

with lot 12A where only 1 pound of soybean pellets was fed. However, the cost of producing the gain was about the same in both lots.

The steers in lot 12C fed 1 pound of soybean pellets and 1 pound of corn per head daily gained about the same amount as those fed only 1 pound of soybean pellets. Since no increase in gain was obtained with the corn, cost of producing a 100-pound gain with corn was increased slightly.

Table 23

Level of Protein Supplementation for Steer Calves Both Winter and Summer Grazed on Bluestem Pasture.

Phase 1—Wintering, January 4, 1956, to April 7, 1956—93 days.

Lot number	12A	12B	12C
Number of steers	10	10	10
Initial wt. per steer, lbs.	581	590	585
Final wt. per steer, lbs.	604	647	620
Gain per steer, lbs.	23	57	35
Daily gain per steer, lb.	.25	.61	.37
Daily ration per steer, lbs.:			
Soybean pellets	1	2	1
Ground corn			1
Prairie and alfalfa hay <sup>1</sup>	1	1	1
Dry bluestem pasture		Free choice all lots	
Salt		Free choice all lots	
Feed cost per steer <sup>2</sup>	\$6.26	\$9.52	\$8.96

Phase 2—Grazing, April 7, 1956, to August 7, 1956—123 days.

Initial wt. per steer, lbs.	604	647	620
Final wt. per steer, lbs.	803	841	807
Gain per steer, lbs.	199	194	187
Daily gain per steer, lbs.	1.62	1.58	1.52
Feed cost per steer <sup>2</sup>	\$17.00	\$17.00	\$17.00

Summary of Phases 1 and 2—January 4, 1956, to August 7, 1956—216 days.

Initial wt. per steer, lbs.	581	590	585
Final wt. per steer, lbs.	803	841	807
Gain per steer, lbs.	222	251	222
Daily gain per steer, lbs.	1.03	1.16	1.03
Feed cost per 100 lbs. gain <sup>2</sup>	\$10.47	\$10.56	\$11.69
Feed cost per steer <sup>2</sup>	\$23.26	\$26.52	\$25.96
Av. feeder grade August 4 <sup>3</sup>	High good	High good	High good
Av. condition score August 4 <sup>4</sup>	3.5	3.4	3.1

1. Fed only when snow covered the grass.

2. Feed prices may be found inside back cover; a charge of \$1 per head was made for salt.

3. Animals were scored individually by a committee of three animal husbandmen.

4. Condition scores ranged from 1 to 6, the higher number indicating more condition.

Supplements for Yearling Steers on Bluestem Pastures During the Latter Part of the Grazing Season, 1956, and a Three-Year Summary, 1953-55-56 (Project 258-1).

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

The nutritive value of bluestem pasture usually declines rapidly after midsummer. This is the third trial in this experiment in an attempt to find a method to economically increase the rate of gain after midsummer with small quantities of concentrate feed.

Experimental Procedure

Twenty-seven head of good-quality yearling Hereford steers were used in this test. They had been grazed together on bluestem pasture pre-

vious to the test. The steers were divided into three lots of nine steers each in a manner to equalize any differences due to previous winter treatments. They were grazed on bluestem pasture and received the following treatment from August 7, 1956, to October 2, 1956:

Lot 1—No supplement.

Lot 2—2 pounds of soybean pellets per head daily.

Lot 3—2 pounds of ground corn per head daily.

Six of the steers in each lot were implanted with 36 mgs. stilbestrol implants the previous fall. Results of this phase of the test are reported elsewhere in this circular.

Observations

1. The gain was increased by feeding either soybean pellets or corn. By feeding 114 pounds of soybean pellets per steer, the gain was increased 31 pounds. At present costs, this would probably be profitable, especially if it would improve the appearance of the steers.

Only 12 pounds of gain was produced from 114 pounds of corn. This small gain increase would not pay for the corn at present prices, unless it raised the feeder grade or enabled the producer to sell the steers at a higher price. The results of this test indicate protein and not energy feeds are needed for late summer feeding on grass where only small quantities of feed are to be fed.

2. It rained 5.07 inches in July and 3.61 inches in August. September was dry with a total of only .12 inch for the month.

Three-Year Summary, 1953-55-56

For the three-year summary (Table 25), 141 pounds of soybean pellets produced 28 pounds of additional gain. At present prices the additional gain would more than pay for the soybean pellets. This was true for each year except 1953. Most of the increase in gain each year came during September except in 1953.

Gain increases were also made in October. However, the feeding trial was discontinued in mid-October or earlier each year.

The feeding of ground shelled corn to lot 3 also increased the gain, 141 pounds of corn for 15 pounds of gain. Under present prices this small gain would not justify feeding corn.

Apparently in some years there is a need for additional protein for yearling steers during late summer, especially September and October. It is possible that smaller quantities than 2 pounds per head daily would suffice when protein is needed.

Table 24

Effect of Feeding Supplements During the Latter Part of the Grazing Season to Yearling Steers on Bluestem Pasture.

August 7, 1956, to October 2, 1956—57 days.

Lot number	1	2	3
Number of steers per lot	9	9	9
Management	No supplement	2 lbs. soybean pellets	2 lbs. corn
Initial wt. per steer, lbs.	817	818	818
Final wt. per steer, lbs.	902	933	914
Gain per steer, lbs.	85	115	96
Daily gain per steer, lbs.	1.52	2.05	1.71
Gain in lbs. contributed to feeding			
soybean pellets or ground corn	0	31	12
Total soybean pellets or corn fed per steer, lbs.:			
Soybean pellets	0	114	
Ground corn	0		114
Gain per steer by periods:			
August 7 to September 1	56	54	56
September 1 to October 2	29	61	40
Total gain August 7 to October 2	85	115	96

Table 25

Summary—Supplements for Yearling Steers on Bluestem Pastures During the Latter Part of the Grazing Season, 1953, 1955, 1956.

August to October—70.3 days.

Lot number	1	2	3
Number of steers	33	33	33
Management	No supplement	2 lbs. soybean pellets	2 lbs. corn ground
Initial wt. per steer, lbs.	774	776	777
Final wt. per steer, lbs.	864	894	882
Gain per steer, lbs.	90	118	105
Daily gain per steer, lbs.	1.28	1.67	1.49
Gain in lbs. contributed to feeding soybean pellets or corn		28	15
Total soybean pellets or corn fed per steer, lbs.:			
Soybean pellets		141	
Ground shelled corn			141
Gain per steer by periods, lbs.:			
August	52	47	48
September	21	49	36
October*	21	33	32

\* October gain is average of 1953 and 1955. In 1956 the trial was over October 2.

The Value of Stilbestrol Implants for Beef Cattle (Project 253-1).

Garth L. Walker, Ed F. Smith, B. A. Koch, and R. F. Cox

This test was conducted to study the effect of stilbestrol implants on steer calves fed various levels of supplements and wintered on dry bluestem pasture.

Experimental Procedure

Thirty choice-quality Hereford steer calves from the Williams Ranches near Lovington, N.M., were used in this test. These animals grazed together on dry bluestem pasture. They were separated for a brief period each morning into three groups and fed their different supplements. The supplements fed per head daily were: Lot 1, 1 pound of soybean oil meal pellets; lot 2, 2 pounds of soybean oil meal pellets; and lot 3, 1 pound of soybean oil meal pellets plus 1 pound of ground corn. Six animals in each of the three lots were implanted with 48 mgs. of stilbestrol.

Wintering phase. Gains between implants and controls were comparable in lot 1; however, in lots 2 and 3 those implanted gained 0.36 pound and 0.35 pound more per day than did the controls. There were some treated animals that exhibited abnormal secondary sex characteristics and uneven toplines.

Grazing phase. All animals were grazed in the same pasture during the summer. Gains between controls and implants were quite similar in all lots. Undesirable appearance due to implanting was still apparent in a few animals.

Summary

Numbers used in this test were limited but results indicate that the quantity of protein, or protein and energy, supplied may affect rate of gain due to stilbestrol.

Control and implanted calves that received 1 pound of soybean oil meal pellets during the winter and were summer grazed made similar weight gains for the two periods.

The implanted steers in lot 2, which had been wintered on 2 pounds of soybean oil meal pellets, gained 47 pounds more for the 216-day period.

Implanted calves wintered on 1 pound of soybean oil meal pellets plus 1 pound of ground corn gained 50 pounds more than did the controls.

Table 26  
Effect of Stilbestrol on Steer Calves Wintering on Dry Bluestem Pasture Fed Various Levels of Supplement and Grazed on Bluestem Pasture the Following Summer.

Treatment	Wintering phase—January 4 to May 3, 1956—120 days.			Summer grazing phase—May 4 to August 7, 1956—96 days.			Complete trial—January 4 to August 7, 1956—216 days.		
	Lot number	Number of steers	Wt. gain per steer, lbs.	Lot number	Number of steers	Wt. gain per steer, lbs.	Lot number	Number of steers	Wt. gain per steer, lbs.
Number of steers per treatment	1	10	10	2	10	10	3	10	10
Initial wt. per steer, lbs.	598	570	605	673	652	681	701	639	678
Final wt. per steer, lbs.	673	652	681	75	82	76	850	779	826
Total gain per steer, lbs.	75	82	76	75	82	76	149	140	148
Daily gain per steer, lb.	.62	.68	.63	1.04	1.04	1.02	1.55	1.45	1.54
Number of steers per treatment	4	6	4	4	6	4	6	6	6
Initial wt. per steer, lbs.	598	570	605	673	652	681	701	639	678
Final wt. per steer, lbs.	814	796	826	814	796	826	850	779	826
Total gain per steer, lbs.	146	144	145	141	144	145	149	140	148
Daily gain per steer, lbs.	1.46	1.50	1.51	1.46	1.50	1.51	1.55	1.45	1.54
Number of steers per treatment	4	6	4	4	6	4	6	6	6
Initial wt. per steer, lbs.	598	570	605	673	652	681	701	639	678
Final wt. per steer, lbs.	814	796	826	814	796	826	850	779	826
Total gain per steer, lbs.	216	226	221	216	226	221	268	193	243
Daily gain per steer, lbs.	1.0	1.04	1.02	1.0	1.04	1.02	1.24	.89	1.12

1. Removed from test because of sore foot.