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Comparison of Synovex-S® and two levels of Revalor-S® in heavy-weight Holstein steers (1993)

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COMPARISON OF SYNOVEX-S® AND TWO LEVELS OF REVALOR-S® IN HEAVY-WEIGHT HOLSTEIN STEERS¹

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Summary

In two field trials, 434 Holstein steers averaging 849 lbs were assigned randomly to three single implant treatments: 1) Synovex-S®, 2) Revalor®-S 120 (120 mg trenbolone acetate (TBA) + 24 mg estradiol), and 3) Revalor®-S 140 (140 mg TBA + 28 mg estradiol). Revalor-implanted steers gained .05 to .10 lb per day faster, but this improvement was not statistically significant ($P > .05$). Both Revalor-implanted groups produced trimmer carcasses with less ($P < .05$) backfat than Synovex steers. All other carcass characteristics and beef sensory properties, including taste panel evaluations of tenderness, juiciness, and flavor, were not influenced by implant used.

(Key Words: Synovex, Revalor, Holsteins, Feedlot, Carcass Traits.)

Introduction

The implant Revalor was recently approved for use in feedlot steers at a dosage of 120 mg trenbolone acetate (TBA) and 24 mg estradiol. Some research has indicated that a higher dosage of Revalor may give superior performance, especially in heavy-weight cattle. Also, there has been some question as to whether Revalor reduces carcass merit and

palatability of the beef produced. Moreover, no U.S. research has been conducted with Revalor in Holstein steers. Thus, our objectives were to evaluate the use of Synovex-S versus two dosages of Revalor-S on steer performance, carcass characteristics, and beef palatability of heavy-weight Holsteins managed under commercial cattle feeding conditions.

Experimental Procedures

In field trials at two commercial feedyards, 434 heavy-weight Holstein steers averaging 849 lbs were assigned randomly within four feedlot pens to three implant treatments: 1) Synovex-S (200 mg progesterone + 20 mg estradiol benzoate); 2) Revalor-S 120 (120 mg TBA + 24 mg estradiol, the currently approved dosage); or 3) Revalor-S 140 (140 mg TBA + 28 mg estradiol). The feeding periods ranged from 102 to 134 days per pen, with an average of 117 days. The steers were slaughtered at a commercial packing plant, and individual hide-pull scores and carcass data were collected. Rib sections were obtained from a random sample of steers from one of the slaughter groups. Cooked steaks from these rib sections were prepared according to guidelines of the American Meat Science Association and mechanically measured for tenderness using a Warner-

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Bratzler Shear. Additionally, a trained, six-person, sensory panel evaluated the steaks for tenderness, juiciness, flavor, and overall palatability.

Results and Discussion

Steers receiving both Revalor implants gained .05 to .10 lb per day faster than the Synovex steers, but the differences were not significant ($P > .05$), as shown in Table 1. At slaughter, mechanical hide-pull scores were not influenced by implant. Carcasses of Revalor-implanted steers had less ($P < .05$) backfat and tended to have larger ribeyes than those of Synovex-S steers. The percentage of carcasses grading USDA Choice and

other quality and yield grade components were not influenced ($P > .05$) by implant. Additionally, tenderness of cooked steaks, as determined both mechanically and by the trained taste panel, and juiciness and flavor sensory evaluations were similar.

In summary, although these trials showed less numerical improvement in gain with Revalor compared to other research, they documented that a single implantation with Revalor had no negative impact on carcass merit or beef eating qualities compared to a Synovex implant in Holstein steers. Furthermore, there was no advantage to the higher dosage of Revalor.

Table 1. Comparison of Synovex-S versus Two Dosage Levels of Revalor-S in Heavy-Weight Holstein Steers

Item	Synovex-S	Revalor 120	Revalor 140
Animal Performance:			
No. of steers	146	143	145
Final wt, lb	1262	1274	1268
Daily gain, lb	3.54	3.64	3.59
Carcass Characteristics:			
Hot carcass wt, lb	762	769	765
Backfat thickness, in.	.24 ^d	.22 ^e	.22 ^e
KPH fat ^a , %	2.5	2.5	2.5
Ribeye area, sq. in.	11.3	11.7	11.6
Yield grade	2.9	2.8	2.8
Marbling score ^b	245	229	230
USDA Choice, %	85	85	78
Meat Quality:			
No. of carcasses tested	18	15	19
Warner Bratzler Shear force, lb	8.1	7.8	7.9
Taste panel evaluation ^c :			
Tenderness	6.3	6.1	6.4
Juiciness	6.3	5.9	6.1
Flavor	6.1	5.9	6.1
Off-flavor	7.8	7.8	7.8

^aKidney, pelvic, and heart fat.

^b100 to 199 = Slight, 200 to 299 = Small degrees of marbling.

^cAll taste-panel scores were based on an 8-point scale, with 8 the best rating possible.

^{d,e}Values with unlike superscripts are different ($P < .05$).