Table 31 (Continued)

Low good	....	1	1	1
Av. grade[6]	12.90	12.63	13.00	12.36
Av. marbling score[7]	7.10	7.18	6.90	7.27
Av. fat thickness score[8]	3.5	3.81	4.09	4.09
Av. rib eye size, score[9]	4.6	4.54	4.36	4.54
Av. firmness score[10]	3.7	3.45	3.72	3.45

6. Average grade was based on low prime, 16; high choice, 15; average choice, 14; low choice, 13; high good, 12; average good, 11.

7. Marbling score was based on: moderate, 5; modest, 6; small amount, 7; slight amount, 8.

8. Fat thickness score at 12th rib based on: moderate, 3; modest, 4; slightly thin, 5.

9. Rib eye score size was based on: moderately large, 3; modestly large, 4; slightly small, 5.

10. Firmness of rib eye was based on: firm, 2; moderately firm, 3; modestly firm, 4; slightly firm, 5.

Relationship of Summer Gains of Yearling Steers on Bluestem Pastures with Feeder Grade, Shade of Color, Weight at the Start of the Grazing Season and Previous Winter Gain, 1956-57 (Project 253-2-5).

L. A. Holland, J. D. Wheat, E. F. Smith, W. H. Smith, D. L. Good and R. F. Cox

Feeder grade, shade of color, and weight are some factors considered by cattlemen who purchase or produce yearling steers to pasture. The objective of this study is to determine the relationship of summer gains of yearling steers on bluestem pastures with feeder grade, shade of color, weight at the start of the grazing season and previous winter gain.

Experimental Procedure

Data were gathered on Hereford steers which were used in pasture utilization studies. In the fall of 1955, 136 steer calves were purchased and wintered 170 days in dry-lot on sorghum silage, alfalfa hay and two pounds of sorghum grain per head daily. The summer grazing period was from April 25 to October 1, 1956. The 155 steers used in the 1957 grazing season were purchased in the fall of 1956 and wintered in dry-lot on sorghum silage, a limited amount of alfalfa hay and one pound of protein concentrate per head daily. The 1957 summer grazing period was from April 27 to October 3.

In April of each year the steers were individually scored for feeder grade and shade of red by five animal husbandmen working independently. Feeder grades were the USDA grades fancy, choice, good, medium, common. Each grade was further subdivided into high, middle, and low. A numerical grade of 18 was assigned to high fancy, 17 to middle fancy, 16 to low fancy, etc. The average of the five feeder grades for each steer (as scored by the animal husbandmen) was computed for statistical analysis. The average of the five color scores for each steer was computed for statistical analysis. Shade of red scores were dark, medium, and light; each shade of red score was further subdivided into three subdivisions. Very dark was assigned a numerical value of 9, medium dark was assigned a grade of 8, etc.

Results

Since the steers were allotted to several pastures and some received hormone implants, correlations were computed within treatment within pasture. The correlations are listed in Table 32.

The correlation between feeder grade and summer gain was practically zero in both years. This indicates that feeder grade is not a good indicator of summer gain. Therefore, the advantage in purchasing high-grading yearlings to summer graze on bluestem pasture would not be in increased gains but would be in having higher grading steers at the end of the grazing season than if lower grading steers were purchased.

The correlation between color and summer gain was practically zero

Table 32

Correlations of Summer Gains with Feeder Grade, Color Score, Winter Gain and Weight at the Start of the Grazing Season by Years.

	1956	1957
Feeder grade	−.03	.07
Color score	−.05	.06
Winter gain	−.20	.....
Weight	−.32	.04

in both years. On the basis of these results one cannot claim an advantage in summer gains for a particular shade of red. The advantage of purchasing cattle of a particular shade of red would lie in the possible increase in sale price of these steers when sold to feed-lot operators who prefer cattle of that shade of red.

The correlation between previous winter gain and summer gains (−.20 in 1956) indicates that the steers making low winter gains tended to compensate with higher summer gains. Previous winter gain of each steer was not obtained for the steers grazed during 1957.

The correlation between beginning weight and summer gain (−.32 in 1956) shows that light-weight steers at the start of the summer grazing period tended to make larger gains than the heavier steers. In 1957, the correlation was .04, which is so nearly zero that there appeared to be no real difference in the gains made by cattle of different weights.

Feedlot Performance of Steers Implanted with Stilbestrol[1] Prior to the Grazing Season (Project 253-4).

B. A. Koch, E. F. Smith and G. L. Walker

Experimental evidence indicates that beef steers implanted with low levels of stilbestrol before going to grass will make increased gains during the grazing season. The test reported herein was designed to measure the performance of such implanted steers on a fattening ration in dry-lot after the grazing season.

Experimental Procedure

Animals used in this study were selected from a group of 150 Hereford steers used in grazing studies during the summer of 1957. One group of 10 steers had been implanted with 24 mgs. of stilbestrol in April 1957. The other group of 10 steers was among those serving as controls in the summer grazing studies. Both groups of 10 animals averaged nearly 775 pounds in weight when put on feed. The steers were brought to a full feed of grain during a four-week period of hand feeding. Thereafter, they had sorghum grain before them at all times. The alfalfa hay fed was limited to the amount consumed without waste. Each morning 10 pounds of soybean oil meal containing 10 mgs. of stilbestrol per pound was scattered over the grain bunk in each lot.

Warm water was available to the animals at all times from automatic waterers. Salt was available to the animals at all times. A mixture of bonemeal and salt was also available.

Observations

1. Animals in both groups made excellent gains throughout the 100-day period. The previously implanted animals made somewhat greater gains than the control animals.

2. No feeding problems were encountered with either group. There were no cases of bloat, serious scouring or any other evidence of digestive disturbances.

1. Stilbosol premix containing diethylstilbestrol supplied by Eli Lilly and Co.

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[1]	3.30±0.17[1]
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.[2]	26.25	26.25
Av. carcass grade[3]	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[1] and Synovex[2 3] 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. progoesterone 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[1]	1.77±0.11[1]	1.58±0.05[1]
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.