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L. B. Embry
South Dakota State University

M. S. Goetz

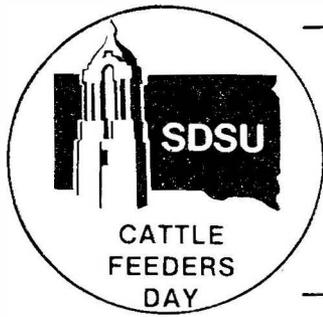
R. M. Luther

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IMPLANTING SITE FOR RALGRO COMPARED TO
SYNOVEX-S FOR GROWING AND FINISHING STEERS
L. B. Embry, M. S. Goetz And R. M. Luther
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Summary

Ralgro (zeranol) implants, at the shallow and about mid-ear site between the skin and cartilage of the ear and at an alternate and deep site near the base of the ear, were compared to Synovex-S and non-implanted controls during growing and finishing phases with steers. Ralgro at each site and Synovex-S improved rate of gain, feed consumption and feed efficiency over nonimplanted controls. During the 86-day growing phase, percentage improvements over controls for Ralgro at the shallow site, Ralgro at the deep site and Synovex-S were 9.1, 12.5 and 16.0 for rate of gain; 2.6, 3.9 and 5.3 for feed intake and 6.2, 7.6 and 9.1 for feed efficiency, respectively.

During the finishing phase of 139 or 146 days when the cattle were re-implanted, percentage improvements in the order listed above for the implant treatments were 12.1, 12.9 and 16.8 for rate of gain; 3.1, 5.5 and 8.3 for feed intake and 5.2, 6.6 and 7.5 for feed efficiency.

Implant treatments appeared to reduce fat deposition as indicated by degree of marbling, KPH fat and quality grade with effects slightly greater for Synovex-S than for Ralgro. Implanted cattle had slightly greater rib eyes but with no appreciable differences for fat thickness or yield grade.

The alternate and deep site for implanted Ralgro appeared to offer a very slight advantage over the shallow mid-ear site. Implanting at this site is easier and faster.

Synovex-S appeared to offer a slight advantage over Ralgro on rate of gain but with greater feed intake with only small differences on basis of feed efficiency. Synovex-S also appeared to have more effect on reducing fat deposition as indicated by degree of marbling, KPH fat and quality grade.

Introduction

Previous experiments (CATTLE 81-2) compared Ralgro implanted at the conventional shallow site, about mid-ear between skin and cartilage of the ear, and at an alternate deep site near the base of the ear to Synovex-S for finishing steers. In two experiments, the average improvements in weight gain for Ralgro at the shallow site, the deep site and Synovex-S were 8.3, 11.1 and 12.0%, respectively, over non-implanted controls. Feed efficiency was improved 7.1, 4.8 and 5.6%, respectively, over controls for these implant treatments.

Additional data were considered desirable to include a growing phase as well as a finishing phase using the same implant treatments as in the previous experiments.

Growing Experiment

Procedures

The growing phase of the experiment was initiated in January and conducted over a period of 86 days. One hundred forty-four Hereford, Hereford-Angus and Hereford-Limousin steers were allotted to 24 pens of six each on the basis of weight and breed group. Four implant treatments replicated six times with six steers per pen were as follows:

1. Non-implanted control
2. Synovex-S
200 mg progesterone and 20 mg estradiol benzoate.
3. Zeranol (Ralgro)
36 mg implanted at the conventional mid-ear location--
shallow between the skin and cartilage of the ear.
4. Zeranol (Ralgro)
36 mg implanted at alternate site--deep and at the base
of the ear.

The steers were purchased about five weeks before the beginning of this implant experiment. They received the following treatments at the beginning of this preliminary period: bovine rhinotracheitis-parainfluenza₃ vaccine (IBR and PI₃), Clostridium chauvoei-septicum-novyi-sordellii bacterin, injectable levamisole phosphate, vitamin A-D injection and Warbex pour-on. The ration during the preliminary period was similar to the one fed during the experiment. The ration (dry basis) during the experiment for all cattle was (%): corn silage, 50.0; alfalfa haylage, 20.0; rolled corn grain, 16.0; and supplement, 14.0. The supplement was formulated for 32% protein (dry basis) with added minerals, vitamin A, monensin and tylosin.

The corn silage was harvested in late October when it was mature and dry. Water was added resulting in about 60% dry matter as fed. The corn was grown on irrigated land and had a high grain yield. The alfalfa haylage contained about 62% dry matter.

Feeding was once daily in outside paved pens without access to shelter. Feed was offered in amounts to be nearly consumed by the next feeding. Amounts as fed were determined from a prepared feeding schedule to give the desired ratios on a dry basis. There was some accumulation of cobs and husks from the dry corn silage. It was weighed, discarded and deducted from the corn silage fed when the accumulation became excessive. Feed offered was regulated to minimize the quantity discarded.

Results

Results of the 86-day growing experiment are shown in table 1. Implant treatments improved rate of gain. Improvements over nonimplanted controls amounted to 9.1, 12.5 and 16.0%, respectively, for Ralgro at the shallow site, Ralgro at the deep site and Synovex-S.

TABLE 1. RALGRO AND SYNOVEX-S FOR FEEDLOT STEERS
(GROWING PHASE--JANUARY 28 TO APRIL 24, 1981-- 86 DAYS)

Treatment	Control	Zeranol (conven- tional shallow site)	Zeranol (alter- nate deep site)	Synovex-S
No. of animals	36	36	36	36
Initial shrunk wt, lb	516	516	515	517
Final shrunk wt, lb	743	763	769	779
Avg daily gain, lb	2.63	2.87	2.96	3.05
Avg daily ration (dry), lb				
Corn silage	7.71	7.93	8.03	8.14
Alfalfa haylage	2.91	2.97	3.01	3.14
Corn grain	2.58	2.63	2.67	2.71
Supplement	2.10	2.15	2.18	2.20
Total	15.30	15.68	15.89	16.19
Feed/100 lb gain (dry), lb				
Corn silage	293	276	272	268
Alfalfa haylage	111	103	102	100
Corn grain	98	92	91	89
Supplement	80	75	74	72
Total	582	546	538	529

There were slight increases in feed consumption from implant treatments. The increases were 2.6, 3.6 and 5.3%, respectively, over non-implanted controls for Ralgro at the shallow site, Ralgro at the deep site and Synovex-S. The increase in feed consumption from implants reduced response in feed efficiency some in comparison to response in rate of gain. The improvements were 6.2, 7.6 and 9.1 over control for the implants in the order listed above.

Finishing Experiment

Procedures

Upon termination of the growing experiment, the steers were reallocated within previous implant treatments into four pens with nine steers per pen (four replications, 36 steers per treatment group). They were reimplanted at this time, receiving the same implant treatment as initially.

Ration ingredients during the finishing phase were the same as during the growing phase. Feeding and management procedures were essentially as during the growing phase. Rations (dry basis) were changed to 15% corn silage, 75% corn grain and 10% supplement. The supplement was of the same ingredient composition as for the growing phase.

Two replications of treatments were terminated after 139 days and the other two after 146 days. Carcass data were obtained following slaughter.

Results

Results of the finishing phase are shown in table 2. Rates of gain were less than during the growing phase even though the level of corn grain made up 75% of the ration (dry basis). However, the growing phase was only 86 days and the rate of gain was high for the type of rations fed.

TABLE 2. RALGRO AND SYNOVEX IMPLANTS FOR FEEDLOT STEERS
(FINISHING PHASE--APRIL 24 TO SEPTEMBER 10 AND 17 - 139 DAYS
FOR TWO REPLICATIONS AND 146 DAYS FOR TWO REPLICATIONS)

Treatment	Control	Zeranol		Synovex-S
		(conventional shallow site)	Zeranol (alternate deep site)	
No. of animals	34 ^a	34 ^a	36	36
Initial shrunk wt, lb	738	758	769	779
Final shrunk wt, lb	1068	1129	1142	1165
Avg daily gain, lb	2.32	2.60	2.62	2.71
Avg daily ration (as fed), lb				
Corn silage	4.80	4.88	4.98	5.11
Corn grain	15.26	15.82	16.17	16.61
Supplement	1.96	2.00	2.08	2.13
Total	22.02	22.70	23.23	23.85
Feed/100 lb gain, lb				
Corn silage	208	198	191	189
Corn grain	660	626	619	614
Supplement	85	79	80	79
Total	953	903	890	882
Hot carcass wt, lb	692	727	735	750
Dressing, %	64.80	63.16	64.27	64.55
Marbling ^b	12.8	12.0	11.7	10.4
Maturity ^c	23	23	23	23
Quality grade ^d	19.8	19.5	19.5	19.1
KPH fat, %	2.9	2.7	2.58	2.5
Rib eye, sq in	11.03	11.34	11.74	11.65
Fat thickness, in	.70	.78	.70	.74
Calculated yield grade	3.97	4.08	3.78	3.90

^aTwo losses occurred in these groups. Results presented are on basis of the 34 steers.

^bSmall = 10, modest = 13 (recorded to 1/3 degree).

^cA maturity = 23; A- maturity = 24.

^dChoice- = 19, choice = 20.

Improvements in rate of gain for implant treatments were similar as for the growing phase, except for a slightly greater response from Ralgro at the conventional shallow site. The improvements over nonimplanted controls were 12.1, 12.9 and 16.8%, respectively, for Ralgro at the shallow site, Ralgro at the deep site and Synovex-S.

Implant treatments also increased feed intake during this phase of the experiment. Increases in order of treatments listed above amounted to 3.1, 5.5 and 8.3%. The greater feed consumption from implant treatments resulted in less response on the basis of feed efficiency than for rate of gain - 5.2, 6.6 and 7.5% for the three treatments.

Implant treatments appeared to reduce fat deposition as indicated by slight reductions in degree of marbling, KPH fat and quality grade but with larger rib eyes. These effects were slightly greater in most cases for Synovex-S than for Ralgro.