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[1]	.34[1]	.34[1]	.21[1]	.81[1]
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[2]	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[1] 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

3. Management	Fed 3 lbs. Soybean Pellets from July 15-Sept. 29, 1950	Fed 3 lbs. Soybean Pellets from Aug. 10-Sept. 29, 1950	Fed 3 lbs. Soybean Pellets from Sept. 1-Sept. 29, 1950	No Soybean Pellets fed
4. Av. initial weight	850	851	851	852
5. Av. final weight	979	975	947	947
6. Average gain	129	124	96	97
7. Av. daily gain	1.70	1.63	1.26	1.28
8. Gain contributed to feeding of soybean pellets, lbs.	32	27	−1	0
9. Total soybean pellets fed per steer, lbs.	228	150	84	0
10. Gain per cwt. of soybean pellets fed, lbs.	14.04	18.00	0	0
11. Selling price per cwt. on Oct. 3	$28.00	$28.00	$28.00	$28.00
12. Gain per steer by periods, pounds:				
July 15-August 10	47	49	46	37
August 10-Sept. 1	33	26	30	34
September 1-Sept. 29	49	49	20	26
Total gain	129	124	96	97

Project 253-4: Wintering and Grazing Yearling Steers

Wintering Yearling Steers on Dry Bluestem Pasture, 1950-51

E. F. Smith, R. F. Cox

INTRODUCTION

The primary purpose of this test is to determine if yearling steers can be satisfactorily wintered on dry bluestem pasture. Different protein supplements as well as methods of feeding them on dry bluestem pasture are being tested.

EXPERIMENTAL PROCEDURE

Forty head of good quality Hereford yearling steers, four lots, 10 head to a lot, were used in this test.

All lots were wintered on dry bluestem pasture. Each lot had sufficient dry grass to winter on; the acreage varied from 6 acres per head for one lot to 19 acres per head for another lot. All pastures had been normally stocked the previous grazing season. Each lot received a supplement in addition to dry bluestem pasture as follows:

Lot 1—Approximately 7 pounds of alfalfa hay per head daily.
Lot 2—4 pounds of soybean pellets per head every other day (average 2 pounds a day)
Lot 3—2 pounds of soybean pellets per head daily.
Lot 4—Soybean oil meal and salt self-fed. (The salt was mixed with the soybean oil meal to limit its consumption and make it possible to self-feed the soybean oil meal.)

The proportions of soybean oil meal and salt varied from 100 pounds of soybean oil meal and 35 pounds of salt up to 45 pounds of salt per 100 pounds of meal. This amount of salt held meal consumption to approximately 2 pounds per head daily.

OBSERVATIONS

1. Yearling steers were satisfactorily wintered on dry bluestem grass and a protein supplement. The average gain for the lots varied from 46 to 75 pounds per head for the winter.

2. In this test steers fed every other day made the largest gain, followed by steers fed daily. The lowest gaining lot was fed alfalfa hay, which has been true in two previous trials. Lot 4, which was fed the meal-salt mixture, did not gain quite as much as the steers fed every day in lot 1, but did compare very favorably with them.

3. Although not shown, it is of interest that all lots lost weight during February except lot 2 which was fed every other day.

4. It was very difficult to regulate the salt-meal intake of lot 4 so as to maintain meal consumption at approximately 2 pounds per head daily.

5. The winter of 1950-51 was very mild and favorable for wintering cattle on dry grass.

Wintering Yearling Steers on Bluestem Pasture

December 13, 1950 to April 18, 1951—126 Days

1. Lot number	1	2	3	4
2. Number of steers per lot..	10	10	10	10
3. Method of feeding	Fed soybean pellets daily	Fed soybean pellets every other day	Fed alfalfa hay daily	Self-fed soybean oil meal and salt mixed together
4. Average daily winter ration, lbs.:				
Soybean pellets	2.02	2.03	—	—
Soybean oil meal	—	—	—	1.97
Salt	.19	.13	.05	.69
Alfalfa hay	—	—	7.32	—
Mineral mixture[1]	.02	.03	.01	.05
Prairie hay[2]	.76	.75	.49	.58
Bluestem pasture	ad lib	ad lib	ad lib	ad lib
5. Average initial weight	683	684	684	685
6. Average final weight	745	759	730	739
7. Average gain	62	75	46	54
8. Average daily gain	.49	.60	.37	.43
9. Total feed cost per steer	$16.41	$16.51	$15.72	$16.63
10. Initial cost per steer at $32.25 per cwt.	$220.27	$220.59	$220.59	$220.91
11. Initial cost per steer plus feed cost	$236.68	$237.10	$236.31	$237.54
12. Necessary selling price per cwt. to cover initial cost plus wintering cost	$31.77	$31.24	$32.37	$32.14
13. Appraised value per cwt. on May 5, 1951				

1. Mineral mixture consisted of 2 parts by weight of steamed bone meal to 1 part salt.

2. Prairie hay was fed only when snow covered the grass. Feed prices: Soybean pellets, soybean meal, $75.00 a ton; alfalfa hay, $20.00 a ton; prairie hay, $13.00 a ton; bluestem pasture, $6.00 for the winter; salt, $12.00 a ton; steamed bone meal, $5.50 a cwt.