

Reimplanting Feedlot Steers

F.N. Owens, D.R. Gill,
J.J. Martin and D.E. Williams

Story in Brief

Steers fed high concentrate rations were implanted with Synovex-S after 56 days on feed, and 70 days after they were implanted with DES, at a mean weight of 986 lb. Implanted steers gained 7 percent or 13 lb more weight the next 62 days than non-implanted steers. Implants tended to increase muscling and decrease fat of carcasses.

Materials and Methods

Two hundred-forty Hereford, Angus and Hereford-Angus crossbred yearling steers were assigned to 30 pens of eight head each. The cattle had been maintained on a 75 percent silage ration for 40 days prior to the beginning of the experiment. The cattle were weighed full initially, with a 5 percent shrink applied, to calculate the starting weight for each animal. Average starting weight was 754 lb.

Routine feedlot vaccinations and a grub control compound were given to each animal prior to the initiation of the trial. All steers received 30 mg DES implants 14 days before the starting date. Half the animals in each pen were implanted with Synovex-S on day 56 of the experiment.

The rations provided two protein levels and two urea levels, 11 percent crude protein with or without 0.5 percent urea, and 12.4 percent crude protein with or without 0.5 percent urea. Six pens of cattle were fed each of these rations. Within these six pens, rumensin was added to the rations for three.

All rations contained 14 percent corn silage and 77 percent high moisture corn. Soybean meal and urea were used as the protein sources. Rumensin was added to the rations at the rate of 30 g per ton of dry matter or 27 g per ton of air dry feed. Sample assays averaged 26.1 g per ton of dry matter. Tylosin was added to all rations at the rate of 10 g per ton of dry matter. One half the animals were slaughtered on day 117 of the trial, and remaining cattle were slaughtered on day 118. Adjusted final weights were calculated from hot carcass weight assuming a constant dressing percentage of 62 percent. The cattle were fed in the experimental pens at Panhandle State University, Goodwell, Oklahoma, from May 10 to August 7.

Results

Since half the steers in each of the 30 pens received implants, information on feed intake or feed efficiency is not available. No interactions of ration composition and implant effects were apparent. Implant effects on gain and carcass characteristics are shown in Table 1.

Performance

Daily gains of steers were increased by reimplantation (56 days to slaughter) by 7 percent. Averaged over the entire trial, gains were 4 percent greater for reimplanted steers. This suggests that reimplanting steers improves gain if the interval from an

earlier implant exceeds 70 days. The earlier implant in this study was DES, but supposedly most other available implants have similar lifespans.

Carcass characteristics

Implantation tended to increase muscling and decrease fat deposition of the carcass. This improved yield grade slightly but tended to reduce quality grade.

Discussion

Implanting finishing steers at the midpoint of the trial with Synovex-S improved gain of steers by 7 percent or 13 lb per head. Earlier reimplant studies by Wagner *et al.* (1976) are compared with this study in Table 2. The greater response noted in the earlier trial may be due to several factors. Their steers were lighter when reimplanted and the time interval from the last implant was longer. All steers were weighed when half were implanted. Consequently, all steers were disturbed and the effects of disturbance involved in implanting a pen of finishing feedlot steers is not considered. Effects on carcass composition suggest that the implants affect steers in a fashion similar to increasing the mature size of the steer as Preston (1978) previously observed. Consequently, a heavier slaughter weight is helpful to maintain quality grade.

Table 1. Effects of implantation on performance of carcass characteristics.

	Implant	
	0	Synovex-S
Weights		
Initial	754	754
56 days	985	987
Slaughter	1171 ^e	1186 ^f
Daily gain		
0-56	4.13	4.16
56-slaughter	3.00 ^b	3.21 ^a
Total	3.66 ^d	3.81 ^c
Carcass characteristics		
Dressing percent	62.7	62.9
Liver abscesses, %	4.2	10.8
Rib eye area,		
sq in	12.0 ^d	12.4 ^c
sq in/cwt carcass	1.65	1.66
Fat thickness, in	.65	.62
Marbling score ^g	11.3	10.9
KHP fat, %	3.31 ^f	3.20 ^e
Yield grade	3.35	3.25
Quality grade ^h	12.77	12.62
Percent choice	68.3	63.3

^{ab} Means with different superscripts differ significantly ($P < .01$).

^{cd} Means with different superscripts differ significantly ($P < .05$).

^{ef} Means with different superscripts differ significantly ($P < .10$).

^g Small minus = 10; Small = 11.

^h Good plus = 12; Choice minus = 13.

Table 2. Summary of Oklahoma reimplant trials.

Trial	Implant	Days since last implant	Reimplant			
			Days of study	Steer weight	ADG	F/G
1976-1	Synovex-S	113	58	864	+9.6%	+5.7%
1976-2	Synovex-S	77	65	892	+8.5%	-----
1979	Synovex-S	56	62	986	+7.0%	-----

Literature Cited

- Preston, R.L. 1978. Anim. Sci. Abstracts. Supplement 1:436.
Wagner, D.G. 1976. Oklahoma State Animal Science Research Report. MP-96, p. 65.

Postruminal Protein for Growing Steers

A.B. Johnson, F.N. Owens,
K.L. Mizwicki, K.B. Poling
and B.R. Wilson

Story in Brief

Three experiments studied the effect of an increased protein supply to the small intestine on feed intake and protein retention of 500- to 600-lb growing steers fed a corn grain-urea ration. Milk protein (casein) was infused into the abomasum at levels from 0 to 120 g daily. Infusions failed to increase protein retention or feed intake. Results suggest that the performance response to higher protein rations seen with feedlot steers may be due to factors other than postruminal protein supply. Results cast doubt on the need for high-bypass protein supplements for feedlot cattle over 500 lb.

Introduction

For feedlot steers under 600 lb fed high energy, highly digestible rations, protein is the nutrient often considered to limit performance. The work supporting this idea comes largely from 1) increased rate and efficiency of gain by feedlot steers receiving supplemental ration protein and 2) increased protein retention of lambs or steers