From the results of these experiments, it is questionable whether tranquilizers have as much potential for increasing profits in meat animals as one would gather from advertisements. Undoubtedly tranquilizers are of great value in selected situations. More studies are needed before such situations can be precisely defined.

Effect of Stilbestrol Implants on Summer Gains And Subsequent Feedlot Performance of Yearling Steers

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Stilbestrol has been widely used as a means of increasing gains of fattening beef cattle. Experiments have indicated a smaller response from implanting or feeding stilbestrol to cattle on wintering rations. The response obtained on summer pasture is apparently related to grazing conditions. In areas of the country where legumes and legume-grass mixtures predominate, stilbestrol implantation has resulted in marked increases in gain.

In Oklahoma, most steers graze native grass pastures during the summer with no supplemental feed except minerals. Under these conditions, the preferred method of stilbestrol administration would be implants. Apparently one implant will last 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 are effective in increasing weight gains.

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

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. Elsewhere in this publication is an article dealing with the subsequent performance of previously implanted suckling calves which indicates no apparent adverse effects when fed fattening rations or under wintering conditions.

Part I. Implanting Steers on Native Grass

Procedure

In late May, 1958, 88 grade Hereford yearling steers were divided into four lots. These steers had previously been used in a wintering experiment at the Lake Blackwell range area.

At the beginning of the summer test the steers in Lots 2, 3, and 4 were implanted in the ear with 12, 24, and 36 milligrams of stilbestrol, respectively. Steers in Lot 1 served as controls. All cattle were allowed to graze the native grass pastures with no supplemental feed. A mineral mixture of 2 parts salt and 1 part steamed bone meal was available in all lots.

Results

Weight gains are summarized in Table 1. The control steers gained 149 pounds in the 98-day period, whereas stilbestrol-implanted steers gained 174 pounds, or an average of 25 pounds (17 percent) more. The gains of those implanted with different amounts of stilbestrol were nearly equal: 176, 170, and 175 pounds for 12, 24, and 36 milligrams respectively. Apparently 12 milligrams of stilbestrol was adequate to achieve optimum gains under the conditions of this study.

A few of the steers implanted with the higher levels of stilbestrol had noticeably higher tail-heads. Such side effects are probably related to the level of stilbestrol. In this test, it appeared that the 12 milligram implant level was sufficient to produce increased gains with a minimum of adverse side effects.

Part II. Feedlot Performance of Previouly Implanted Steers

Procedure

Eighty of the steers used in the above pasture trials were trucked to Fort Reno at the completion of the summer grazing test. Sixty-four of these steers were selected for use in a fattening test which started

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

Lot number Stilbestrol implants[1]	1 0	2 12 mg.	3 24 mg.	4 36 mg.
Number of steers per lot	23	22	21	22
Average weight per steer (lbs.)				
Initial 5-28-58	572	580	579	584
Final 9-2-58	721	756	749	759
Gain (97 days)	149	176	170	175

[1] Stimplants furnished by Chas. Pfizer and Co. Inc., Terre Haute, Indiana.

October 17, 1958. From the time they were weighed off the summer pasture tests at Lake Carl Blackwell on September 2 until the fattening tests were initiated, the cattle were maintained on native grass at Fort Reno, with no supplemental feed. The weight change during this period was included as part of summer gain. Shrunk weights (18 hours off feed and water) were obtained at the start of the fattening trial.

Sixteen steers which were not used in the fattening test were marketed at Oklahoma City after considerable sorting and handling at Fort Reno. At this time, many of the steers were exhibiting some marked side effects with a considerable number of high tail-heads and low loins. Their appearance was such that feeder buyers on the market were reluctant to bid on the cattle, except at a lower price.

Sixty-four 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 pounds of protein supplement per head daily, and a limited amount of sorghum silage. At the start of the feeding test one-half of the steers in each lot were implanted with 24 milligrams of stilbestrol.

At the end of the 157-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 and the current value of the carcass, an on-foot value was computed, based on final live weights at Fort Reno.

Results

Steers in Lots 1 and 2, which did not receive stilbestrol during the summer, gained an average of 2.78 pounds per head daily while on feed (Table 2). The next greatest feedlot gain was made by steers of Lots 7 and 8 which had been implanted with 36 milligrams of stilbestrol in early summer. Their average gain was 2.71 pounds per day. Steers of Lots 5 and 6 which had been implanted with 24 milligrams in May gained slightly less. Those previously implanted with 12 milligrams gained the least.

It appeared from this limited test that there was no consistent response to previous summer implants, although cattle that were not implanted in the summer made the greatest gains in the feedlot.

There was considerable variation in response of individual groups of cattle when they were subdivided into no implant and 24 milligram groups during the feeding period. The greatest feedlot gain was 3.13 pounds per head daily made by those in Lot 2 which had no summer implant, but a 24 milligram feedlot implant. They gained 113 pounds more than those in Lot 1 which were not implanted in the feedlot. This 32 percent increase is considerably more than the increase one should expect from a 24 milligram implant. The overall average increase in gain due to the 24 milligram feedlot implant was 59 pounds. Much of the variation in results may have been due to the small number of steers per lot.

TABLE 2. Effect of previous stilbestrol implantation on the performance of yearling steers in the feed-lot (157-days).

Lot Number	Number of Steers[1]	Implants, mg.		Gains, lbs.			Final weight lbs. 3-23-59	Carcass grade and score[2]	Dreessing Percentage[3]	Live value per cwt.[4]
		Summer	Feedlot	Summer	Feedlot	Daily feedlot				
1	8	0	0	147	379	2.41	1113	Ch— (6.8)	61.1	26.72
2	8	0	24	144	492	3.13	1236	Ch— (7.0)	61.2	26.91
3	8	12	0	190	359	2.29	1101	Ch— (7.0)	60.4	26.47
4	7	12	24	198	396	2.52	1180	Gd+ to Ch— (6.4)	61.4	26.67
5	8	24	0	182	373	2.38	1117	Gd+ to Ch— (6.5)	60.0	26.13
6	6	24	24	175	446	2.84	1201	Ch— (6.7)	60.7	26.48
7	6	36	0	192	421	2.68	1226	Gd+ to Ch— (6.5)	59.5	25.88
8	8	36	24	165	432	2.75	1188	Gd+ to Ch— (6.6)	60.9	26.59
1, 3, 5, 7	30	4 levels	0	178	383	2.44	1139	Ch— (6.7)	60.2	26.30
2, 4, 6, 8	29	4 levels	24	170	442	2.82	1201	Ch— (6.7)	61.0	26.66
1, 2	16	0	0, 24	146	436	2.78	1174	(6.9)	61.2	26.82
3, 4	15	12	0, 24	194	378	2.41	1140	(6.7)	60.9	26.57
5, 6	14	24	0, 24	178	410	2.61	1159	Gd+ to Ch—(6.6)	60.4	26.30
7, 8	14	36	0, 24	178	426	2.71	1207	Gd+ to Ch— (6.6)	60.2	26.24

[1] Originally there were 8 steers in each of Lots 1, 2, 3, 5, 7, and 8. There were 9 steers in Lot 4 and 7 steers in Lot 6. A sick steer was removed from each of Lots 6 and 7. Two foundered steers were removed from Lot 4 and one from Lot 7.
[2] Carcass grades are based upon the following scores: High Choice, 9; Choice, 8; Low Choice, 7; High Good, 6; and Good, 5.
[3] Based on hot carcass, weight shrunk 2½ percent and live weight (shrunk) at Fort Reno.
[4] Based on carcass grade and value, yield, and final live weight off test.

If the lots were ranked as to feedlot gain by summer implant groups only, the order would be 0, 36, 24, and 12 milligrams. There was no consistent relationship, therefore, between subsequent feedlot gain and increased level of stilbestrol implant in summer.

With steers not implanted at the beginning of the feeding period, the rank of feedlot gains was in the following order: 36,0, 24 and 12 milligrams. Within the feedlot-implanted groups, the ranking becomes 0, 24, 36, and 12 milligrams. With such variation, additional data are needed before recommendations can be made concerning the effect of summer implants on subsequent feedlot performance.

There were only slight differences in carcass grade. In three out of four comparisons, the 24 milligram feedlot implant slightly increased carcass grade, although the average grade when comparing the four implanted groups to the four non-implanted groups was the same. In all four comparisons, dressing percentage of implanted cattle was slightly increased. This was further reflected in live value per cwt.

Although differences were small, carcass grades and dressing percentage were highest for those not implanted in the summer and those implanted with only 12 milligrams. Live value per cwt. varied in the same manner.

During the early part of the feedlot period, some of the steers which had been recently implanted exhibited high tail-heads. These became less noticeable as the feeding period progressed and little difference was observed when the steers were marketed.

Summary

Stilbestrol implants increased summer gains of yearling steers grazing native grass an average of 25 pounds or 17 percent. The gains of those implanted with 12, 24, and 36 milligrams of stilbestrol were essentially the same.

In a subsequent fattening trial, a 24 milligram stilbestrol implant increased feed lot gains an average of 15 percent. The average carcass grade was the same for both groups. The dressing percentage and live value per carcass were slightly greater for the implanted steers.

The subsequent feedlot gain of previously stilbestrol implanted cattle was greatest for those not previously implanted followed, in order, by 36, 24, and 12 milligram levels. Greatest feedlot gains were made by those steers not implanted in the summer and implanted with 24 milligrams of stilbestrol at the beginning of the feedlot period. The second largest feedlot gain was by steers implanted with 24 milligrams, both in the summer and at the start of the feedlot trial.

There was considerable variation in response and there was no consistent relationship between subsequent performance and increased level of stilbestrol implant in the summer. Additional data are needed before recommendations can be made concerning the effect of summer implants on subsequent feedlot performance.