 1. Individual performance and

carcass data were analyzed using the General Linear Models procedure of SAS. The initial model included implant treatment, source of feeder cattle, pen density, and the implant treatment by cattle source interaction. Implant treatment by cattle source interaction was not statistically significant for any of the growth or carcass traits measured and analyzed. Cattle source and pen density impacted a number of the traits measured, therefore, least square means are provided in this report. Probabilities that USDA Quality and Yield Grade percentages were different were determined by chi-square analysis.

Results and Discussion

Steer performance by implant treatment is shown in Table 2. Interim weight gains reveal similar performance for both treatment groups from on test date to July 15 – day 56 when half of the steers were implanted with a second implant. The 2nd implant significantly increased gain the last 76 days on feed resulting in a 24 lb heavier adjusted final weight.

The steers implanted twice produced significantly heavier carcasses than steers implanted once.

Steers implanted twice had a lower % low Choice or better ($P=.0571$) and higher % Select carcasses ($P=.0555$). The marbling score averages for the two treatments are not significantly different. However, because the averages are close to Small 0 (the minimum marbling score for Choice) and a slight change in marbling score can impact the percent Choice or better.

Number of implants had no significant impact on fat cover or ribeye area at harvest.

The base price for Choice, Yield Grade 3 carcasses was \$132.00/cwt.; Select, Yield Grade 3 price was \$125.50/cwt.; and Standard, Yield Grade 3 price was \$120.50/cwt. Premiums for Yield Grade 1 and 2 was \$4.00/cwt and \$2.00/cwt, respectively, and a discount for Yield Grade 4 was -\$15.00/cwt. Premium for Certified Angus Beef was \$4.00/cwt. Carcass price received for the two implant treatment groups was not statistically different. However, the cattle implanted twice produced heavier carcass resulting in a numerically higher carcass value (\$1,073.75) compared to the cattle implanted once with a carcass value of \$1,050.58.

Cowboy math says the cost of the 2nd implant is \$2.80/head, labor to re-implant \$.50 per head and 129 lbs additional feed dry matter at \$160/ton for an estimated additional feed cost of \$10.82/head. The Cornell Net Carbohydrate Model was used to estimate individual dry matter intake for each steer within the pen. The dry matter intake calculated for the steers implanted twice was 3,268 lbs compared to the single implanted steers 3,139 lbs. Treatment feed to gain ratios are not available as half the steers within each pen received one of the two treatments.

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Total estimated cost of the 2nd implant \$13.62/head. Total increased revenue \$23.17/head (\$1,073.75 - \$1,050.58). Additional net income \$23.17 - \$13.62 = \$9.55/head for the second implant.

Acknowledgements

The authors appreciate the suggestions and encouragement by SW Iowa cattle feeders to conduct trials that answer their questions. Fort Dodge Animal Health supplied the implants for the project.

Table 1. Ration composition on a dry matter basis.

Item	Ration
Corn	45.0%
Modified DDG	36.8%
Supplement	3.4%
Ground hay	14.8%

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Table 2. Performance and carcass traits of steers implanted once or twice.

Item	One Implant	Two Implants
No of steers	109	109
On test weight	865	865
Weight on July 15	1105	1107
ADG On-test to July 15 – 56 Days	4.32	4.36
Adj. final weight	1314	1348
ADG July 15 to harvest 76 Days	3.86 ^a	4.52 ^b
Average daily gain, 118 Days	3.81 ^a	4.10 ^b
Hot Carcass Wt, lb	832 ^a	812 ^b
Fat Cover, in.	.47	.46
Ribeye Area, sq. in.	13.0	13.0
Marbling Score	SM 10	SM 01
% low Choice or Better	60% ^c	48% ^d
% Premium Choice	7%	6%
% Select	37% ^c	49% ^d
% Standard	3%	3%
% Yield Grade 1 & 2's	53%	61%
% Yield Grade 4's	4%	3%
Carcass price \$/cwt	\$130.09	\$129.59
Carcass value \$/hd	\$1,050.58	\$1,073.75

^{ab} Means with different superscripts in the same line differ (P<.05).

^{cd} Means with different superscripts in the same line differ (P<.06).