

105 days, made the largest total gain, the largest full fed gain, returned more per heifer and graded the highest in the carcass.

2. Lot 2, full fed out on brome grass, gained slightly more than Lot 1 full fed in dry lot. In two previous tests, the reverse has been true.

3. Feed costs per heifer were higher for feeding out on brome grass than in dry lot due to the cost of brome grass charged at 10c per head per day.

TABLE I—Full Feeding in Dry Lot vs. Brome Grass, 1950

Lot number	1	2	3
Number heifers per lot	10	10	10
Method of management	Wintered well then full fed in dry lot for 104 days	Wintered well then full fed on brome grass pasture for 104 days	Wintered well; grazed on brome grass April 15-June 2; full fed 105 days from June 2-Sept. 15, the first 30 days on brome grass and the rest in dry lot
Average initial weight	583	582	585
Average final weight	785	800	870
Average pasture gain (48 days)			46
Average full fed gain (104 days; Lot 3, 105 days)	202	218	239
Average total gain—pasture and full fed	202	218	285
Full feeding ration—average daily—pounds:			
Ground shelled corn	12.06	12.00	11.63
Soybean oil meal pellets	1.39	.53	1.11
Alfalfa hay	1.67	—	1.45
Prairie hay	3.29	—	2.16
Sorghum silage	1.78	—	—
Ground limestone .....	.08	—	-.07
Salt .....	.05	Free access	.02
Brome grass	—	4/15-7/28	6/2-7/1
Corn consumed per heifer, bushels	22.4	22.3	21.8
Initial cost per heifer @ appraised value of \$26.25 cwt.—4/15/50	\$153.04	\$152.78	\$153.56
Feed cost per heifer	\$38.02	\$40.31	\$42.36
Heifer cost plus feed cost	\$191.06	\$193.09	\$195.92
Selling price per cwt. @ market	\$29.00	\$29.00	\$28.40
Selling price per heifer	\$227.65	\$232.00	\$247.08
Margin per heifer above feed cost and initial cost	\$36.59	\$38.91	\$51.16
Carcass grades—U. S.			
Average good	—	—	1
Low good	2	2	4
High commercial	8	6	4
Average commercial	—	2	1

Feed prices: Corn, \$1.25 a bu.; soybean pellets, \$75 a ton; alfalfa hay, \$17.00 a ton; prairie hay, \$13.00 a ton; silage, \$6.50 a ton; ground limestone or salt, \$12.00 a ton; Brome grass, 10c per head per day.

Project 253-2: Wintering, Grazing and Fattening Heifers

Wintering Heifer Calves That Are To Be Fattened for the Summer or Early Fall Market, 1950-51

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

INTRODUCTION

This is a report of the wintering phase of this test. Following this phase the different lots will either be full-fed or go to grass and be full-fed after the grazing period. The objective of the test is to develop a method of fattening heifers similar to the deferred full-feeding system for steer calves.

The 1950-51 wintering test included:

- (1) a comparison of grain and no grain in the wintering ration of heifer calves;
- (2) a comparison of expeller type soybean oil meal pellets and hydraulic extracted cottonseed oil meal pellets.

EXPERIMENTAL PROCEDURE

Seventy good quality Hereford heifer calves were used in this test. They were divided into seven lots of 10 head each. The system of management planned for each lot follows:

Lot (1) wintered with 2 pounds grain, soybean oil meal pellets (expeller type), sorghum silage and prairie hay; grazed May 1 to July 15 on bluestem pasture; full-fed 100 days in dry lot.

Lot (2) wintered with 2 pounds grain, soybean oil meal pellets (expeller type), sorghum silage, prairie hay; grazed April 16 to July 1 on brome pasture; started on feed on brome pasture June 1; moved to dry lot July 1 for completion of 100-day full-feeding period.

Lot (3) wintered with 2 pounds grain, cottonseed oil meal pellets (hydraulic extracted), sorghum silage, prairie hay; full-fed grain on brome pasture for 100 days following winter period.

Lot (4) wintered with 2 pounds of grain, cottonseed oil meal pellets (hydraulic extracted), sorghum silage, prairie hay; full-fed 100 days in dry lot after wintering period.

Lot (5) wintered with 4 pounds of grain, soybean oil meal pellets, sorghum silage, prairie hay; full-fed 100 days in dry lot following the winter period.

Lot (6) wintered with sorghum silage, prairie hay, soybean oil meal pellets; bluestem pasture May 1 to July 15; full-fed in dry lot 100 days after July 15.

Lot (7) wintered with sorghum silage, prairie hay, soybean oil meal pellets; bluestem pasture May 1 to August 10; fed protein July 15 to August 10 on bluestem pasture; full-fed in dry lot after August 10 for about 75 days.

OBSERVATIONS

1. The addition of 2 pounds of mlo grain to the ration increased the gain approximately a quarter of a pound per head daily. Compare Lots (1) and (2) with Lots (6) and (7).

2. The addition of 4 pounds of mlo grain to the ration increased

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 .....	.....	.....	.....	.....	.....	.....	.....
3. Ration fed	Milo expeller type SBP, prairie hay, silage	Milo expeller type SBP, prairie hay, silage	Milo hydraulic extracted CSP, prairie hay, silage	Milo hydraulic extracted CSP, prairie hay, silage	Milo expeller type SBP, prairie hay, silage	Milo expeller type SBP, prairie hay, silage	Milo expeller type SBP, 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	—	—	1.00	—	—
Cottonseed meal pellets (hydraulic extracted)	—	—	1.00	1.00	—	—	—
Prairie hay	2.05	2.02	1.52	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	116.13
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	2259.66
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-fed (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.