

Project 329: Factors Affecting Gains

F. W. Bell, E. F. Smith, and W. H. Smith

Cattle in the same feedlot differ considerably in their rate of gain. These differences in ability to gain can be explained only by differences in characteristics of individual animals, since all are under the same conditions of feeding and care. In this study we are trying to determine what differences in thin cattle are reliable indications of gaining ability. A record of several characteristics is made of each animal at the beginning of the feeding trials. Each animal is rated for each of the following parts and factors:

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|---------------|----------------------|
| 1. Head | 8. Hindquarters |
| 2. Front legs | 9. Hind legs |
| 3. Chest | 10. Natural fleshing |
| 4. Body | 11. Disposition |
| 5. Flank | 12. Frame |
| 6. Bone | 13. Probable gain |
| 7. Hips | |

Six different ratings are used for each factor, a rating of one being given where the part is especially good, and a rating as low as six when a part is very poor. All ratings are made by three members of the staff to obtain an average rating for each factor.

These ratings will be treated statistically to determine the degree of correlation of each factor with the actual gains made by the cattle. When a sufficient amount of this material can be analyzed and interpreted by our statistical laboratory, further conclusions can be drawn concerning factors which influence rate of gain. The following tables list the estimated rank in ability to gain as compared to actual gains of the cattle.

Table I

Three lots of steer calves—full-fed grain 225 days.

Ranking	First	Second	Third	Fourth	Fifth	Sixth
No. steers ranked	1	6	9	8	4	0
Av. gain per steer, lbs.	553	497	485	460	431	

Table II

Three lots of yearling steers wintered without grain—205 days.

Ranking	First	Second	Third	Fourth	Fifth	Sixth
No. steers ranked	2	9	10	6	3	0
Av. gain per steer, lbs.	283	263	194	139	93	

Table III

Three lots of yearling steers—wintered without grain—grazed May 8 to October 15—313 days total.

Ranking	First	Second	Third	Fourth	Fifth	Sixth
No. steers ranked	2	9	10	6	3	0
Av. gain per steer, lbs.	420	383	349	310	275	

Project 253-1: Wintering and Grazing Steer Calves

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

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

Introduction

The primary objective of this test was to find the most satisfactory method or methods of wintering steer calves that are going to be

grazed on bluestem pasture during the summer and sold off grass as feeder yearlings. This is the second in a series of three tests. The third test is now under way and the wintering phase is reported in this publication.

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 December 5, 1950, to May 1, 1951, and were then grazed together on bluestem pasture until October 5, 1951.

Lot 1—bluestem pasture and 2 pounds of soybean pellets per head daily.

Lot 2—sorghum silage (Tennessee orange) 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 ground milo grain, and 1 pound of soybean pellets per head daily.

Lot 5—prairie hay, 4 pounds of ground milo grain, and 1 pound of soybean pellets per head daily.

The calves used in this test originated in the vicinity of Sonora, Texas, and arrived at Manhattan November 3, 1950. They were a part of a shipment of 120 head. From November 3 until they were placed on test they received prairie hay, sorghum silage, and a small amount of alfalfa. They were also taught to eat a protein concentrate during this period. They were sprayed with B.H.C. for lice.

The calves had free access to salt at all times during the test and were given free access to a mixture of 2 parts bonemeal and 1 part salt about the last third of the wintering period.

A feedstuff analysis of the feeds used in the test may be found in the back of this publication.

The final weights are full weights and should be shrunk at least 3 percent for a more complete picture of steer gain.

Observations

1. The results of this test indicate the most satisfactory method of wintering may be on dry bluestem pasture. This was also true in Experiment 1, conducted in 1949-50. The large winter gain obtained both years is probably due largely to the bluegrass present in the sheltered creek bottom pasture where the calves were wintered. The winters of 1949-50 and 1950-51 were mild and ideal for wintering cattle on dry grass in this area.

2. Lot 2, wintered on sorghum silage and 1 pound of soybean pellets, failed to make as much yearly gain as any of the other lots. This was probably due to the poor quality silage fed. It looked good but was quite acid, contained little gain, and the calves didn't like it.

3. The calves fed prairie hay cut about September 1, and 1 pound of soybean pellets daily made a larger winter gain, larger yearly gain, and returned more per steer than those fed poor quality sorghum silage.

4. The results of this test indicate it is not profitable to add grain to the wintering ration of steer calves that are going to be grazed a full season and sold off grass. Lot 4 was fed 2 pounds of grain per head daily and Lot 5 received 4 pounds of grain per head daily in addition to prairie hay and 1 pound of soybean pellets per head daily; both had a larger yearly feed cost per 100 pounds of gain and a larger yearly feed cost per steer, and returned less per steer than Lot 3 fed only prairie hay and 1 pound of soybean pellets per head daily.