

Methods of Wintering Steer Calves That Are To Be Grazed on Bluestem Pasture the Following Summer, 1954-55.

PROJECT 253-1

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This test is to compare methods of winter management and supplements for steer calves that are to be grazed the following summer. Results of the test are measured primarily by the combined winter and summer performances.

The following comparisons are being made:

1. Wintering in dry lot on prairie hay with wintering on dry bluestem pasture.
2. Different levels of protein feeding on dry bluestem pasture.
3. A combination of grain and a protein supplement with a protein supplement on dry bluestem pasture.

Experimental Procedure

Forty good to choice Hereford steer calves, from the Lonker Ranch at Medicine Lodge, Kan., were divided into four lots of 10 each. One lot was wintered in dry lot at the experimental barn, while the other three lots were wintered on dry bluestem pasture. The pastures had been stocked the previous summer but sufficient grass remained to winter the steers. The steers on pasture during the winter were moved from pasture to pasture the first day of each month to minimize pasture differences. All steers received mineral (steamed bonemeal and salt) and salt free choice.

The treatment each lot received was as follows:

Lot 1—(Dry lot) Prairie hay and 1 pound of soybean pellets per head daily.

Lot 2—Dry bluestem pasture, 1 pound of soybean pellets per head daily.

Lot 3—Dry bluestem pasture, 1 pound of soybean pellets and 1 pound of corn per head daily.

Lot 4—Dry bluestem pasture, 2 pounds of soybean pellets per head daily.

Prairie hay was fed when snow covered the grass.

Observations

1. On the basis of winter and summer gain combined the most economical method of wintering steer calves was on dry bluestem pasture, with 2 pounds of supplemental feed.

2. Apparently in this test 1 pound of 41 percent protein supplement did not furnish quite enough protein or protein and energy combined for calves wintered on dry grass.

3. One pound of corn and 1 pound of soybean pellets were equal to 2 pounds of soybean pellets. This was also true in a previous test reported in Circular 308.

Table 3

Methods of Wintering Steer Calves That Are To Be Grazed on Bluestem Pasture the Following Summer.

Phase 1, Wintering, November 10, 1954, to April 6, 1955—147 days.

Lot number	1	2	3	4
Number of steers	10	10	10	10
Place of wintering	Dry lot	Bluestem pasture	Bluestem pasture	Bluestem pasture
Initial wt. of steer	519	519	520	516
Final wt. of steer	653	534	561	561
Gain per steer	134	15	41	45
Daily gain per steer91	.10	.28	.31

Table 3 (Continued).

Daily ration per steer:				
Soybean pellets	1.00	1.00	1.00	2.00
Prairie hay	12.11	1.59 ¹	1.59 ¹	1.59 ¹
Corn			1.00	
Dry bluestem pasture				
Salt		Free choice	Free choice	Free choice
Minerals ²		Free choice	Free choice	Free choice
Feed cost per steer ³	\$24.11	\$11.17	\$14.99	\$17.49
Feed cost per cwt. gain ³	18.00	74.46	36.56	38.86

Phase 2, Grazing, April 6 to August 2, 1955—118 days.

Initial wt. of steer	653	534	561	561
Final wt. per steer	816	776	813	802
Gain per steer	163	242	252	241
Daily gain per steer	1.38	2.05	2.14	2.04
Cost per 100 lbs. pasture gain ³	\$9.81	\$6.61	\$6.34	\$6.63

Summary of Phases 1 and 2

November 10, 1954, to August 2, 1955—265 days.

Initial wt. per steer	519	519	520	516
Final wt. per steer	816	776	813	802
Gain per steer	297	257	293	286
Daily gain per steer	1.12	.97	1.11	1.08
Feed cost per 100 lbs. gain ³	\$13.50	\$10.57	\$10.57	\$11.70
Feed cost per steer ³	\$40.11	\$27.17	\$30.99	\$33.49

1. Prairie hay was fed lots 2, 3, and 4 only when snow covered the grass.
2. Mineral was 2 parts steamed bonemeal and 1 part salt.
3. Feed prices are found on inside back cover.

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

PROJECT 253-1

E. F. Smith, F. H. Baker, and G. L. Walker

The nutritive value of bluestem pasture usually declines rapidly after mid-summer. This test is an attempt to find ways to economically increase the rate of gain after mid-summer with small quantities of concentrate feed.

Experimental Procedure

Thirty-six head of good-quality yearling Hereford steers were used in this test. They had been grazing together on bluestem pasture previous to the test. The steers were divided into three lots of 12 steers each, in a manner to equalize any difference due to previous winter treatments. They were grazed on bluestem pasture and received the following treatment from August 2, 1953, to October 17, 1955.

Lot 1—No supplement.

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

Lot 3—Two pounds of corn per head daily.

The steers were rotated on the pastures every 15 days to help equalize any differences that might be due to pastures.

Observations

1. Both supplements increased the rate of gain. The soybean pellets increased the rate of gain enough to make their feeding profitable, which the corn failed to do.

2. The grass was brown for the most part and the late summer season was dry. July was dry with 2.45 inches of rainfall; effective rainfall was 1.3 inches on July 1 and .84 on July 19. No moisture of any consequence was received in August, or until September 26 and 27, when 1.35 inches fell.

Table 4
Effects of Feeding a Protein Supplement During the Latter Part of the Grazing Season to Yearling Steers on Bluestem Pasture.

Lot number	1	2	3
Number steers per lot	12	12	12
Management	supple-	2 pounds	2 pounds
Initial wt. per steer	802	806	803
Final wt. per steer	880	925	897
Daily gain per steer	1.03	1.57	1.24
Gain in lbs. contributed to feeding soybean pellets or corn	41	152	16
Total soybean pellets or corn fed per steer, lbs.:			
Soybeans	152		
Corn			152
Gain per steer by periods:			
August 2-September 2	51	28	49
September 2-October 1	2	51	7
October 1-October 17	25	40	38
Total gain August 2-October 17	78	119	94

August 2 to October 17, 1955—76 days.

Level of Winter Protein Supplementation for Steer Calves Both Wintered and Summer Grazed on Bluestem Pasture, 1955-56.
E. F. Smith, B. A. Koch, D. L. Good, and G. L. Walker

This is a progress report of the wintering phase of the third trial of this experiment. The results of the other two tests are reported in Circular 308 and elsewhere in this publication. The test is designed to study the level of protein supplementation most desirable for wintering steer calves to be sold off summer grass as stocker or feeder yearlings. Results of the experiment are measured by the combined winter and summer performance of the steers.

Experimental Procedure

Thirty good-quality Hereford steer calves purchased from the Williams Ranches near Lovington, N. M., were used in the test. They were the best steer calves of 256 purchased. They were divided on the basis of weight into three lots of 10 calves each and grazed together on a 190-acre bluestem pasture during the winter. Each morning they were gathered and divided into three feeding pens to receive their supplements. The treatment assigned to each lot was as follows:

- Lot 12A—One pound of soybean oil meal pellets per head daily.
- Lot 12B—Two pounds of soybean oil meal pellets per head daily.
- Lot 12C—One pound of soybean oil meal pellets and 1 pound of corn per head daily.

All had free choice of dry bluestem pasture, salt, and mineral (steamed bonemeal and salt).

Observations

Results in this test are measured on the basis of winter and summer performance combined. This is a progress report on only the wintering phase. It is interesting to note that at this stage 1 pound of a 41 percent protein concentrate is apparently not enough supplemental feed for calves wintered on dry bluestem pasture. This has been true on the basis of the combined winter and summer gain in the two previous trials.

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Table 5
Level of Protein Supplementation for Steer Calves Wintered on Dry Bluestem Pasture, 1955-56.

Lot number	12A	12B	12C
Number steers	10	10	9
Initial wt. per steer, lbs.	581	590	591
Final wt. per steer, lbs.	604	647	634
Daily gain per steer, lbs.	.23	.57	.43
Daily ration per steer, lbs.:			
Soybean oil meal pellets	1.0	2.0	1.0
Ground corn			1.0
Prairie and alfalfa hay	1.0		1.0
Dry bluestem pasture		1.0	
Salt			1.0
Mineral (bonemeal and salt)			1.0
Free choice, all lots			1.0
Free choice, all lots	6.26	9.52	8.96
Feed cost per steer, \$			

1. Fed only when snow covered the grass.
2. Feed prices may be found inside back cover. \$1 was charged per steer for mineral and salt.

The Value of Dry Bluestem Pasture and a Comparison of Supplements for Heifer Calves in a Wintering, Grazing, and Fattening Program, 1955-56.
E. F. Smith, B. A. Koch, D. L. Good, and V. D. Severns

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 results of this test showed 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 this test 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 being 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, to be grazed on bluestem pasture from May 1 until August 1, fattened to choice grade in dry lot starting August 1.
- Lot 7—Wintered on dry bluestem pasture, 3 pounds of alfalfa hay, and 1 1/2 pounds of corn per head daily, to be grazed on bluestem pasture until August 1, fattened to choice grade in dry lot starting August 1.
- Lot 8—Wintered on dry bluestem pasture and 6 pounds of alfalfa hay per head daily, to be grazed on bluestem pasture until August 1, fattened to choice grade in dry lot starting August 1.

(11)