

Effect of Stilbestrol Implants On Summer Gains and Subsequent Feedlot Performance of Yearling Steers

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In Oklahoma many steers graze native grass pastures during the summer with no supplemental feed except minerals. Stilbestrol is used as a means of increasing gains of beef cattle in many different feeding or grazing systems. The response to implanting steers on summer pasture is apparently related to grazing conditions—that is, the greatest response is expected when the forage will support a high rate of gain.

Under grazing conditions the preferred method of stilbestrol administration would be implants. Apparently one implant is effective for the entire grazing season. When high levels of stilbestrol are implanted, certain side effects such as elevated tail-heads, flat loins, and increased teat length are sometimes observed. An important question is whether or not low level implants which do not produce the undesirable side effects, are effective in increasing gain. During the summer of 1958, the value of 0, 12, 24, and 36 mg. of stilbestrol implanted in the ear of steers was studied. Implants increased gains an average of 25 lbs. and with 12 mg. as effective as a higher level.

Certain cattle feeders have questioned the practice of implanting steers during the grazing season because it is possible that the subsequent performance in the feedlot will be affected. Many feeder buyers believe that there should be some price discrimination against implanted cattle since it is possible that these cattle may not perform as well in the feedlot or respond as well to further stilbestrol treatment as those not previously implanted. This is a problem of considerable economic importance.

The research conducted to date at the various experiment stations has indicated that the subsequent performance of calves implanted when they are 3 to 5 months old is not adversely affected when they are fattened in dry lot or fed wintering rations after weaning. The data concerning the subsequent performance of yearlings has been variable. In some instances the subsequent feedlot performance has not been affected. In other tests the feedlot gains have been reduced .05 to .20 pound due to previous summer implants. In order to obtain more data on this problem, the feedlot performance of control and implanted yearling cattle used in a summer grazing test was observed in a subsequent fattening trial.

Part 1. Implanting Steers on Native Grass

Procedure

On May 14, 1959, 75 grade Hereford yearling steers were divided into two lots. A group of 37 steers served as controls. A group of 38 steers was implanted with 12 mg. of stilbestrol. These cattle were allowed to graze the native grass pastures at the Lake Blackwell experimental range area with no supplemental feed except a mineral mixture of 2 parts salt and 1 part steamed bone meal. These steers previously had been used in a wintering experiment. Certain of the steers had been implanted with stilbestrol at the beginning of the wintering season. An equal number of previously implanted steers was placed in each summer lot.

Results

Average weight data for the two groups of steers is given in Table 1. In the 118-day period a 12 mg. stilbestrol implant increased gain 11 lbs. (7.4%). There were no noticeable changes in general appearance of the steers due to stilbestrol implants.

Table 1.—The Effect of Stilbestrol Implants on Gains of Yearling Steers Grazing Native Grass.

Lot Number Stilbestrol Implant ¹	1 0	2 12 mg.
Number of steers per lot	37	38
Average weight per steer (lbs.)		
Initial 5-14-59	567	567
Final 9-9-59	740	751
Gain (118 days)	173	184

¹ Implants furnished by Chas. Pfizer and Co., Inc., Terre Haute, Indiana.

Part 2. Feedlot Performance of Previously Implanted Steer Calves

Procedure

Sixty-four of the steers used in the above summer grazing trials were selected for use in a fattening test at the Ft. Reno station. A shrunk weight on October 16, 1959, which was taken after 18 hours off feed and water, was used as the ending weight of the summer season and the starting weight of the fattening trial. Although, as reported in Part 1, the average increase in gain for the period ending September 9 was 11 lbs. for all steers in the test, the gain advantage (to October 16) of the steers selected for the fattening test was 24 lbs.

The steers were divided into 8 groups of 8 steers each as a part of a study of soybean oil meal vs. urea supplements, with and without

trace minerals (reported elsewhere in this publication). The cattle were full-fed ground milo, 1.5 to 2.0 pounds of protein supplement per head daily, and a limited amount of sorghum silage or cottonseed hulls. At the start of the feeding test all steers were implanted with 24 mg. of stilbestrol.

At the end of the 154-day feeding test, a shrunk weight was obtained and the cattle were slaughtered at Oklahoma City. Dressing percentage and carcass grades were obtained for individual steers. From these, the current value of the carcass, and the final weight at Ft. Reno, an on-foot value per 100 pounds was computed.

Results

A summary of the data is given in Table 2.

The average increase in summer gain due to a 12 mg. stilbestrol implant in May was 24 lbs. The feedlot gains of these steers were 407 and 385 lbs. for those having no summer implant and 12 mg., respectively. This was a reduction of 22 lbs. for the period or 0.14 lb. per head daily. The response was variable; this variation was from no difference to a reduction of 60 lbs. due to previous summer implant. The lowest feedlot gain was for those in Lot 4 which had been implanted with 12 mg. both at the beginning of the winter and the summer prior to the fattening test. The greatest feedlot gain was in Lot 3, implanted in November but not in May. The carcass grades of the previously implanted cattle were slightly lower but the dressing percentage of these cattle was slightly higher.

On the basis of the average response and considering no difference in feed consumption or efficiency during the fattening phase, it is estimated that the value of 700 lb. yearling feeder steers in the fall would be reduced approximately \$.80 per 100 lbs. because of previous summer implants.

Previous winter implants apparently had a slight effect upon feedlot gains of steers during the following winter. The average feedlot gains were 405, 392, and 391 lbs. for 0, 12, and 24 mg. of implants during the previous winter. The summer response to summer implants was reduced slightly because of previous winter implants. This increased summer response was 32, 24, and 14 lbs. for the three winter implants, respectively.

The total gain (winter, summer, and winter) varied from 596 to 623 lbs. The lowest was for those not implanted in the previous winter or summer; the highest was in Lot 6, implanted with 24 mg. in winter and

Table 2.—Effect of Previous Stilbestrol Implantation (Winter and Summer) on the Performance of Yearling Steers in the Feed-lot (154 days).

Lot Number	Number of Steers	Implants, mg. ¹				Gains, lbs.				Daily Feedlot	Carcass Grade Score ²	Dressing Percentage ³	Live Value per cwt. (\$)⁴
		Winter	Summer	Winter	Summer	Winter	Summer	Feedlot	Total				
1	16	0	0	51	140	405	596	2.63	6.0	59.4	24.99		
2	15 ⁵	0	12	45	172	405	622	2.63	6.1	59.8	25.01		
Average				48	156	405	609	2.63	6.1	59.6	25.00		
3	8	12	0	57	142	422	621	2.74	5.9	58.5	24.60		
4	8	12	12	71	166	362	599	2.35	6.6	58.4	24.18		
Average				64	154	392	610	2.55	6.3	58.5	24.39		
5	8	24	0	64	145	394	603	2.56	6.4	58.4	24.34		
6	8	24	12	76	159	388	623	2.52	6.1	59.7	25.61		
Average				70	152	391	613	2.54	6.2	59.1	24.98		
1,3,5	32	No summer implant		57	142	407	606	2.64	6.1	58.8	24.64		
2,4,6	31	Summer implant		64	166	385	615	2.50	6.3	59.3	24.93		

¹ All steers were implanted with 24 mg. of stilbestrol at the beginning of the feedlot phase.

² Carcass grades scored as follows: Low Choice, 4; Choice, 5; High Good, 6; Good, 7; and Low Good, 8.

³ Based on hot carcass weight shrunk 2½ percent and live weight (shrunk) at Ft. Reno.

⁴ Based on carcass grade, yield, value, and final live weight.

⁵ One steer died during the feedlot test.

12 mg. in summer. These groups also had the lowest and highest live values per 100 lbs., respectively.

Differences in carcass grades and dressing percentage were small. There were no noticeable changes in general body conformation due to winter or summer implants. Shortly after all steers were implanted with 24 mg. at the beginning of the feedlot test some of them exhibited elevated tailheads. These differences soon disappeared and there were no noticeable side effects at time of marketing.

Summary

Stilbrol implants (12 mg.) increased summer gains of yearling steers 11 lbs. The increased gain of certain steers which were selected for a subsequent fattening test was 24 lbs. In the subsequent fattening test in which all steers were implanted with 24 mg. of stilbrol, the average feedlot gain was reduced 22 lbs. due to previous summer implants, although there was considerable variation between lots. Previous summer implants decreased carcass grade but increased dressing percentage. These differences were very small.

Greatest feedlot gain was for those implanted with 12 mg. in the winter and no implant in the summer. Lowest feedlot gains were for those implanted with 12 mg. in both seasons. Greatest total gain (15 months) was for those implanted with 24 mg. in winter and 12 in summer. All steers were implanted with 24 mg. at the beginning of the feedlot test.

On the basis of the average response and considering no difference in feed consumption or efficiency during the feedlot phase, it is estimated that the value of a 700 lb. yearling feeder steer in the fall would be reduced approximately \$.80 per 100 lbs. because of previous summer implants.

Effect of Level of Wintering Fall-Calving Beef Cows and Replacement Heifers

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In recent years there has been an increased number of cows calving in the fall. This change in calving season has resulted in a need for additional data on feeding and managing such cattle grazing native grass (Bluestem and associated grasses) year-long. Because of the increase in nutritive requirements of a cow suckling calf, it is of primary im-