

BULL FEEDING – PHASE I
COMPARING BACKGROUNDING PERFORMANCE
OF STEERS WITH LATE CASTRATED BULL CALVES

D.G. Landblom and J.L. Nelson

Research conducted at this station and elsewhere has shown that bull calves fed to slaughter weights by 15-16 months of age gain faster, are more efficient, and yield higher net returns than steers fed similar rations. Other research in which taste panels, shear tests, and consumer appeal were evaluated resulted in favorable acceptance of the retail bull beef cuts. Although acceptable feeding and marketing results have been reported, only a small percentage of bulls are being fed commercially because the federal grading standards do not allow carcasses from either bulls or steers that have dark colored lean, coarse texture, and crests to grade higher than bullock or "stag". Bull carcass data from this station has shown that about half of all bulls fed had dark pigmented muscle tissue and that crests were always present. However, the coarse texture commonly reported was not a problem. These disadvantages have resulted in a bull beef market that is closely tied to the slaughter cow market and without changes in the grading system; feeding bulls to slaughter weights will never become popular.

Feeding bulls to backgrounded weights of 750 pounds before castration has been proposed as a method to take partial advantage of the increased rate of gain and feed efficiency characteristics bulls are noted for. Research in this area of feedlot cattle management is limited and requires further investigation. This experiment was designed to compare the performance of bull calves in which castration has been delayed until the end of the backgrounding phase, with steers handled in a conventional manner.

Hereford X Angus (BWF) steers and bulls averaging over 500 pounds were randomly allotted 12 head per treatment.

The steer calves were implanted at the beginning of the trial with 36 mg. Zeranol (Ralgro). Implanting was done according to the manufacturer's directions, which specified that the implant was to be placed just under the skin approximately one and one-half inches from the base of the ear using aseptic conditions. Once the needle was properly placed in the ear, pulling back slightly allowed space for the implant to be discharged without crushing. The manufacturer and past research indicate that crushing results in a rapid release of the chemical which is undesirable.

The bulls were castrated three weeks prior to selling to insure a sufficient amount of time for adequate healing. A heavy duty squeeze chute and emasculator were used to insure the cattle were adequately restrained and blood loss held to an absolute minimum.

Roughages used were chopped in a tub grinder through a $\frac{3}{4}$ inch screen and were blended with grain and minerals in a portable mixing wagon. The complete mixed rations were self-fed in straight sided feeders of Station design. The rations and changes as they were fed each year of the study are shown in Table 1. Weights, gains, feed costs and a partial economic analysis are shown in Table 2.

Summary:

Implanted crossbred steer calves, when compared to crossbred late castrated bulls, gained .2 pound faster in an average 134 day backgrounding period and were more efficient. Three year average net return was \$10.29 greater for the implanted steers.

The bulls in this study gained faster than the steers before they were castrated, but were substantially set back by castration. Results of this study show no advantage for delaying castration until the end of backgrounding if steers are to be the marketable end product.

Table 1. Ration Percentages and Changes as They Were Fed 1978-80

	Ration Changes				
	Warm-up	1 st Change	2 nd Change	3 rd Change	4 th Change
1978:					
No. days fed	20	90	30		
Oats, %	40	50	75		
Mixed Hay, %	57.5	47.5	23.5		
Di-calcium Phosphate, %	.5	.5	.5		
Salt, %	2	2	2		
1979:					
No. days fed	12	7	93	15	15
Oats, %	30	40	50	50	50
Barley, %	--	5	5	20	30
Mixed Hay, %	67.5	25	15	15	19.3
Oat Straw, %	--	29.5	29.5	14.3	--
Di-calcium Phosphate, %	.5	--	--	--	--
Limestone, %	--	.23	.23	.4	.4
Salt, %	2	.27	.27	.3	.3
1980:					
No. days fed	21	82	16		
Oats, %	30	25.1	25.1		
Barley, %	--	31.2	41.2		
Mixed Hay, %	67.5	--	--		
Oat Straw, %	--	22.4	12.4		
Alfalfa, %	--	20.7	20.7		
Di-calcium Phosphate, %	.5	.2	.2		
Limestone, %	.1	.1	.1		
Salt, %	2	.3	.3		

Table 2. 1980 and Three Year Average Backgrounding Weights, Gains, Feed Summary, Costs, Returns and Partial Economic Analysis for Crossbred Steers and Late Castrated Bulls

	Beef Steers		Late Castrated Beef Bulls ^{1/}	
	1980	3 yr Avg.	1980	3 yr Avg.
Gains:				
No. head	12	36	11 ^{2/}	34 ^{3/}
Days fed	119	134	119	134
Initial wt., lbs.	536	515	564	531
Final wt., lbs.	800	799	790	794
Gain, lbs.	264	285	226	263
ADG, lbs.	2.22	2.1	1.9	1.93
Feed Summary:				
Feed/head, lbs.	2325	2691	2617	2719
Feed/head/day, lbs.	19.5	20.0	22	20.3
Feed/lb. of gain, lbs.	8.8	9.5	11.6	10.5
Feed Costs:				
Feed cost/head, \$	88.92	100.83	99.83	101.38
Feed cost/cwt gain, \$	33.68	35.38	44.17	38.55
Returns:				
Sale weight, lbs.	774	760	771	764
Percent shrink, %	3.2	4.9	2.4	3.8
Selling price/cwt, \$	65.00	68.28	66.00	66.97
Gross return/hd on sale wt, \$	503.21	518.98	508.75	511.67
Partial Economic Analysis^{4/}:				
Feed cost/hd, \$	88.92	100.83	99.83	101.38
Implant cost, \$.60	.60	---	---
Feeder calf cost, \$	482.40 ^{5/}	385.38	479.40 ^{6/}	388.41
Net return, \$	-68.71	32.17	-70.48	21.88

1/ Bulls were castrated three weeks before marketing.

2/ One bull removed in 1979 and 1980.

3/ One bull removed in 1979 and 1980.

4/ Economic analysis accounts for only direct feed costs, grinding costs at \$20.00/ton, estimated feeder calf value and implant expense. No value has been placed for other variable and fixed costs associated with livestock feeding.

5/ Feeder calf cost per pound for steers in 1980 - 90¢.

6/ Feeder calf cost per pound for bulls in 1980 - 85¢.