

3. There were no great differences in the overall appearance of animals in the two groups at the end of the trial.

**Table 33**

**Feedlot Performance of Steers Implanted with Stilbestrol Prior to the Grazing Season.**

December 16, 1957, to March 26, 1958—100 days.

Treatment on pasture .....	Implant	Control
Lot number .....	5	6
Number steers .....	10	10
Av. initial wt., lbs. ....	780	771
Av. final wt., lbs. ....	1150	1101
Av. total gain, lbs. ....	370	330
Av. daily gain, lbs. ....	3.70±0.14 <sup>1</sup>	3.30±0.17 <sup>1</sup>
Av. daily ration, lbs.:		
Ground sorghum grain .....	20.7	19.5
Soybean meal + stilbestrol .....	1.0	1.0
Alfalfa hay .....	7.7	8.0
Av. lbs. feed per cwt. gain:		
Ground sorghum grain .....	559.31	590.85
Soybean meal + stilbestrol .....	27.02	30.30
Alfalfa hay .....	208.05	242.40
Av. feed cost per cwt. gain, \$ .....	13.80	14.82
Selling price per cwt. <sup>2</sup> .....	26.25	26.25
Av. carcass grade <sup>3</sup> .....	12.0	11.7

1. Standard error of mean.

2. Sold on Kansas City market.

3. Average grade determined as follows: High choice, 15; average choice, 14; low choice, 13; high good, 12; average good, 11; low good, 10; high standard, 9.

**The Use of Stilbestrol<sup>1</sup> and Synovex<sup>2</sup> Implants for Steers on a Wintering Ration (Project 253-6).**

B. A. Koch, E. F. Smith, R. F. Cox, D. Richardson and G. L. Walker

This is the third test designed to study the value of stilbestrol implants for steer calves being fed a wintering-type ration. Synovex implants are being used for the second time. Both products are being used successfully to increase the daily gains of steers on high-energy fattening rations. Information concerning their value for calves being fed high-roughage wintering diets is rather limited, however.

#### Experimental Procedure

Fifty-eight steer calves from New Mexico, weighing approximately 550 pounds each, were divided into three groups (one group each of 10, 20, and 28) at the beginning of the wintering period. Pre-selected calves will be removed from each of the larger groups at the end of the wintering period and used in a pasture study. Ten calves in each treatment group will be continued through a fattening study.

The group of 20 animals served as a control lot. Each animal in the group of 28 received a 24-mg. implant of stilbestrol in the right ear at the start of the wintering period. Each animal in the group of 10 received a Synovex implant (200 mgs. of progesterone and 20 mgs. of estradiol benzoate) in the right ear at the start of the wintering period.

The daily rations fed per animal were as follows: sorghum grain, 4 pounds; soybean oil meal, 1 pound; sorghum silage, 15 pounds; prairie hay, free-choice.

1. Supplied by Chas. Pfizer and Co., Inc.

2. Supplied by E. R. Squibb and Son.

3. Each implant contained 200 mgs. progesterone plus 20 mgs. estradiol benzoate.

All of the animals had access to a mixture of bonemeal and salt. They also had access to salt alone. Water was available at all times from heated, automatic waterers. The cattle were in outdoor lots with no access to shelter.

#### Observations

Undesirable side effects such as high tailheads, elongated teats and sexual stimulation were not apparent in any of the implanted steers. However, some of the implanted steers appeared to show some slight lowering of the pin bones. As a group, the steers implanted with stilbestrol appeared somewhat rougher over the top than control animals at the end of the test.

Both of the implanted groups of animals showed greater daily gains than the control animals. The synovex-implanted animals gained considerably more than the stilbestrol-implanted animals.

Feed cost per cwt. gain was lowest for the implanted animals. The synovex-implanted animals showed the lowest cost of gain. The synovex-implanted animals also apparently utilized their ration somewhat more efficiently than the other two groups.

This is the third wintering trial in which stilbestrol implants were studied. Results can be compared in a general way but certain differences in procedure should be considered. In all three trials the stilbestrol-implanted animals gained faster and more efficiently than control animals. In the first two trials this increase in daily gain was about .25 pound per day. In the third trial it was only .12 pound per day. It should be remembered, however, that the animals used in this third trial were larger than those fed previously, while the diet was somewhat lower in net energy.

Thus, the amount of energy available to the animals was lower than in previous tests. Most tests have shown that stilbestrol gives greatest returns when animals receive ample energy in their diet. Animals in the first two trials were kept on concrete and had access to shelter, while animals in the current trial were in dirt lots and had no access to shelter.

Results of three successive wintering trials indicate that stilbestrol implants at low levels will increase winter gains. The amount of the increase apparently depends upon the energy level of the diet fed. In view of most recent results it appears that the implants may change the appearance of the calves under certain conditions.

Results of two successive wintering trials in which calves were implanted with synovex indicate that the implant will improve gain and increase efficiency when calves are receiving high roughage rations. In both trials cost of gain, including cost of implant, was considerably lower for the implanted animals. No physical changes were apparent in the animals at the conclusion of the test period.

**Table 34**

**The Use of Stilbestrol and Synovex Implants for Steer Calves on a Wintering-Type Ration.**

December 5, 1957, to March 25, 1958—110 days.

Treatment .....	Control	Synovex implant	Stilbestrol implant
Lot number .....	22	20	21
Number steers .....	20	10	28
Av. initial wt., lbs. ....	548	546	551
Av. final wt., lbs. ....	708	741	725
Av. total gain, lbs. ....	160	195	174
Av. daily gain, lbs. ....	1.46±0.07 <sup>1</sup>	1.77±0.11 <sup>1</sup>	1.58±0.05 <sup>1</sup>
Av. daily ration, lbs.:			
Ground sorghum grain .....	4.0	4.0	4.0
Soybean oil meal .....	1.0	1.0	1.0
Sorghum silage .....	13.1	13.1	13.7
Prairie hay .....	6.9	7.2	6.9

1. Standard error of mean.

Table 34 (Continued)

Av. lbs. feed per cwt. gain:			
Ground sorghum grain .....	274	226	253.20
Soybean oil meal .....	68.50	56.50	63.30
Sorghum silage .....	897.35	740.15	867.21
Prairie hay .....	472.65	406.80	436.77
Av. feed cost per cwt. gain, \$	14.22	11.85	13.28
Implant cost per cwt. gain <sup>2</sup> ....	....	0.77	0.10
Av. total cost per cwt. gain ..	14.22	12.62	13.38

2. Stilbestrol cost—approximately 18c per steer; Synovex cost—approximately \$1.50 per steer (no charge made for actual implanting procedure).

**The Use of Stilbestrol<sup>1</sup> and Synovex<sup>2,3</sup> Implants for Steers During the Wintering and Fattening Period (Project 253-6).**

B. A. Koch, E. F. Smith, R. F. Cox, D. Richardson and G. L. Walker

The steers used in this study were implanted with either stilbestrol or Synovex at the start of the wintering period. The results of the first 112 days of the wintering period were reported in Circular 349.

This report summarizes the results of the entire wintering period and also the results of the fattening period which followed.

**Experimental Procedure**

Forty steer calves, weighing approximately 440 pounds each, were divided into three groups (one group of 10 and two groups of 15). Five animals were removed from each of the larger groups at the end of the winter period for use in a pasture study. (Animals were randomly selected for future summer pasture and feedlot tests at the beginning of the wintering period.) One group of 15 served as the winter control lot. Each animal in the other group of 15 received a 24-mg. implant of stilbestrol in the right ear. Each animal in the group of 10 received a Synovex implant in the right ear at the start of the winter period.

After 168 days on the wintering ration 10 animals in each lot were started on the fattening phase of the study. At that time 5 animals in the stilbestrol lot were reimplanted with 24 mg. of stilbestrol and 5 animals in the Synovex lot were reimplanted with a Synovex implant.

The steers were brought to a full feed of sorghum grain and alfalfa hay plus one pound of soybean meal per day during a three-week period. After the cattle were on full feed, sorghum grain and alfalfa hay were available to the animals at all times on a free-choice basis. The soybean meal was fed once per day and was scattered over the grain in the feed bunk. A mineral mixture made up of equal parts of salt and bonemeal was available to the animals at all times. Salt alone was also available to the animals at all times.

**Observations**

1. Undesirable side effects such as high tailheads, elongated teats and sexual stimulation were not readily apparent in any of the implanted animals.

2. Reimplantation did not appear to change the physical activity or the general appearance of those animals that were reimplanted.

3. Implanted steers made an average daily gain of approximately 0.4 pound more than the control animals during the fattening phase of the study. Synovex and stilbestrol gave similar increases in gain.

4. Steers implanted with either Synovex or stilbestrol made more efficient gains than did control animals during the fattening period. Synovex-implanted animals appeared to be more efficient than the stilbestrol-implanted animals.

5. Conclusions must be made with care when studying the reimplant data due to the small numbers involved. The magnitude of the standard errors reported also indicates that there was considerable variation within groups. However, it would appear that the original Synovex implant

did not show much effect upon the steers during the fattening period. The Synovex reimplant apparently gave those animals receiving it an added stimulus.

The original stilbestrol implant was apparently still showing some effect in the fattening period. The stilbestrol reimplant apparently had little or no effect upon those animals receiving it.

6. The implants apparently had little or no effect upon carcass grade. It should be noted that both the highest grading and lowest grading carcass were in the stilbestrol reimplanted group of animals.

Detailed results of the study are summarized in Table 35.

Table 35

**The Use of Stilbestrol<sup>1</sup> and Synovex<sup>2,3</sup> Implants for Steers During the Wintering and Fattening Periods (Project 253-6).**

Phase 1—Wintering—December 4, 1956, to May 21, 1957—168 days.

Treatment .....	Control	Synovex implant	Stilbestrol- implant
Lot number .....	1	2	3
Number steers per lot .....	10	10	10
Av. initial wt. per steer,			
lbs. ....	444.0	444.5	444.5
Av. final wt. per steer, lbs.	726.5	747.5	752.0
Av. total gain per steer,			
lbs. ....	282.5	303.0	307.5
Av. daily gain per steer,			
lbs. ....	1.68±0.06 <sup>15</sup>	1.80±0.04 <sup>15</sup>	1.83±0.09 <sup>15</sup>
Daily ration per steer,			
lbs.:			
Ground milo grain .....	4.8	4.8	4.8
Soybean oil meal .....	1.0	1.0	1.0
Sorghum silage <sup>4</sup> .....	24.9	25.4	27.2
Alfalfa hay <sup>4</sup> .....	0.7	0.8	0.8
Salt .....	.05	.05	.04
Feed per cwt. gain, lbs.:			
Ground milo grain .....	285.7	266.7	262.2
Soybean oil meal .....	59.5	55.6	54.6
Sorghum silage .....	1482.1	1411.0	1486.3
Alfalfa hay .....	41.7	44.4	43.7
Salt .....	3.0	2.8	2.2
Feed cost per cwt. gain, <sup>5</sup> \$	15.69	14.82	14.98
Implant cost per cwt.			
gain <sup>4</sup> .....		.61	.06
Total cost per cwt. gain, \$	15.69	15.43	15.04

Phase 2—Fattening—May 21, 1957, to August 13, 1957—84 days (by pens).

Av. initial wt. per steer,			
lbs. ....	726.5	747.5	752.0
Av. final wt. per steer,			
lbs. ....	891.5	954.5	952.0
Av. total gain per steer,			
lbs. ....	165.0	207.0	200.0

1. Supplied by Chas. Pfizer & Co. (24 mg. per steer—implanted in the ear; 24 mg. reimplant also).

2. Supplied by E. R. Squibb & Sons.

3. Each implant contained 1,000 mg. progesterone and 20 mg. estradiol benzoate. Each reimplant contained 200 mg. of progesterone plus 20 mg. of estradiol benzoate.

4. No hay fed before May 6, 1957; no silage fed after May 10, 1957.

5. Feed prices: sorghum grain, \$2.50 per cwt.; soybean oil meal, \$70.00 per ton; sorghum silage, \$8.00 per ton; alfalfa hay, \$25.00 per ton; salt, \$0.75 per cwt.; bonemeal-salt mixture, \$4.00 per cwt.

6. Stilbestrol cost, approximately 18c per steer; Synovex cost, approximately \$1.85 per steer. (No charge made for implanting procedure.)

15. Standard error of mean.