

**The Value of Phenothiazine and Stilbestrol Implants for Fattening Yearling Heifers; Heifers Implanted As Calves Nine Months Before Fattening (Project 253-2).**

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

Many cattle producers practice wintering, grazing, and fattening heifers. The heifers used in this test had undergone a wintering and grazing phase. Part of them were implanted with stilbestrol as calves. Results of this treatment up to the fattening phase are reported elsewhere in this circular. Those that were not implanted were divided into two equal lots on the basis of weight. One served as a control, the other was fed phenothiazine, a worming agent, to study its effect on cattle performance.

**Experimental Procedure**

Good-quality yearling Hereford heifers purchased as calves in the fall of 1955 from the Williams Ranches at Lovington, N.M., were used in a wintering and grazing test and re-allotted as equally as possible for use in this test. Each heifer in the stilbestrol-implanted lot was implanted with 36 mgs. of stilbestrol December 20, 1955, when weighing about 475 pounds. The heifers treated with phenothiazine were each given a 60-gm. bolus of phenothiazine at the start of the test and were fed 2 gms. per head daily of phenothiazine mixed with their cottonseed meal throughout the test. Fecal samples taken from the heifers at the start of the test did not show evidence of any internal parasites.

Alfalfa hay was fed free choice to all lots. After the heifers were on full feed they were self-fed ground milo grain. The cottonseed meal was fed once daily on their grain.

**Observations**

1. The gain of heifers in lot 7 implanted with stilbestrol when they were calves was depressed during this fattening test. They did not eat quite so much grain as the other lots but ate slightly more hay. The control lot, number 8, was somewhat more efficient in feed use and sold for \$2 more per hundredweight. The implanted heifers had some udder development and somewhat of a cowy appearance. They graded one third grade lower in the carcass than the controls in lot 8.

2. The phenothiazine fed to lot 9 apparently depressed the gain of that lot but did not affect feed consumption, so feed efficiency was lowered accordingly. According to fecal samples, there were no internal parasites present in these heifers; therefore, the value of phenothiazine for worm control could not be studied.

**Table 32**

**The Value of Phenothiazine and Stilbestrol Implants for Fattening Yearling Heifers; Heifers Implanted As Calves Nine Months Before Fattening.**

August 2 to November 10, 1956—100 days.

Lot number	7	8	9
Management	Stilbestrol implanted	Control	Fed Phenothiazine
Number of heifers per lot	9	8	8
Initial wt. per heifer, lbs.	763	734	733
Final wt. per heifer, lbs.	963	985	953
Gain per heifer, lbs.	200	251	220
Daily gain per heifer, lbs.	2.00	2.51	2.20
Daily ration per heifer, lbs.:			
Ground milo grain, self-fed	15.58	16.88	16.30
Cottonseed meal	.99	.96	.97
Alfalfa hay	7.00	5.52	5.64
Salt	.06	.03	.04
Phenothiazine, 2 gms. per head daily	No	No	Yes
Stilbestrol implants, 36 mgs. each on December 20, 1955	Yes	No	No

**Table 32 (Continued).**

Lbs. feed per cwt. gain:			
Ground milo grain	779	673	741
Cottonseed meal	49.5	38.2	44.1
Alfalfa hay	350	220	256
Salt	3.0	1.19	1.81
Feed cost per 100 lbs. gain <sup>a</sup>	\$23.56	\$19.37	\$21.52
Selling price per cwt. at market	\$18.00	\$20.00	\$19.00
% shrink to market	3.2	5.1	4.6
Dressing %	60.3	62.6	63.0
Av. slaughter (on foot) grade <sup>1</sup>	11.4	12.1	11.6
Carcass grades: <sup>*</sup>			
Average choice		2	1
Low choice	1	1	2
High good	3	2	3
Average good	3	1	
Low good		2	1
High standard	2		
Av. carcass grades, USDA <sup>1</sup>	10.1	11.0	11.3
Av. size ribeye <sup>2</sup>	4.67	4.13	4.29
Av. thickness fat at 12th rib <sup>3</sup>	3.67	3.75	4.14
Av. degree of marbling <sup>4</sup>	7.78	7.00	7.14
Av. firmness <sup>5</sup>	3.89	3.88	3.71

1. Based on low choice = 12; high good = 11; average good = 10; low good = 9.

2. Based on moderately large = 3; modestly large = 4; slightly small = 5.

3. Based on moderately thick = 3; modestly thick = 4; slightly thin = 5.

4. Based on moderate = 5; modest = 6; small amount = 7; slight amount = 8; traces = 9.

5. Based on moderately firm = 3; modestly firm = 4; slightly firm = 5.

6. Feed prices may be found inside back cover.

\* One heifer in lot 9 was condemned at slaughter due to sarcosporidiosis.

**The Value of Dry Bluestem Pasture and a Comparison of Supplements for Heifer Calves in a Wintering, Grazing, and Fattening Program, 1955-56 (Project 253-2).**

E. F. Smith, B. A. Koch, and D. L. Good

Circular 320 from this station contains a three-year summary comparing heifers wintered in dry lot with heifers wintered on dry grass, and the effect of this winter treatment on their total performance in a wintering, grazing, and fattening program. The heifers wintered on dry grass gained 32 pounds less for the year, had a lower dressing percentage, graded lower, and sold for about \$1 a hundred less than heifers wintered in dry lot. However, the heifers wintered on dry grass returned as much money above feed costs as the heifers wintered in dry lot, due primarily to lower winter feed costs and high summer grass gains.

In the test reported here the plane of nutrition has been raised slightly for the heifers wintered on dry grass, to acquire some of the desirable characteristics associated with dry-lot wintering, but still maintaining low winter feed costs. In addition different levels of protein supplementation are compared.

**Experimental Procedure**

Thirty head of good-quality Hereford heifer calves purchased from the Williams Ranches at Lovington, N.M., were used in the test. They were divided on the basis of weight and quality into three lots of 10 calves each and assigned to the following treatments:

Lot 4—Wintered in dry lot on sorghum silage, 3 pounds of alfalfa hay, and 1 1/2 pounds of corn per head daily, grazed on bluestem pasture from May 2 until August 2.

Lot 7—Wintered on dry bluestem pasture, 3 pounds of alfalfa hay, and 1½ pounds of corn per head daily, grazed on bluestem pasture until August 2.

Lot 8—Wintered on dry bluestem pasture and 6 pounds of alfalfa hay per head daily, grazed on bluestem pasture until August 2.

All lots had free access to salt and mineral (equal parts of bone-meal and salt).

Four heifers in each lot or a total of 12 were implanted with 48 mgs. of stilbestrol; results of this test are reported elsewhere. In the test this year there was no fattening phase due to the loss of two of the implanted heifers because of vaginal prolapse.

#### Observations

1. In a comparison of dry-lot wintering (lot 4) with wintering on dry grass (lots 7 and 8), the total winter and summer gain is of particular interest. Lot 4 gained 25 pounds more than lot 7 and 44 pounds more than lot 8. Lots 7 and 8 wintered on dry grass on a low plane of nutrition failed to gain enough during the summer to make their total gain equal to the well-wintered lot 4. Cost of gain for lots 7 and 8 wintered on dry grass depends to a large extent on the charge for winter grass.

2. Apparently 3 pounds of alfalfa hay furnishes ample protein for calves wintered on dry bluestem pasture, since lot 7, fed alfalfa and grain, gained slightly more during the winter and summer than lot 8, which received only alfalfa hay. The 1½ pounds of grain fed to lot 7 furnished approximately the same amount of energy as the additional 3 pounds of alfalfa hay fed to lot 8.

Table 33

#### The Value of Dry Bluestem Pasture and a Comparison of Supplements for Heifer Calves, 1955-56.

Phase 1—Wintering, November 15, 1955, to May 3, 1956—170 days for lot 4; November 15, 1955, to April 7, 1956—144 days for lots 7 and 8.

Lot number	4	7 <sup>1</sup>	8
Number of heifers	10	9 <sup>2</sup>	10
Place wintered	dry lot	pasture	pasture
Initial wt. per heifer, lbs.	473	474	482
Final wt. per heifer, lbs.	685	501	501
Gain per heifer, lbs.	212	27	19
Daily gain per heifer, lbs.	1.24	.19	.13
Daily ration per heifer, lbs.:			
Alfalfa hay	3.0	3.0	6.0
Corn, ground	1.4	1.5	
Sorghum silage	28.1		
Dry bluestem pasture		Free choice	Free choice
Prairie and alfalfa hay		.29 <sup>1</sup>	.29 <sup>1</sup>
Salt	.09	.03	.03
Mineral (bonemeal and salt)	.06	.04	.04
Feed cost per heifer, \$ <sup>3</sup>	27.97	14.23	12.37

Phase 2—Grazing, May 3, 1956, to August 2, 1956—91 days for lot 4; April 7, 1956, to August 2, 1956—117 days for lots 7 and 8.

Initial wt. per heifer, lbs.	685	501	501
Final wt. per heifer, lbs.	762	738	727
Gain per heifer, lbs.	77	237	226
Daily gain per heifer, lbs.	.85	2.03	1.93
Feed cost per heifer, \$	16.00	16.00	16.00

1. Prairie and alfalfa hay in limited quantities were fed to lots 7 and 8 when snow covered the grass.

2. One stilbestrol-implanted heifer was removed from lot 7 with a prolapsed vagina.

3. Feed prices may be found inside the back cover.

Table 33 (Continued).

Summary—November 15, 1955, to August 2, 1956—261 days.			
Initial wt. per heifer, lbs.	473	474	482
Final wt. per heifer, lbs.	762	738	727
Gain per heifer, lbs.	289	264	245
Daily gain per heifer, lbs.	1.11	1.01	.94
Feed cost per heifer <sup>2</sup>	43.97	30.23	28.37
Feed cost per 100 lbs. gain <sup>2</sup>	15.21	11.45	11.58

Relationships Between Summer Gains of Yearling Steers on Bluestem Pastures and Feeder Grade, Shade of Color, Weight at the Start of the Grazing Season, and Previous Winter Gain, 1956 (Project 253-3-5).

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The Department of Animal Husbandry purchases steer calves each fall to be wintered and grazed the following summer in studies of different methods of managing bluestem pastures. This affords opportunities to study the relationships between summer gains and feeder grade, shade of color, weight at the start of the grazing season, and previous winter gain. Several years will elapse before definite conclusions can be drawn concerning these relationships. Following, however, is a report of progress to date of the studies made of these factors:

#### Experimental Procedure

The 136 Hereford steers in this study were purchased as calves in the fall of 1955 and wintered 170 days in dry lot on sorghum silage, alfalfa hay, and 2 pounds of milo grain per head daily. The summer grazing period was from April 25 to October 1.

The steers were individually scored for feeder grade and shade of red by five animal husbandmen working independently in April, 1956. Feeder grades were the USDA grades fancy, choice, good, medium, and common. Each grade was further subdivided to high, middle, and low. For statistical analysis, a numerical grade of 18 was assigned to high fancy, 17 to middle fancy, 16 to low fancy, etc. Shade-of-red scores were dark, medium, and light; each shade-of-red score was further subdivided to high, middle, and low. High dark was assigned a numerical grade of 9, middle dark a grade of 8, etc. Thus the higher the numerical color score, the more intense was the shade of red.

#### Results

Since the steers were allotted to several pastures and some received hormone implants, correlations were computed on a within-treatment, within-pasture basis. The correlations were: Feeder grade and summer gain, -.03; color score and summer gain, -.05; winter gain and summer gain, -.20; and beginning weight and summer gain, -.32.

The correlation between feeder grade and summer gain, -.03, is, for all practical purposes; zero and indicates that feeder grade was not a good indicator of summer gaining ability.

Likewise, the correlation between color score and summer gain, -.05, is essentially zero and indicates that shade of red was not a good indicator of summer gains. On the basis of these results, an advantage could not be claimed for any particular shade of red.

The correlation between winter gain and summer gain, -.20, indicates that steers making high winter gains tended to make lower summer gains and steers making low winter gains tended to compensate with higher summer gains. Animal husbandmen have long known that steers wintered on a low plane of nutrition tend to make higher summer gains than steers wintered on a high nutritional plane. The results in this study point to compensatory gains in the summer even when steers were wintered uniformly on what was considered to be a medium plane of nutrition.

The correlation between beginning weight and summer gain, -.32, shows that light-weight steers at the start of the summer grazing period tended to make larger gains than the heavier steers.