

tion cows in the herd. An inbreeding program was initiated to establish a line of a Wernacre Premier foundation by breeding the cow herd to College Premier 29th 2368167 during 1949. Approximately one-half of the females that calved during 1950 were half sisters to College Premier 29th. The 1950 calf crop was placed on feeding trials in the fall of 1950. These trials will be completed during the spring and summer of 1951.

Gregg Farms Hoarfrost 2492499, a son of Edellyn Valiant Mercury 2247154, was purchased in 1949 and used as one of the sires in the Shorthorn herd during 1950. A second inbred line of Mercury breeding will be established at a time when sufficient breeding stock has been produced in the project. The 1951 calf crop is sired by both College Premier 29th and Gregg Farms Hoarfrost.

The cows included in the project are pasture-bred to calve in the spring of each year. The calves are not creep-fed during the suckling period and are weaned at 196 days of age. After a 30-day adjustment period they are placed on individual feeding trials for a 196-day period. The performance data obtained from these feeding trials will provide part of the information used to select breeding animals in the project. Fast-gaining animals with good type will be retained for breeding purposes as the project progresses.

No conclusive information is available at this time; however, a partial summary of the 1950 calf crop is presented in Table I.

#### ROLLED VS. GROUND GRAIN FOR FATTENING YEARLING HEIFERS—1950

R. F. Cox, E. F. Smith

##### INTRODUCTION

A great deal of interest in rolled grain has been expressed. Some commercial feeders have purchased rollers in preference to grinders; a few feeders truck grain to town to have it rolled in preference to grinding grain at home. The usual recommendation for grain preparation for fattening commercial cattle has been to have it cracked or medium ground, not finely ground. Rolled grain has been considered by most people to be equal to medium ground or cracked grain and by some to be superior to medium ground or cracked grain. No conclusive experimental evidence was available as to the best method of grain preparation for fattening cattle. The objective of this study then is to find out which is the best method of grain preparation: rolling, coarse grinding or fine grinding.

##### EXPERIMENTAL PROCEDURE

Thirty-five good quality yearling Hereford heifers were divided into three equal lots and fed identical rations for 142 days except lot 1 received finely ground grain, lot 2 coarsely ground grain and lot 3 rolled grain.

After the heifers were on feed, they were self-fed grain. Prairie hay was fed in amounts that would be cleaned up. Soybean oil meal pellets were fed twice daily in a bunk separate from the grain.

Barley was fed as the only grain for the first 2/3 of the test and barley and corn were fed the remainder of the test.

The finely ground grain was prepared with a hammer mill and had a coarse mealy texture. The coarsely ground grain was prepared with a burr mill. The rolled grain was dry rolled which worked fine on the barley. The corn was properly rolled at the time it came out of the roller but through handling, it tended to break up into smaller particles.

##### OBSERVATIONS

All lots gained the same and only small differences occurred in grain

consumption and efficiency of gain. General opinion is that rolled and cracked grains are more palatable than finely ground grains. This test did not show this to be true.

TABLE I—Comparison of Rolled, Coarse and Finely Ground Grain for Fattening Yearling Heifers  
(July 12, 1950 to December 1, 1950 (142 days))

Lot number .....	1	2	3
Method of grain preparation .....	Fine ground	Coarse ground	Rolled
Number heifers per lot .....	12	12	11
Average initial weight .....	543	543	544
Average final weight .....	834	834	834
Average gain .....	291	291	290
Average daily gain .....	2.05	2.05	2.04
Average daily ration, pounds:			
Barley .....	8.70	9.01	8.37
Corn .....	3.39	2.80	3.27
Soybean oil meal pellets .....	1.90	1.90	1.90
Prairie hay .....	4.99	5.63	5.73
Ground limestone .....	.08	.08	.08
Salt .....	.05	.05	.04
Feed required per 100 lbs. gain, pounds:			
Barley .....	424.68	439.69	409.97
Corn .....	165.61	136.77	157.12
Soybean oil meal pellets .....	92.87	92.70	93.13
Prairie hay .....	243.41	274.71	280.50
Ground limestone .....	3.72	3.72	4.08
Salt .....	2.23	2.41	1.80
Cost of feed per 100 lbs. gain .....	\$18.09	\$17.98	\$17.83

Feed Prices: Barley, \$1.05 a bu.; Corn, \$1.25 a bu.; soybean pellets, \$75.00 a ton; prairie hay, \$13.00 a ton; ground limestone or salt, \$12.00 per ton.

#### A COMPARISON OF ROLLED, COARSE GROUND AND FINE GROUND MILO GRAIN FOR FATTENING STEER CALVES, 1950-51

R. F. Cox and E. F. Smith

##### INTRODUCTION

This is a progress report on full feeding rolled, coarse ground, and fine ground milo grain to steer calves. The test will be completed in July, 1951 when the steers will have been on full feed about 225 days.

The objective of the test is to determine which is the most profitable method of preparing milo grain for full feeding, rolling, coarse grinding, or fine grinding.

##### EXPERIMENTAL PROCEDURE

Good quality Hereford steer calves are being used in this study. There are three lots, 10 head to a lot, all being fed the same except for the difference in grain preparation. They were started on test December 5, 1950. At the beginning of the test they were fed all of the sorghum silage they would eat, 2 pounds of alfalfa hay, and 1 1/2 pounds of soybean pellets per head daily. The grain was started at one pound per head daily and raised one pound per head weekly. When the calves reached a daily grain consumption of 14 to 15 pounds per

head they were placed on a self feeder and the silage was omitted from the ration and replaced with a total of three to four pounds of alfalfa hay per head daily, which was about what they would clean up in a day.

The rolled milo was dry rolled and appeared satisfactory upon emergence from the roller; however, after sacking and when it was finally fed to the cattle it was broken into small particles and somewhat powdered. The coarse ground or cracked milo was the product of a burr mill. A hammer mill was used to prepare the fine ground milo, which was ground to a coarse mealy mixture.

#### OBSERVATIONS

1. Only small differences in daily gain have occurred; all lots have made very satisfactory gains to date.
2. Grain consumption was about the same for all lots. The steers fed coarse ground milo consumed slightly more grain than steers fed either rolled milo or fine ground milo.
3. Little or no difference is apparent at this time between the lots in regard to efficiency of gain or cost of production.

#### A Comparison of Rolled, Coarse Ground and Fine Ground Milo Grain for Fattening Steer Calves December 5, 1950 to April 13, 1951—129 days

1. Lot number .....	6	7	8
	Fine	Coarse	Rolled
2. Management .....	Ground	Ground	Milo
	Milo	Milo	
3. Number of steers per lot .....	10	10	10
4. Initial weight per steer .....	418	419	418
5. Final weight per steer .....	713	727	718
6. Gain per steer .....	295	308	300
7. Daily gain per steer .....	2.29	2.39	2.33
8. Daily ration per steer, lbs.:			
Milo grain .....	8.97	9.11	8.86
Soybean oil meal pellets .....	1.37	1.37	1.37
Sorghum silage .....	11.28	12.64	12.33
Alfalfa hay .....	2.25	2.45	2.33
Salt .....	.05	.06	.04
9. Feed required per 100 pounds of gain, lbs.:			
Milo grain .....	392.08	381.40	381.00
Soybean oil meal pellets .....	59.83	57.31	58.83
Sorghum silage .....	493.39	529.22	530.17
Alfalfa hay .....	98.31	102.76	100.00
Salt .....	2.40	2.30	1.60
10. Cost of feed per 100 pounds of gain	\$13.84	\$13.66	\$13.68
11. Initial cost per steer into feed lot @ \$31.50 per cwt. ....	\$131.67	\$131.99	\$131.67
12. Feed cost per steer .....	\$40.82	\$42.06	\$41.03
13. Steer cost plus feed cost .....	\$172.49	\$174.05	\$172.70
14. Necessary selling price per cwt. to meet steer cost plus feed cost .....	\$24.19	\$23.94	\$24.05
15. Appraised value per cwt. May 5, 1951 .....			

## 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—1949-1950

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

#### INTRODUCTION

It is a well known fact that thin steers usually gain more on grass than fleshy steers. However, little information is available about the total gain, winter and summer, of steers wintered in different ways and then grazed on bluestem pasture. The primary objective of this test is to determine how steer calves that are to be grazed a full season on bluestem pasture and sold off of grass should be wintered. This is the first year's work on a three-year project.

#### EXPERIMENTAL PROCEDURE

Five lots of good quality Hereford steer calves, 10 head to a lot, were used in this study. All were wintered in a dry lot except lot 1 which was fed out on bluestem pasture. The different lots received the following wintering rations from November 25, 1949 to May 1, 1950 and were then grazed together on bluestem pasture until September 29, 1950.

- Lot 1—Bluestem pasture and 2 pounds of soybean pellets per head daily.
- Lot 2—Silage and 1 pound of soybean pellets per head daily.
- Lot 3—Prairie hay and 1 pound of soybean pellets per head daily.
- Lot 4—Prairie hay, 2 pounds of corn and 1 pound of soybean pellets per head daily.
- Lot 5—Prairie hay, 4 pounds of corn and 1 pound of soybean pellets per head daily.

#### OBSERVATIONS

1. This first test indicates that the most satisfactory way of wintering steer calves may be out on dry bluestem pasture if they are to be grazed a full season and sold in the fall. The winter of 1949-50 was exceptionally mild with very little rain or snow and the calves wintered on grass were in a creek bottom bluestem pasture with considerable bluegrass in it.
2. Steer calves wintered on dry bluestem grass (lot 1) had the lowest feed cost per 100 pounds of gain, the lowest total feed cost per steer and made the greatest return per steer.
3. Lot 5, fed 4 pounds of grain per head daily during the winter, gained 51 pounds more than any other lot and due to this large gain made practically as much money as lot 1, which was wintered out on the grass.
4. The lots that made the smallest winter gain made the largest summer gain.
5. The steer calves wintered on prairie hay supplemented with protein did not make quite as much total gain as did the calves wintered on silage supplemented with protein.

TABLE I—Methods of Wintering Steer Calves That Are To Be Grazed a Full Season and Sold Off of Grass

#### PHASE I—WINTERING

November 25, 1949-May 8, 1950—164 days

1. Lot number .....	1	2	3	4	5
2. Number of steers per lot ....	10	9	9	10	10