

Evaluation of Synovex Plus, Synovex S and Revalor S Implants in Feedlot Steers

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Summary

One hundred forty-four crossbred yearling steers with an average weight of 841 pounds were used in a 116-day experiment. Steers received either 1) no implant, 2) Synovex S[®], 3) Revalor S[®], or 4) Synovex Plus[®]. All implanted groups consumed more feed and gained faster and more efficiently than non-implanted steers. There were no significant differences in gain, feed intake or feed efficiency among implanted groups, though steers with the estrogen + trenbolone acetate combination

implants were numerically superior to those implanted with Synovex S[®]. There were no differences in feedlot performance between the two combination implants. Implants increased carcass weight with no significant effects on fat thickness or carcass quality grades. The combination implants containing trenbolone acetate increased ribeye area and increased masculinity of the carcasses. These results indicate Synovex Plus[®] is an effective implant for finishing steers.

Introduction

Hormone implants are widely used in finishing cattle to increase gain, improve feed efficiency and to increase carcass weight with more muscle. A new implant, Synovex

Table 1. Performance and carcass measurements from steers with different implants.

Implant:	None	Synovex S	Revalor S	Synovex Plus	SE ^a
No. steers	36	36	36	36	
No. days	116	116	116	116	
Initial wt, lb	839	841	842	843	1.9
Final wt ^b , lb	1208 ^x	1244 ^y	1264 ^y	1263 ^y	12.0
Daily gain, lb	2.91 ^x	3.19 ^y	3.35 ^y	3.34 ^y	.10
Feed DM, lb/d	21.6 ^x	22.3 ^y	22.6 ^y	22.4 ^y	.34
Feed/gain	7.45 ^x	7.01 ^y	6.76 ^y	6.73 ^y	.17
Carcass					
Carcass wt, lb	721.7 ^x	744.0 ^y	756.9 ^y	754.9 ^y	6.90
Dressing % ^b	62.2	62.3	62.4	62.2	.44
Ribeye area, in ²	12.5 ^x	12.6 ^{xy}	13.2 ^y	13.0 ^{xy}	.30
Fat thickness, in	.34	.35	.35	.37	.03
KHP, %	2.3 ^x	2.0 ^{xy}	2.0 ^y	2.1 ^{xy}	.12
Marbling score ^c	4.44	4.32	4.24	4.31	.21
Percent Choice	56	67	53	61	12.0
Choice	20	24	19	22	
Select	16	12	17	14	
Yield grade	2.55	2.58	2.44	2.55	.13
1	1	3	2	3	
2	28	23	30	22	
3	7	10	4	10	
4				1	
Masculinity score ^d	4.42 ^x	4.31 ^{xy}	4.14 ^y	4.11 ^y	.12

^aStandard error of the mean. Means in the same row differ ($p < .05$) if they have no letter in common.

^bFinal weights were shrunk 4% (final weight x 0.96). Daily gain, feed efficiency and dressing percentages were calculated using shrunk weights.

^cMarbling score: 4 = small, 5 = modest.

^dMasculinity score: 3 = moderate, 4 = slight, 5 = none.

^{xy}Means in the same row differ ($p < .05$) if they have no letter in common.

Plus[®] has been approved for finishing steers. The approved claim is for improvement in feed efficiency. The purpose of this experiment was to compare Synovex Plus[®] with Synovex S[®], Revalor S[®] and control steers on feedlot performance and carcass parameters.

Materials and Methods

One hundred forty-four steers, with an average weight of 841 pounds were selected from 155 steers purchased at an Iowa auction in October. The steers were of mixed breeds, predominantly Angus, Hereford, Simmental and Charolais crosses. The cattle had been grazed together as a group in Southern Iowa. The steers were immunized and treated for internal and external parasites before starting on test. Ears of all cattle were palpated and previous implants were surgically removed. The steers were divided into six weight groups and allotted at random to four pens for each weight group. One experimental treatment was then allotted at random to one pen within each of the six weight groups. The experimental treatments were: 1) no implant, 2) Synovex S[®] (20 mg estradiol benzoate + 200 mg progesterone), 3) Revalor S[®] (24 mg estradiol + 120 mg trenbolone acetate), or 4) Synovex Plus (28 mg estradiol benzoate + 200 mg trenbolone acetate). The steers were implanted on the first day of the experiment.

The steers were weighed individually in the morning, before feeding, on two consecutive days at the start and end of the experiment, and at 28-day intervals during the experiment. The experiment was started in late October and the cattle were fed 116 days. All steers were fed twice per day a diet containing, on a dry basis, 73.40% cracked corn, 12.85% corn silage, 9.65% soybean meal, 2.30% cane molasses and 1.61% dry supplement to furnish 14.0% crude protein, 0.65 Mcal NEg per pound, 1,400 IU of vitamin A per pound, and 27.7 g of monensin per ton.

The steers were sold when they were judged by visual appraisal to grade low Choice. All cattle were slaughtered as a group at a commercial beef-packing plant. Weights of hot carcasses were taken after slaughter and measurements on the carcasses were obtained after 24 hours in the cooler.

Results and Discussion

The results of the experiment are summarized in Table 1. All implanted steers consumed more feed, gained more live weight and were more efficient in the feedlot. There were not significant differences in feedlot performance among the three implants, but steers implanted with trenbolone acetate gained 5% faster than those implanted with Synovex S[®]. Implants had no effect on dressing percentages, fat thickness, or carcass quality and yield grades. Ribeye areas

and masculinity of the carcasses were increased by the two implants containing trenbolone acetate.

During the total 116-day trial there were no differences between the two implants containing trenbolone acetate, even though Synovex Plus[®] contained 67% more active compound. During the first 33 days of the trial, steers implanted with Synovex Plus[®] gained 0.20 lbs per day more and were 5% more efficient compared with those implanted with Revalor S[®]. During days 33 to 68, steers implanted with Synovex Plus[®] gained 0.10 lbs per day more and were 1% more efficient. During the last 48 days of the trial, steers implanted with Synovex Plus[®] gained 0.24 lbs per day less than those implanted with Revalor S[®]; therefore, during the total finishing period there were no differences in gain or feed efficiency between the two implants. It is not obvious why the steers responded in this manner to these two implants. During the last 48 days there were two extremely cold periods with a warm period between, causing considerable stress on the cattle. It is known that trenbolone acetate reduces the ability of the adrenal cortex to release cortisol in response to stress. It may be that Synovex Plus[®] was releasing more trenbolone acetate during this period and that the cattle did not adapt to the environmental stress as well as those implanted with Revalor S[®].

Implications

The results of this experiment demonstrated that Synovex Plus[®] was an effective implant for finishing steers fed high energy diets. Carcass weight was significantly increased and the steers utilized their feed more efficiently than non-implanted steers. Carcass ribeye area was increased with no significant effect on carcass yield grades.

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