tion of 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 2386167 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 Hearrost 2492499, a son of Edelwyn Vaillant Mercury 247114, 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 and Gregg Farms Hearrost.

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 190-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 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 grain 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 meal 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

<table>
<thead>
<tr>
<th>Lot number</th>
<th>Method of grain preparation</th>
<th>Number of heifers per lot</th>
<th>Average final weight</th>
<th>Average gain</th>
<th>Average daily gain</th>
<th>Average daily ration, pounds:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lot 1</td>
<td>Fine ground</td>
<td>12</td>
<td>643</td>
<td>3.72</td>
<td>3.05</td>
<td>8.70</td>
</tr>
<tr>
<td>Lot 2</td>
<td>Coarse ground</td>
<td>12</td>
<td>643</td>
<td>3.72</td>
<td>3.05</td>
<td>8.70</td>
</tr>
<tr>
<td>Lot 3</td>
<td>Rolled</td>
<td>11</td>
<td>642</td>
<td>3.72</td>
<td>3.05</td>
<td>8.70</td>
</tr>
</tbody>
</table>

Feed required per 100 lbs. gain, pounds:

| Lot 1      | Barley | 424.68 | 439.69 | 409.97 |
| Lot 2      | Corn   | 165.61 | 136.77 | 157.12 |
| Lot 3      | Soybean oil meal pellets   | 95.87 | 93.70 | 95.13 |
| Lot 4      | Prairie hay | 243.41 | 274.71 | 280.50 |
| Lot 5      | Ground limestone | 3.72 | 3.72 | 4.08 |
| Lot 6      | 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 255 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 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 1/2 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 eat 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 some-
what 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 meal 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 12, 1951—129 days

<table>
<thead>
<tr>
<th>Lot number</th>
<th>Management</th>
<th>Number of steers per lot</th>
<th>Initial weight per steer</th>
<th>Final weight per steer</th>
<th>Gain per steer</th>
<th>Daily gain per steer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 6</td>
<td>Fine Ground</td>
<td>10</td>
<td>418</td>
<td>713</td>
<td>295</td>
<td>2.29</td>
</tr>
<tr>
<td>2. 7</td>
<td>Coarse Ground</td>
<td>10</td>
<td>419</td>
<td>727</td>
<td>308</td>
<td>2.39</td>
</tr>
<tr>
<td>3. 8</td>
<td>Rolled Milo</td>
<td>10</td>
<td>418</td>
<td>718</td>
<td>300</td>
<td>2.33</td>
</tr>
</tbody>
</table>

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: 11.26, 12.64, 12.28
- Alfalfa hay: 2.25, 2.45, 2.33
- Salt: .05, .06, .04

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, 1.69

Cost of feed per 100 pounds of gain: $15.84, $15.86, $15.88

Initial cost per steer into feed lot @ $31.50 per cwt. $131.67, $131.99, $131.67

Cost feed per steer: $40.82, $42.08, $41.03

Steer cost plus feed cost: $172.49, $174.05, $172.79

Necessary selling price per cwt. to
meet steer cost plus feed cost $24.19, $23.94, $24.05

Appraised value per cwt. May 5, 1951

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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 fleshly steers. However, little information is available about the
total gain, winter and summer, of steers wintered in different ways
and then grazed on bluestem pastures. 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 Sep-
tember 25, 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 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 sum-
mer 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

<table>
<thead>
<tr>
<th>Lot number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of steers per lot</td>
<td>10</td>
<td>9</td>
<td>9</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>