EFFECTS OF IMPLANTING STEERS THREE AND FIVE WK BEFORE SLAUGHTER WITH TRENBOLONE ACETATE AND ESTRADIOL ON PERFORMANCE AND CARCASS CHARACTERISTICS

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SUMMARY

Thirty-three nonimplanted, crossbred steers were implanted 3 or 5 wk before slaughter with trenbolone acetate and estradiol. Implanted steers had higher ADG and hot carcass weights than the nonimplanted steers, but other carcass traits were not affected. No dark cutting carcasses were observed for any treatment.

INTRODUCTION

Cattle feeders are concerned about the causes of dark cutting beef. Many believe that implants increase the incidence of dark cutting carcasses and increases the closer to slaughter that implanting occurs. The objectives of this study were to determine if implanting 3 or 5 wk before slaughter with trenbolone acetate (TBA) and estradiol (E2) influenced incidence of dark cutting beef and to observe anabolic responses to implanting.

MATERIALS AND METHODS

Nonimplanted, 1,142-lb, crossbred steers (n = 33) that had been fed a finishing diet for 105 d were randomly allotted to one of three treatments: No implant (T0), implanted 3 wk before slaughter (T3) with TBA:E2 (Revalor-S, Hoechst-Roussel), or implanted 5 wk before slaughter (T5).

All steers were offered *ad libitum* a typical High Plains finishing diet (Table 1) consisting mainly of steam-flaked sorghum grain. The diet was balanced to meet or exceed NRC requirements. Steers were weighed on d 0, 14, and 35, with d 0 being 5 wk before slaughter. The steers were slaughtered and carcass data were collected after a 48-h chill. Data were analyzed by the GLM procedures of SAS.

RESULTS AND DISCUSSION

Performance. Implanting the steers increased ADG ($P < .01$, Table 3). Over the 5 wk no difference was found in ADG between implanting 3 or 5 wk before slaughter ($P > .20$). ADG increased 195% above the non-implanted steers for wk 1 and 2. The ADG response to implanting was 257 (T3) and 202% (T5) above the non-implanted steers for wk 3 to 5. This result indicates that a large portion of the response to this implant occurs within the first 21 to 35 d.

Carcass characteristics. Implanting tended to increase hot carcass weights (706, 779 and 776 for T0, T3 and T5, respectively; $P = .12$). No difference was found in the percentage of animals grading Choice across treatments ($P > .5$). No differences in ribeye area, kidney pelvic and heart fat percent, fat thickness, or dressing percentage were noted ($P > .10$). No dark cutting carcasses were observed regardless of treatment.

IMPLICATIONS

Implanting cattle with TBA and E2 greatly increased ADG, even in steers that have been on feed for 105 d. Implanting cattle at 3 or 5 wk before slaughter did no produce any dark cutting carcasses.

Table 1. Composition of diet

Item	DM basis, %
Steam-flaked sorghum grain	56.2
Corn silage	32.2
Cane molasses	4.8
Animal fat	1.5
Cottonseed meal	1.8
Corn gluten meal	.90
Blood meal	.60
Urea	.46
Rumensin premix[a]	.68
Tylosin premix[b]	.34
Vitamin E premix[c]	.03
Vitamin A premix[d]	.29
Salt	.18
Calcium carbonate	.64
Dicalcium phosphate	.13
Potassium chloride	.06
Trace mineral premix[e]	.16

[a]Contained 1,384 ppm of monensin/lb of premix.
[b]Contained 833 mg of Tylosin/lb of premix.
[c]Contained 8,000 IU vitamin E/lb of premix.
[d]Contained 300,000 IU vitamin A/lb of premix.
[e]Contained (ppm of premix): Mn, 8,609; Zn, 8,409; Cu 827; Co, 51; and I, 1,232.

Table 2. Effects of implanting steers 3 and 5 wk beforeslaughter on performance and carcass characteristics

	Implanting time, wk			
Item	None	3	5	SEM
Weight, lb				
d 0	1,094	1,164	1,169	42.3
d 14	1,116[a]	1,177[a]	1,204[b]	43.0
d 35	1,149[a]	1,266[b]	1,272[b]	44.8
ADG, lb				
d 0 to 14	1.52[a]	1.01[a]	2.47[b]	.37
d 15 to 35	1.61[a]	4.14[b]	3.26[b]	.31
Overall	1.56[a]	2.89[b]	2.93[b]	.46
Hot carc. wt, lb	706[a]	774[b]	776[b]	28.7
Dressing percent	61.4	61.2	61.0	.57
Ribeye area, in^2	12.8	13.3	13.5	.59
KPHF, %	2.1	2.2	2.2	.08
Fat thickness, in	.45	.60	.45	.07
Yield grade	2.6	3.1	2.7	.23
Marbling	4.2	4.6	4.0	.24
Choice grade, %	72.7	72.7	63.6	14.5
Dark cutters	0	0	0	0

[a,b]Means in rows with different superscripts differ ($P < .10$).

TTU Research Report
T-5-356 1995 pg 59