

WINTERING HEIFER CALVES THAT ARE TO BE FATTENED FOR THE SUMMER OR EARLY FALL

MARKET Phase I—Wintering  
November 30, 1950 to April 16, 1951—137 days

	1	2	3	4	5	6	7
1. Lot number .....	91	91	92	92	10	91	10
2. Number of heifers per lot .....	2.00	2.00	2.00	2.00	4.05	1.00	1.00
3. Ration fed .....	Milo, expeller type SBR, prairie hay, silage	Milo, expeller type SBR, prairie hay, silage	Milo, hydraulic extracted CSP, prairie hay, silage	Milo, hydraulic extracted CSP, prairie hay, silage	Milo, expeller type SBR, prairie hay, silage	Milo, expeller type SBR, prairie hay, silage	Milo, expeller type SBR, prairie hay, silage
4. Average daily ration, lbs.:							
Ground milo grain .....	2.00	2.00	2.00	2.00	4.05	1.00	1.00
Soybean pellets (expeller type) .....	1.00	1.00	—	—	—	—	—
Cottonseed meal pellets (hydraulic extracted) .....	—	—	1.00	1.00	—	—	—
Prairie hay .....	2.05	2.02	1.62	1.40	1.13	3.42	2.97
Silage .....	19.95	19.91	19.58	19.43	19.55	19.07	19.63
Salt .....	.07	.09	.08	.10	.09	.08	.10
5. Average initial weight .....	449.00	448.00	447.00	434.00	434.00	428.00	434.00
6. Average final weight .....	614.00	609.00	586.00	572.00	621.00	556.00	553.00
7. Average gain .....	165.00	161.00	139.00	138.00	187.00	128.00	119.00
8. Average daily gain .....	1.20	1.18	1.01	1.01	1.36	.93	.87
9. Feed required per 100 lbs. gain, lbs.:							
Ground milo grain .....	166.06	170.19	197.12	198.55	297.06	—	—
Soybean pellets (expeller type) .....	83.03	85.09	—	—	73.26	107.03	115.13
Cottonseed meal pellets (hydraulic extracted) .....	—	—	98.56	99.28	—	—	—
Prairie hay .....	169.80	172.05	149.48	139.29	82.63	365.81	342.27
Silage .....	1656.06	1694.10	1929.45	1928.54	1432.62	2040.66	2269.66
Salt .....	5.76	8.07	7.43	10.10	6.35	8.62	11.30
10. Cost of feed per 100 lbs. gain .....	\$13.37	\$13.69	\$15.42	\$15.43	\$14.74	\$12.97	\$13.84
11. Feed cost per heifer .....	\$22.06	\$22.05	\$21.43	\$21.29	\$27.56	\$16.61	\$16.47
12. Initial cost heifers @ \$31.50 cwt. ....	\$141.44	\$141.12	\$140.81	\$136.71	\$136.71	\$134.82	\$136.71
13. Heifer cost plus feed cost .....	\$163.50	\$163.17	\$162.24	\$158.00	\$164.27	\$151.43	\$153.18
14. Necessary selling price per cwt. to pay for feed and initial cost .....	\$26.63	\$26.79	\$27.69	\$27.62	\$26.45	\$27.24	\$27.70
15. Appraised value per cwt., May 5, 1950							

1. One heifer removed because of no gain. 2. One heifer died—lead paint poisoning.

the daily gain nearly one-half pound. Compare Lot (5) with Lots (6) and (7).

3. In this test, the heifer calves, Lots (1) and (2), fed expeller type soybean oil meal pellets, gained considerably more than those fed hydraulic extracted cottonseed oil meal pellets.

4. The gains of all lots are lower than might be expected. The silage fed was very acid, particularly the last third of the silo. Some of the lots did not clean up their silage each day until noon and it was necessary to withhold the prairie hay that was fed until the silage was eaten each day.

Project 253-4: Wintering and Grazing Yearling Steers  
Methods of Wintering Yearling Steers on Bluestem Pasture, 1949-50  
E. F. Smith, R. F. Cox

INTRODUCTION

The primary purpose of this study is to test the value of dry bluestem pasture as a winter feed for yearling steers fed different kinds and amounts of protein supplements.

EXPERIMENTAL PROCEDURE

Forty head of good quality, 625-pound Hereford yearling steers were used in this test which was started December 11, 1949. All of the pastures in which the steers were wintered had been grazed the previous summer but a plentiful supply of dry grass remained. From 6 to 19 acres of pasture were allowed each steer.

The forty steers were divided into four lots and received the following supplements in addition to bluestem grass from December 11, 1949 to May 1, 1950.

Lot 1: Two pounds of soybean oil meal pellets per steer daily.  
Lot 2: Four pounds of soybean oil meal pellets per steer fed every other day (average of 2 pounds per steer daily).

Lot 3: Six and nine-tenths pounds of alfalfa hay per steer daily.

Lot 4: Soybean oil meal and salt self-feed (the salt was mixed with the soybean oil meal to limit its consumption and make it possible to self-feed the protein supplement). The proportions of soybean oil meal and salt were 100 pounds of soybean oil meal and about 35 pounds of salt.

After the wintering period, all the steers were grazed together on bluestem pasture until July 15, 1950.

OBSERVATIONS

1. The winter of 1949-50 was very mild, extremely dry, and ideal for wintering cattle.

2. This test indicates that daily feeding results in greater gains than feeding every other day when steers are on dry grass.

3. The steers fed alfalfa hay as a protein supplement and those self-fed a mixture of soybean oil meal and salt gained about the same but they gained only about half as much as steers that were fed soybean oil meal pellets every day.

4. No ill effects were noted from feeding the meal-salt mixture to the steers in Lot 4 although they did present a somewhat rougher appearance than the other lots at the close of the wintering period.

5. All lots lost weight during the month of March. Lot 1 lost six pounds per steer, Lot 2 lost 7 pounds per steer, Lot 3 lost 13 pounds per steer, and Lot 4 lost 43 pounds per steer. All lots made large gains during April.

6. There was a tendency for the lots that made the lowest winter gain to make the largest summer gain.

7. At the close of the grazing period on July 15, 1950, the alfalfa hay-fed lot and the soybean oil meal-salt-fed lot gained 47 and 44 pounds, respectively, less per steer than Lot 1 which was hand-fed daily.

**TABLE I—Wintering Yearling Steers on Bluestem Pasture.**  
Phase I—Wintering—Dec. 11, 1949-May 1, 1950—141 days

Lot number .....	1	2	3	4
Number steers per lot .....	10	10	10	10
Management .....	Fed SBP daily	Fed SBP every other day	Fed Alfalfa hay daily	Self-fed SBM, salt mixed together
Average daily ration, pounds:				
Soybean oil meal pellets .....	2.00	2.01	—	—
Soybean oil meal .....	—	—	—	1.84
Alfalfa hay .....	—	—	6.88	—
Prairie hay <sup>1</sup> .....	.34 <sup>1</sup>	.34 <sup>1</sup>	.21 <sup>1</sup>	.81 <sup>1</sup>
Salt .....	.10	.10	.07	.58
Bluestem pasture .....	ad lib	ad lib	ad lib	ad lib
Average initial weight .....	624.00	622.00	623.00	623.00
Average final weight .....	723.00	701.00	668.00	669.00
Average gain .....	99.00	79.00	45.00	46.00
Average daily gain .....	.70	.56	.32	.33
Total feed cost per steer .....	\$16.98	\$17.04	\$15.95	\$16.94
Appraised value per cwt. May 5, 1950 .....	\$28.75	\$28.75	\$28.75	\$28.75

Phase II—Grazing—May 1, 1950-July 15, 1950—75 days

Number steers per lot .....	10	9 <sup>2</sup>	10	10
Average initial weight .....	723.00	701.00	668.00	669.00
Average final weight .....	879.00	861.00	831.00	834.00
Average gain .....	156.00	160.00	163.00	165.00
Average daily gain .....	2.08	2.13	2.17	2.20

Summary of Phases I and II—Dec. 11, 1949-July 15, 1950—216 days

Average initial weight .....	624.00	622.00	623.00	623.00
Average final weight .....	879.00	861.00	831.00	834.00
Average gain .....	255.00	239.00	208.00	211.00
Average daily gain .....	1.18	1.11	.96	.98
Total feed cost .....	\$31.98	\$32.04	\$30.95	\$31.94
Feed cost per 100 lbs. gain .....	\$12.54	\$13.41	\$14.88	\$15.14
Initial cost per steer @ \$24.75 per cwt. ....	\$154.44	\$153.95	\$154.19	\$154.19
Initial cost per steer plus feed costs .....	\$186.42	\$185.99	\$185.14	\$186.13
Appraisal value per steer @ \$28.00 cwt. July 15, 1950 .....	\$246.12	\$241.08	\$232.68	\$233.52
Return per steer over initial cost plus feed cost .....	\$59.70	\$55.09	\$47.54	\$47.39

1. Prairie hay was fed only when snow covered the grass except lot 4 was fed some hay at the start of the test to get them started on the salt-meal mixture.

2. One steer in lot 2 developed an infected foot shortly after the winter period and was removed from the test.

Feed prices: Soybean pellets, soybean meal, \$75.00 a ton; Alfalfa hay \$17.00 a ton; Prairie hay, \$13.00 a ton; Bluestem pasture, \$6.00 for the winter; Salt, \$12.00 a ton.

## Project 253-4: Wintering and Grazing Yearling Steers

Effect of Feeding a Protein Supplement During the Latter Part of the Grazing Season to Two-Year-Old Steers on Bluestem Pasture—1950.

E. F. Smith and R. F. Cox

### INTRODUCTION

The nutritive value of bluestem pasture usually begins to decline rapidly after mid-summer. This test is concerned with what effect the feeding of a protein supplement after mid-summer will have on cattle gains and condition. It is hoped that by starting the feeding at different times the most opportune time to start feeding may be determined.

### EXPERIMENTAL PROCEDURE

Forty head of good quality 2-year-old Hereford steers were used in this test. They were wintered on dry bluestem pasture and then grazed together until July 15, when this test started.

The steers were divided into four uniform lots and grazed on bluestem pasture with the following treatment from July 15, 1950 to September 29, 1950.

- Lot 1:—July 15 to September 29—received 3 pounds of soybean oil meal pellets per head daily.
- Lot 2:—August 10 to September 29—received 3 pounds of soybean oil meal pellets per head daily.
- Lot 3:—September 1 to September 29—received 3 pounds of soybean oil meal pellets per head daily.
- Lot 4:—Received no supplemental feed.

### OBSERVATIONS

1. In this test the feeding of a protein supplement on bluestem pasture from July 15 to September 29 was not profitable.

2. The greatest benefit from feeding protein was in the month of September where lots 1 and 2 each gained 23 pounds more per head than lot 4 which received no protein. See line 12 of table 1.

3. The average protein content of bluestem pasture grasses<sup>1</sup> in July was 9%, in August 8.7%, and in September 7.1%. Large rains were received in July and August; late season grazing was good.

4. When marketed lot 1 was the fleshiest of the lots; the other lots appeared to be about the same in amount of flesh. No difference was noted in the hair coats among the lots. They all sold for the same price per hundred pounds.

1. The samples were of immature grasses or regrowth after grazing. The September average includes an October 1 sample.

**TABLE I—Effect of Feeding a Protein Supplement During the Latter Part of the Grazing Season to Two-Year-Old Steers on Bluestem Pasture**

July 15, 1950 to September 29, 1950—(76 days)

1. Lot number .....	1	2	3	4
2. Number of steers per lot ..	9	10	10	10