January 2007

# Evaluation of Synovex Choice Versus Revalor Implant Strategies in Beef Finishing Steers

Pablo L. Loza
*University of Nebraska-Lincoln*

Galen E. Erickson
*University of Nebraska-Lincoln*, gerickson4@unl.edu

Terry J. Klopfenstein
*University of Nebraska-Lincoln*, tklopfenstein1@unl.edu

Bill Dicke
*Cattlemens Nutrition Services*

Robert J. Cooper
*Cattlemens Nutrition Services*

*See next page for additional authors*

# Evaluation of Synovex Choice Versus Revalor Implant Strategies in Beef Finishing Steers

**Pablo L. Loza**
**Galen E. Erickson**
**Bill Dicke**
**Robert J. Cooper**
**D. J. Jordon**
**J. Drouillard**
**Terry J. Klopfenstein**
**Court Campbell**[1]

## Summary

*A commercial feedlot experiment was performed with the objective to compare a Synovex-Choice/ Synovex-Choice (Choice) implant strategy to a Revalor-IS/Revalor-S (Revalor) strategy on finishing steer performance and carcass characteristics. DMI did not differ between treatments). When calculated from carcass adjusted FW, ADG was not significantly different between Choice and Revalor implant strategies. Consequently, F/G was not significantly different when the Choice strategy was compared with Revalor strategy. No differences were observed for marbling scores or calculated yield grade) due to treatment. Based on carcass-adjusted performance, significant differences do not exist in performance between the two implant strategies.*

## Introduction

Synovex-Choice is an implant that contains 100 mg of trenbolone acetate (TBA) and 14 mg of estradiol benzoate. Revalor-IS contains 16 mg of estradiol 17 β and 80 mg of TBA and Revalor-S contains 24 mg of estradiol 17 β and 120 mg of TBA. ADG, F/G and carcass characteristics were compared when using two implant combinations, Synovex Choice/Synovex Choice and Revalor-IS/Revalor-S.

## Procedure

Eight hundred ninety two steer calves (initial BW = 641± 21 lb) from auction barns in Missouri, Montana and South Dakota and a ranch in Idaho, blocked by arrival date (six blocks), were assigned randomly to one of two pens per block in a feedlot trial conducted at Hi Gain feedlots (Farnam, Neb.) Pens were assigned randomly to one of two treatments (six pens/treatment). Treatments were two implant strategies consisting of an initial implant of Synovex-Choice followed by a second dose of Synovex-Choice at reimplant, or Revalor-IS followed by Revalor-S. Reimplant occurred at 89 days after first implant, steers were fed for an average of 169 days. Cattle were fed the same diet (Table 1) following a common step up period. The step-up period consisted of three step-up diets with incremental percentages of dry-rolled corn and steam flaked corn replacing alfalfa hay. The finishing diet included 33.5% dry-rolled corn, 30% steam flaked corn, 22% wet distillers grains, 5% alfalfa hay, 2% cane hay, 1.5% tallow, and 5% liquid supplement. The supplement included Rumensin (300 mg/hd/d) and Tylan (90mg/hd/d). Pen and individual BW were recorded on day 1 and on reimplant day and pen weights were recorded at harvesting date. Because no differences were observed between the individual and pen weight measurements, pen weights were used to determine ADG and F/G. Fort Dodge personnel checked for missing implants and abscesses at reimplant. At first implant time, cattle were vaccinated using Bovishield and Titanium 3, and administered Dectomax. Feedintakes and health records were recorded daily. Feed conversion was calculated from final BW adjusted from hot carcass weight (HCW) recorded at slaughter, assuming 64% dressing percentage. Cattle were harvested at IBP, Lexington Neb., at different dates according to arrival at the feedlot and degree of finish. Carcass 12$^{th}$ rib fat thickness, longissimus muscle area (LMA) and USDA yield and quality grades were recorded following a 24 hour chill. Statistical analysis was performed using PROC MIXED of SAS. Proc FREQ of SAS was used for the Chi Square distribution analysis for quality and yield grade.

(Continued on next page)

**Table 1. Performance of steer calves implanted with either Synovex-Choice on day 1 followed by Synovex-Choice on day 89 (Choice) compared to steers implanted on the same days with Revalor-IS followed by Revalor-S (Revalor)**

| | Choice | Revalor | SEM | P-value |
|---|---|---|---|---|
| *Overall carcass performance*[a,b] | | | | |
| Pens, n | 6 | 6 | | |
| Steers, n | 449 | 443 | | |
| DOF, days | 169 | 169 | | |
| Initial BW | 640.4 | 640.7 | 8.9 | 0.953 |
| Final BW | 1328 | 1328 | 19.6 | 0.994 |
| DMI | 21.70 | 21.67 | 0.52 | 0.804 |
| ADG | 4.08 | 4.08 | 0.08 | 0.964 |
| G:F | 0.188 | 0.188 | 0.002 | 0.783 |
| F:G | 5.32 | 5.31 | | 0.783[d] |
| *Overall live performance*[c] | | | | |
| Final BW | 1316 | 1309 | 19.8 | 0.322 |
| ADG | 4.00 | 3.96 | 0.09 | 0.210 |
| G:F | 0.184 | 0.183 | 0.002 | 0.318 |
| F:G | 5.42 | 5.46 | | 0.318[d] |

[a]All BW are shrunk 4% except initial BW.
[b]Overall live performance calculated from live BW on a pen basis collected prior to study initiation and on day of slaughter.
[c]Overall carcass performance calculated using a 64% dressing percentage for both treatments.
[d]P Val calculated from G:F

## Results

There was no difference in DMI due to treatments. Using final BW calculated from carcass weights, there were no differences in any feedlot performance measurements (Table 1). Carcass adjusted final BW did not differ between treatments. Consequently, ADG and F/G were not different between treatments. Using live performance, live final BW was not affected by treatment. Therefore, ADG based on live weights was not different for the Choice treated steers when compared to steers treated with the Revalor implant strategy. Similar results were observed in feed conversion on a live basis. Because no differences were observed in carcass weight or carcass-adjusted performance, we conclude performance is similar between implanting with a Synovex-Choice and Synovex-Choice compared to Revalor-IS and Revalor-S implant regimen.

There were no differences in hot carcass weight, dressing percentage, marbling and back fat depth between the steers implanted using the Choice strategy compared to the Revalor implants (Table 2). There was a tendency (*P*=0.09) for a higher number of carcasses grading average choice for the Choice implanted steers, and this difference was due to a numerically lower number of standard and upper choice carcasses for the Revalor treatment. No differences in calculated USDA Yield Grade were observed in the Choice implanted steers compared to the Revalor treated steers. Chi square analysis showed frequency distributions for USDA Quality and Yield Grades did not differ (P=0.82) by treatment.

**Table 2. Carcass characteristics of steer calves implanted with either Synovex-Choice on day 1 followed by Synovex-Choice on day 89 (Choice) compared to steers implanted on the same days with Revalor-IS followed by Revalor-S (Revalor).**

| | Choice | Revalor | SEM | P-value |
|---|---|---|---|---|
| Carcass characteristics | | | | |
| Pens | 6 | 6 | | |
| Carcasses | 424 | 416 | | |
| Hot carcass weight, lb | 850.0 | 850.0 | 12.5 | 0.992 |
| Dressing % | 64.61 | 64.91 | 0.20 | 0.128 |
| Fat depth, in | 0.553 | 0.543 | 0.019 | 0.581 |
| LM area, $in^2$ | 14.69 | 14.82 | 0.15 | 0.496 |
| KPH, % | 2.44 | 2.41 | 0.05 | 0.305 |
| Marbling [a] | 531 | 525 | 5.6 | 0.477 |
| Calc. YG [b] | 2.97 | 2.87 | 0.08 | 0.423 |
| USDA Quality Grade, as percentage of total | | | | |
| Prime | 0.23 | 0 | 0.17 | 0.363 |
| Upper Choice | 3.61 | 4.68 | 1.28 | 0.443 |
| Mid Choice | 15.35 | 10.05 | 1.76 | 0.086 |
| Low Choice | 42.81 | 46.71 | 2.23 | 0.271 |
| Select | 36.45 | 35.21 | 2.77 | 0.765 |
| Standard | 1.55 | 3.36 | 0.88 | 0.205 |
| Choice or > | 61.92 | 61.43 | 2.55 | 0.899 |
| Select or < | 38.08 | 38.57 | 2.55 | 0.899 |
| USDA Yield Grade, as percentage of total | | | | |
| YG 1 | 13.42 | 15.91 | 3.09 | 0.470 |
| YG 2 | 41.44 | 41.17 | 3.57 | 0.959 |
| YG 3 | 36.91 | 34.52 | 3.84 | 0.679 |
| YG 4 | 6.72 | 5.54 | 1.76 | 0.644 |
| YG 5 | 1.51 | 2.87 | 0.91 | 0.341 |

[a] 450=Slight$^{50}$, 500=Small$^{0}$, 550=Small$^{50}$, etc.
[b] Calculated as 2.5 + (2.5*Fat Depth) + (0.2*2% KPH) + (0.0038*HCW) - (0.32*REA)

[1]Pablo L. Loza, graduate student, Galen E. Erickson, associate professor, Terery J. Klopfenstein, professor, Animal Science, Lincoln. Bill Dicke, Robert J. Cooper, D. J. Jordon, Cattlemens Nutrition Services; J. Drouillard, Kansas State University; Court Campbell, Fort Dodge Animal Health.