

## THE PERFORMANCE OF INDUCED CRYPTORCHIDS AND STEERS

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Over the past few years much controversy has developed over the livestock growth stimulant Diethylstilbestrol (DES). DES had been banned by the Food and Drug Administration and then reinstated by a court decision. There have been and still are movements in Congress to ban its use as a livestock growth stimulant. This is not consistent with overall goals of increasing efficiency, using less grain and producing leaner carcasses.

Feeding bulls is an immediate alternative as bulls will gain faster and more efficiently than steers. However, bull feeding has several disadvantages. Bulls are difficult to manage, grade lower, and develop undesirable secondary sex characteristics. The relatively new grade of Bullock has only added confusion.

This study was undertaken to evaluate induced cryptorchids as potential slaughter cattle. Cryptorchids are produced by pushing the testicles up into or next to the body cavity and placing a rubber band around the empty sac which then falls off and the testicles remain in or next to the body cavity. Some researchers have coined the term "short scrotum bulls" when describing cryptorchids. The theory is that by inducing cryptorchidism the ability of the intact animal to gain faster and more efficiently than steers will be retained but the development of undesirable "bullish" characteristics will be stopped or retarded.

EXPERIMENTAL PROCEDURE

Male calves of the 1972, 1973 and 1974 calf crops were used in the experiment. Originally the animals were put in five treatments. However, one treatment contained DES so when it was banned Zeranol was substituted. When DES was again allowed on the market a sixth group was added so both DES and Zeranol could be used. The six treatments were: 1) made cryptorchid at birth; 2) made cryptorchid at 60 days of age; 3) castrated at birth; 4) castrated at 60 days; 5) castrated at birth and DES implants; 6) castrated at birth and Zeranol implants. DES implanted calves received 6 mg at birth, 15 mg at 60 days of age, 15 mg upon entering the feedlot and 15 mg midway through the feeding period. Zeranol implanting followed the same time schedule but the doses were 12, 24, 36 and 36 mg.

Weights were taken periodically and average daily gains recorded. The animals were group-fed by treatment so an estimate of feed efficiency could be made. Carcass data were collected at slaughter.

RESULTS AND DISCUSSION

Performance data are presented in Table 1. While in the feedlot all cattle were fed similarly. Standard feedlot procedures were followed. As time on feed increased the amount of energy in the diet increased and fiber decreased

Table 1. Suckling and feedlot performance

Item	Cryptorchids		Steers		Implanted Steers <sup>1/</sup>	
	Birth	60 days	Birth	60 days	DES	Zeranol
Weaning wt., lb.	410	407	403	409	420	403
Suckling ADG, lb.	1.93	1.92	1.83	1.92	1.81	1.92
Wt. into feedlot, lb.	500	488	486	483	494	483
Final wt., lb.	1070	1038	1029	1013	1062	1019
Feedlot ADG, lb.	2.79	2.61	2.25	2.20	2.57	2.39
Feed conversion, lb.	6.6	6.7	7.4	7.5	7.0	7.6
Days on feed	208	210	242	242	221	224

1/. Data somewhat limited because these groups were not represented in all three years.

The effects of cryptorchidism and implanting did not show up in the suckling calf. Little difference among groups in average daily gain was observed.

Feedlot performance was highest in the two cryptorchid groups, with Cryptorchids gaining at a faster rate than any of the steer groups. Zeranol and DES implanted steers out-gained the non-implanted steers. Steers implanted with DES gained slightly more than those implanted with Zeranol. Both cryptorchid groups were on feed the least number of days (208, 210), while non-implanted steers were on feed the longest (242, 242). Implanted steers were intermediate (221, 224). Late in the feeding period the cryptorchids became more bull-like. Riding and bellowing occurred regularly and the hair on the face began to curl.

Carcass data, Table 2, revealed that the cryptorchids were superior to any of the steer groups in yield grade and ribeye area. Backfat thickness did not show specific trends. However, USDA grades showed definite differences. None of the cryptorchids graded Choice, while several of the steers among all three steer groups graded Choice. The steers implanted with Zeranol have a lower percentage of Choice because they were not fed in 1972 when the Choice/Good ratio was highest of the three study years. Cryptorchids sold in 1973 all graded High Good. However, in 1974, 12 of the 19 cryptorchids sold were designated Bullock and were dark cutters. They graded High Good but because of the dark cutter designation and Bullock grade were dropped 2/3 of

a grade. In 1974, 12 of 14 cryptorchids sold were graded Bullock but none were dark cutters. In 1972 testicles were removed at slaughter but during the next two years they were left on the carcasses. Average conformation scores were 17.9, 18.6, 17.4, 17.5, 17.8, and 18.0 (17=Choice, 19=Prime-) for treatment 1 through 6, respectively. Cryptorchids graded very well based on conformation, as good or better than steers. Therefore, the cryptorchids probably were graded Bullock more because of the presence of testicles on the carcass than on a "bullish" conformation.

Table 2. Carcass data

Item	Cryptorchids		Steers		Implanted Steers <sup>1/</sup>	
	Birth	60 days	Birth	60 days	DES	Zeranol
Warm carcass wt., lb.	629	617	604	576	617	593
Ribeye area, sq. in.	12.7	12.3	10.8	10.6	11.2	10.7
Backfat, inches	0.34	0.40	0.47	0.32	0.35	0.48
USDA grade <sup>1/</sup>	14.4	14.5	15.4	15.3	15.3	14.6
Number choice	0	0	11	11	8	3
Number good	26	26	15	16	10	17
Yield	2.00	1.95	2.72	2.51	2.52	2.67

<sup>1/</sup> Based on 14=Good, 15=Good+, 16=Choice-, 17=Choice.

If cryptorchids are to be marketed profitably it may require a change in the procedure of leaving the testicles on the carcass or a change in the Bullock grade. The occurrence of dark cutters may be reduced by improved handling of these animals prior to slaughter. Cryptorchids may net more even with less money per pound, due to the shorter feeding period and increased efficiency of feed.

Data presented indicate that:

1. Cryptorchids gain more rapidly than steers.
2. Implanted steers gain more rapidly than non-implanted steers.
3. Feed efficiency is better with cryptorchids.
4. At 1000-1100 pounds cryptorchids lack sufficient marbling to grade Choice, however, yield grades and ribeye areas are superior to steers.
5. The occurrence of dark cutters and carcasses grading Bullock pose serious problems.
6. Secondary sex characteristics and "bull-like" behavior occur toward the end of the feeding period with cryptorchids.

Induced cryptorchidism is a tool that can be used to improve average daily gain and efficiency of feedlot cattle. The occurrence of secondary sex characteristics late in the feeding period suggests that cryptorchids should be put in the feedlot at weaning and slaughtered by 18 months of age. For this reason, cryptorchids would definitely not fit a yearling program. The carcass produced can be expected to grade Good but have a yield of 2. The carcass may also be graded as "Bullock" or be a dark cutter, and consequently it will be docked about 2/3 of a grade and worth less. Based on the carcass data presented more information should be gathered before cryptorchids could be recommended.

Performance of Calves as Influenced by the  
 1 - Special Report 126 1951  
 2 - Special Report 127 1951  
 3 - Special Report 128 1951  
 4 - Special Report 129 1951  
 5 - Special Report 130 1951  
 6 - Special Report 131 1951  
 7 - Special Report 132 1951  
 8 - Special Report 133 1951  
 9 - Special Report 134 1951  
 10 - Special Report 135 1951  
 11 - Special Report 136 1951  
 12 - Special Report 137 1951  
 13 - Special Report 138 1951  
 14 - Special Report 139 1951  
 15 - Special Report 140 1951  
 16 - Special Report 141 1951  
 17 - Special Report 142 1951  
 18 - Special Report 143 1951  
 19 - Special Report 144 1951  
 20 - Special Report 145 1951  
 21 - Special Report 146 1951  
 22 - Special Report 147 1951  
 23 - Special Report 148 1951  
 24 - Special Report 149 1951  
 25 - Special Report 150 1951  
 26 - Special Report 151 1951  
 27 - Special Report 152 1951  
 28 - Special Report 153 1951  
 29 - Special Report 154 1951  
 30 - Special Report 155 1951  
 31 - Special Report 156 1951  
 32 - Special Report 157 1951  
 33 - Special Report 158 1951  
 34 - Special Report 159 1951  
 35 - Special Report 160 1951  
 36 - Special Report 161 1951  
 37 - Special Report 162 1951  
 38 - Special Report 163 1951  
 39 - Special Report 164 1951  
 40 - Special Report 165 1951  
 41 - Special Report 166 1951  
 42 - Special Report 167 1951  
 43 - Special Report 168 1951  
 44 - Special Report 169 1951  
 45 - Special Report 170 1951  
 46 - Special Report 171 1951  
 47 - Special Report 172 1951  
 48 - Special Report 173 1951  
 49 - Special Report 174 1951  
 50 - Special Report 175 1951  
 51 - Special Report 176 1951  
 52 - Special Report 177 1951  
 53 - Special Report 178 1951  
 54 - Special Report 179 1951  
 55 - Special Report 180 1951  
 56 - Special Report 181 1951  
 57 - Special Report 182 1951  
 58 - Special Report 183 1951  
 59 - Special Report 184 1951  
 60 - Special Report 185 1951  
 61 - Special Report 186 1951  
 62 - Special Report 187 1951  
 63 - Special Report 188 1951  
 64 - Special Report 189 1951  
 65 - Special Report 190 1951  
 66 - Special Report 191 1951  
 67 - Special Report 192 1951  
 68 - Special Report 193 1951  
 69 - Special Report 194 1951  
 70 - Special Report 195 1951  
 71 - Special Report 196 1951  
 72 - Special Report 197 1951  
 73 - Special Report 198 1951  
 74 - Special Report 199 1951  
 75 - Special Report 200 1951