3. Place wintered ..	Bluestem Pasture	Dry lot	Dry lot	Dry lot	Dry lot
4. Number of days in phase	157	164	164	164	164
5. Average daily ration:					
Corn	—	—	—	2.00	4.00
Soybean pellets	2.00	1.00	1.00	1.00	1.00
Silage	—	28.99	—	—	—
Prairie hay[2]	.04[2]	—	12.25	10.95	9.00
Salt	.06	.07	.06	.06	.06
Bluestem pasture	Ad lib				
6. Average initial weight	431	430	434	432	432
7. Average final weight	578	588	594	618	687
8. Average gain	147	158	160	186	255
9. Average daily gain	.94	.96	.98	1.13	1.55
10. Feed required for 100 lbs. gain					
Corn	—	—	—	176.34	257.25
Soybean pellets	213.61	103.80	102.55	88.17	64.31
Silage	—	3009.49	—	—	—
Prairie hay	4.08	—	1286.53	965.27	642.59
Salt	6.87	6.97	6.63	5.67	3.92
Bluestem grass	Ad lib				
11. Feed cost per cwt. gain[3]	$12.16	13.56	12.25	13.55	12.35
12. Feed cost per steer[3]	$17.88	21.42	19.60	25.20	31.49

PHASE II—GRAZING

May 8, 1950-September 29, 1950—144 days[1]

13. Lot number	1	2	3	4	5
14. Days in phase	151[1]	144	144	144	144
15. Average initial weight	578	588	594	618	687
16. Average final weight	836	834	819	837	888
17. Average gain	258	246	225	219	201
18. Average daily gain	1.71	1.71	1.56	1.52	1.40
19. Cost of grazing per steer (bluestem)	$12.00	12.00	12.00	12.00	12.00
20. Cost of 100 lbs. of pasture gain ..	$4.65	4.88	5.33	5.48	5.97

SUMMARY OF PHASES I & II

November 25, 1949-September 29, 1950—308 days

21. Lot number	1	2	3	4	5
22. Average initial weight	431	430	434	432	432
23. Average final weight	836	834	819	837	888
24. Average gain ..	405	404	385	405	456
25. Average daily gain	1.31	1.31	1.25	1.31	1.48
26. Feed required for 100 lbs. gain					
Corn	—	—	—	80.99	143.86
Soybean pellets	77.53	40.59	42.60	40.49	35.96
Silage	—	1176.98	—	—	—
Prairie hay	1.48	—	534.66	443.30	359.34
Salt	2.49	2.73	2.76	2.60	2.19
27. Feed cost per 100 lbs. gain[3] ..	$7.38	$8.27	$8.20	$9.19	$9.54
28. Total feed cost per steer[3]	$29.88	$33.42	$31.60	$37.20	$43.49
29. Initial cost per steer at $24.50 a cwt.	$105.60	$105.35	$106.33	$105.84	$105.84
30. Total cost of steer and feed ..	$135.48	$138.77	$137.93	$143.04	$149.33
31. Selling price per steer at $27.50 per cwt.[4]	$220.55	$220.00	$215.88	$220.83	$234.30
32. Return per steer	$85.07	$81.23	$77.95	$77.79	$84.97

1. Grazing phase for lot 1 began May 1, 1950 rather than May 8, 1950.
2. Prairie hay was fed to lot 1 only when snow covered the grass.
3. Feed prices: ground shelled corn, $1.25 a bu.; soybean pellets, $75 per ton; prairie hay, $13.00 per ton; silage, $6.50 per ton; bluestem pasture per head, $6.00 for the winter, $12.00 for the summer; salt $12.00 per ton.
4. Selling price per steer is based on a selling price of $27.50 a cwt. and market weight which represents an average shrink of 4.1% from home weight.

Project 253-1: Wintering and Grazing Steer Calves

Methods of Wintering Steer Calves That Are To Be Grazed a Full Season and Sold Off of Grass, 1950-51

E. F. Smith, D. L. Good, R. F. Cox

INTRODUCTION

This is a report on the wintering phase of this test. It will be completed at the close of the grazing season in 1951. The purpose of this study is to determine the best method of wintering good quality steer calves that are to be grazed on bluestem pastures the following summer and sold off grass.

EXPERIMENTAL PROCEDURE

Five lots of good quality Hereford steer calves, 10 head to a lot, were used in this study. All were fed in dry lot, except lot 1, which was

fed out on dry bluestem pasture. The different lots received the following rations from December 5, 1950 to April 16, 1951.

Lot 1—Bluestem pasture and 2 pounds of soybean oil meal pellets per head daily.

Lot 2—Sorghum silage and 1 pound of soybean oil meal pellets per head daily.

Lot 3—Prairie hay and 1 pound of soybean oil meal pellets per head daily.

Lot 4—Prairie hay, 2 pounds of milo grain and 1 pound of soybean oil meal pellets per head daily.

Lot 5—Prairie hay, 4 pounds of milo grain and 1 pound of soybean oil meal pellets per head daily.

All lots will be grazed on bluestem pasture a full season in 1951 and sold as feeder yearlings in the fall.

OBSERVATIONS

1. Steer calves wintered on dry bluestem pasture were in a strong thrifty condition at the close of the winter and made a very satisfactory gain. The pasture these calves were wintered in was a creek bottom bluestem pasture with considerable bluegrass in it. The pasture was grazed the previous season but there was an abundance of dry grass and each calf had about six acres. The winter was mild and very favorable for wintering out on dry grass.

2. Due to the poor quality silage (it appeared to be of good quality but was quite acid and the calves didn't like it) fed in Lot 2, the calves in this lot did not gain as much as those fed prairie hay or the calves wintered out on dry grass.

3. The steers in Lot 3, although fed late-cut prairie hay (about September 1), made a very satisfactory gain.

4. Grain added to the ration in Lots 3 and 4 increased the gains in those lots to the extent that they could be sold for less money per cwt. at this date than any of the other lots and pay initial cost plus feed costs.

Wintering and Grazing Steer Calves

Phase I—Wintering

December 5, 1950 to April 16, 1951—132 Days[1]

Lot number	1	2	3	4	5
Number steers per lot	10	12	10	10	10
Place of wintering	Bluestem grass	Dry lot	Dry lot	Dry lot	Dry lot
Average initial weight	419	419	419	418	418
Average final weight	532	524	558	578	607
Average gain	113	105	139	160	189
Average daily gain	.84	.80	1.05	1.21	1.43
Average daily ration, lbs.:					
Ground milo	—	—	—	2.00	4.02
Soybean pellets	2.00	1.00	1.00	1.00	1.00
Prairie hay	.50[2]	—	12.95	11.15	10.44
Sorghum silage	—	27.85	—	—	—
Bluestem pasture	ad lib	—	—	—	—
Salt	.03	.15	.06	.07	.07
Mineral mixture[3]	.02	—	—	—	—
Feed required for 100 lbs. gain, lbs.:					
Ground milo	—	—	—	165.63	280.42
Soybean pellets	237.17	126.19	95.32	82.81	70.11
Prairie hay	59.12	—	1230.14	919.88	729.31
Silage	—	3501.06	—	—	—
Salt	3.20	18.26	5.92	5.50	4.66
Mineral mixture	2.94	—	—	—	—
Cost of feed per 100 lbs. gain	$14.76	$16.05	$11.61	$12.93	$13.85
Total feed cost per steer	$16.68	$16.85	$16.14	$20.69	$26.18
Initial cost per steer @ $31.50 per cwt.	$131.99	$131.99	$131.99	$131.67	$131.67
Initial cost plus feed cost	$148.67	$148.84	$148.13	$152.36	$157.85
Necessary selling price per cwt. to cover initial cost plus feed cost	$27.95	$28.40	$26.55	$26.36	$26.00
Appraised value per cwt. May 5, 1951					

1. The wintering period for Lot 1 was 134 days.
2. Prairie hay was fed to Lot 1 only when snow covered the grass.
3. Mineral mixture consisted of 2 parts steamed bone meal to 1 of salt by weight.

Feed prices: Milo grain, $2.30 a cwt.; soybean pellets, $75.00 a ton; prairie hay, $13.00 a ton; sorghum silage, $6.50 a ton; salt, $12.00 a ton; steamed bone meal, $5.50 a cwt.

Project 253-2: Wintering, Grazing and Fattening Heifers

Fattening Heifers for the Fall Market, 1949-50

E. F. Smith, D. L. Good, R. F. Cox, D. L. Mackintosh

INTRODUCTION

The purpose of this experiment is to develop a desirable system of fattening heifer calves similar to the deferred full-feeding system for steer calves. The system developed for good quality steer calves consists of three phases: (1) producing 225-250 pounds of gain during the winter, which usually requires the feeding of four to five pounds of grain per head daily; (2) grazing 90 days without grain; (3) full-feeding 100 days in the dry lot.

Some of the problems which it is hoped this experiment will answer are:

(1) How well should heifer calves be wintered that are going to grass and be full-fed later?

(2) Should the full-feeding of grain take place on grass or in the dry lot?

Cottonseed oil meal (solvent process) and soybean oil meal (expeller process) were compared in the wintering period.

EXPERIMENTAL PROCEDURE

Good quality Hereford heifer calves were used in this test. The system of management followed with each lot is as follows: