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## Implant comparisons in feedlot steers and heifers

### Abstract

Feedlot performance of steers implanted with Compudose®, Implus-S®, or Synovex-S® was very similar. No statistical differences were detected among treatments. However, implanted steers gained an average of 4% faster than nonimplanted controls. Carcass quality was virtually unaffected by treatment. Implanting feedlot heifers with Synovex- H®, Implus-H®, or Implus-H® plus Finaplix- H® increased daily gain compared to non-implanted heifers. Implanting improved gain and feed efficiency by 13 and 7.1%, respectively, compared to controls. Differences in carcass characteristics probably were due to the increased weight gain associated with implants. Percentage of carcasses grading Choice was not impacted by treatment.

### Keywords

Cattlemen's Day, 1993; Kansas Agricultural Experiment Station contribution; no. 93-318-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 678; Beef; Feedlot; Steer; Heifer; Implants

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# IMPLANT COMPARISONS IN FEEDLOT STEERS AND HEIFERS

*T. P. Eck<sup>1</sup> and L. R. Corah*

## Summary

Feedlot performance of steers implanted with Compudose®, Implus-S®, or Synovex-S® was very similar. No statistical differences were detected among treatments. However, implanted steers gained an average of 4% faster than nonimplanted controls. Carcass quality was virtually unaffected by treatment.

Implanting feedlot heifers with Synovex-H®, Implus-H®, or Implus-H® plus Finaplix-H® increased daily gain compared to non-implanted heifers. Implanting improved gain and feed efficiency by 13 and 7.1%, respectively, compared to controls. Differences in carcass characteristics probably were due to the increased weight gain associated with implants. Percentage of carcasses grading Choice was not impacted by treatment.

(Key Words: Feedlot, Steer, Heifer, Implants.)

## Introduction

Improved gain and feed efficiency in feedlot cattle from growth promoting implants have been well documented. In addition, implants usually increase muscle growth, resulting in leaner carcasses. Two studies were conducted in southwest Kansas feedlots to evaluate the relative effects of currently available implants on live performance and carcass characteristics of feedlot steers and heifers.

## Experimental Procedures

Two hundred and fifty steers averaging 711 lb were allotted to 16 pens with four weight replicates and given one of four implant treatments: Compudose, Implus-S, Synovex-S, and Control (no implant). The trial lasted 117 days and was conducted at Brookover Ranch Feedyard, Garden City, KS.

In the heifer study, 360 heifers averaging 639 lb were allotted to 20 pens with four weight replicates and given one of five implant treatments: Finaplix-H, Implus-H, Synovex-H, a combination of Implus-H and Finaplix-H, and Control (no implant). This study lasted 135 days and was conducted at Reeve Cattle Company, Garden City, KS.

In both trials, individual animal weights were taken at the beginning of the study. To obtain final individual live weights, about one week before slaughter, cattle in each pen were weighed as a group, then each animal was weighed individually. Individual weights were prorated back to the pen weight, and that figure used to compute final individual weights. Daily gains were calculated by shrinking individual final live weights 4%. Feed intake was expressed on a dry matter basis. Cattle were fed and managed according to the standard practices of the respective feedlots. Finishing diets were high in concentrate, typical of High Plains feedyards. In the heifer study, MGA® was not fed. All implant treatments were single dose without re-implantation.

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## Results and Discussion

**Steer Results.** Daily gain, feed intake, and feed efficiency were not affected statistically ( $P > .05$ ) by implant treatment (Table 1). However, implanted steers gained 4% faster and ate 2% more feed daily than nonimplanted controls. Dressing percentage averaged 64.1 for all steers, based on feedlot shipping weight on the day of slaughter. Dressing percentages by treatment were not estimated, because individual steer weights were taken 7 days prior to slaughter. Carcass measurements were essentially unaffected by treatment, with the exception of fat thickness and yield grade (Table 2). Steers implanted with Compudose or Implus-S had greater ( $P < .05$ ) external fat cover and higher yield grades than control steers, and Synovex-S steers were intermediate. These effects likely were due to the heavier carcass weights resulting from slightly higher gains, the slightly smaller ribeye areas, and the greater backfat thickness of steers implanted with Compudose and Implus-S. Percentage of carcasses grading USDA Choice or higher was not influenced ( $P > .05$ ) by treatment.

**Heifer Results.** Except for Finaplix-H, implanting heifers increased ( $P < .05$ ) daily gain compared to controls (Table 3). However, the gains of heifers implanted with

either Finaplix-H, Synovex-H, or Implus-H were statistically similar. The combination of Implus-H and Finaplix-H resulted in higher ( $P < .05$ ) gains than either controls or Finaplix-H alone, but gain was not different than that with Synovex-H or Implus-H. Feed intake was not altered ( $P > .05$ ) by treatment. Feed efficiency was improved ( $P < .05$ ) in heifers receiving the combination implant compared to other treatments, except Synovex-H. Overall, the implant treatments resulted in a 13% increase in gain and a 4.5% increase in dry matter intake, compared to nonimplanted heifers. Implanting also improved feed efficiency 7.1%.

Dressing percentage averaged 64.8% for all heifers, based on feedlot shipping weight on the day of slaughter. As with the steers in the previous study, dressing percent was not separated by treatment, because individual weights were taken 6 days prior to slaughter. Differences in daily gain were also reflected in hot carcass weight and ribeye area (Table 4). Implanted heifers had larger ( $P < .05$ ) carcasses and ribeyes than nonimplanted heifers. Other carcass measurements were not influenced by treatment. Yield grade and percentage of carcasses grading USDA Choice or higher were not affected ( $P > .05$ ) by implant treatment.

**Table 1. Effect of Implants on Steer Feedlot Performance**

Item	Control	Compudose	Implus-S	Synovex-S	SEM <sup>a</sup>
Daily gain, lb	3.62	3.77	3.82	3.74	.08
Daily DM intake, lb	21.05	21.79	21.58	20.89	.44
Feed DM/gain	5.67	5.78	5.62	5.59	.14

<sup>a</sup>Pooled standard error.

**Table 2. Implant Effects on Carcass Characteristics of Feedlot Steers**

Item	Control	Compudose	Implus-S	Synovex-S	SEM <sup>a</sup>
Carcass wt, lb	738.3	754.0	757.3	733.8	10.0
KPH <sup>b</sup> , %	2.38	2.38	2.39	2.39	.02
Backfat, in.	.36 <sup>x</sup>	.42 <sup>y</sup>	.42 <sup>y</sup>	.40 <sup>xy</sup>	.01
Ribeye area, in. <sup>2</sup>	12.46	12.11	12.03	12.30	.16
Yield grade	2.69 <sup>x</sup>	3.00 <sup>yz</sup>	3.05 <sup>y</sup>	2.85 <sup>z</sup>	.05
USDA Choice, %	66.9	71.3	61.0	73.4	5.4

<sup>a</sup>Pooled standard error.

<sup>b</sup>Kidney, pelvic, and heart fat.

<sup>xyz</sup>Means in a row with unlike superscripts differ (P < .05).

**Table 3. Effect of Implants on Heifer Performance**

Item	Control	Synovex-H	Implus-H	Finaplix-H	Implus-H & Finaplix-H	SEM <sup>a</sup>
Daily gain, lb	2.28 <sup>x</sup>	2.60 <sup>yz</sup>	2.52 <sup>yz</sup>	2.48 <sup>xy</sup>	2.71 <sup>z</sup>	.07
Daily DM intake, lb	15.13	15.89	16.06	15.68	15.60	.29
Feed DM/gain	6.63 <sup>x</sup>	6.12 <sup>xy</sup>	6.39 <sup>x</sup>	6.36 <sup>x</sup>	5.76 <sup>y</sup>	.19

<sup>a</sup>Pooled standard error.

<sup>xyz</sup>Means in a row with unlike superscripts differ (P < .05).

**Table 4. Implant Effects on Carcass Characteristics of Feedlot Heifers**

Item	Control	Synovex-H	Implus-H	Finaplix-H	Implus-H & Finaplix-H	SEM <sup>a</sup>
Carcass wt, lb	601.5 <sup>x</sup>	640.33 <sup>y</sup>	628.73 <sup>y</sup>	628.80 <sup>y</sup>	649.35 <sup>y</sup>	7.31
KPH <sup>b</sup> , %	2.58 <sup>xyz</sup>	2.46 <sup>xy</sup>	2.35 <sup>x</sup>	2.72 <sup>z</sup>	2.62 <sup>yz</sup>	.08
Backfat, in.	.57	.59	.61	.62	.61	.02
Ribeye area, in. <sup>2</sup>	11.37 <sup>x</sup>	12.24 <sup>y</sup>	12.21 <sup>y</sup>	11.96 <sup>y</sup>	12.40 <sup>y</sup>	.15
Yield grade	3.04	2.98	2.97	3.15	2.99	.10
USDA Choice, %	75.7	58.7	58.8	71.2	62.1	5.5

<sup>a</sup>Pooled standard error.

<sup>b</sup>Kidney, pelvic, and heart fat.

<sup>xyz</sup>Means in a row with unlike superscripts differ (P < .05).