

Wintering and Grazing Yearling Steers

The Most Efficient Level of Winter Protein Feeding for Yearling Steers Wintered and Summer Grazed on Bluestem Pasture, 1952-53.

PROJECT 253-4

E. F. Smith, F. H. Baker, R. F. Cox, and L. A. Holland

Yearling steers have been successfully wintered at this station on dry bluestem pasture for the past five winters by feeding 1½ to 2 pounds of cottonseed or soybean oilmeal per head daily. The objective of this test is to determine if the level of winter protein feeding may be reduced without affecting the yearly performance of the steers.

Twenty head of good quality Hereford yearling steers, 10 head to a lot, were used in this study. They originated in southeastern Colorado and were purchased as calves in the fall of 1951 for 42 cents a pound. They were used in summer grazing tests on bluestem pasture in 1952. From November 1 until December 31, 1952, when this test started, they were on bluestem pasture supplemented with 1 pound of soybean pellets. During the winter phase of this test, the steers were moved from pasture to pasture every 15 days to minimize any differences due to pastures. The winter pastures in which the steers were grazed were of such size as to vary the stocking rate from 6 to 19 acres per head. All pastures used in the winter had sufficient grass remaining on them for winter use, although they were stocked at a normal rate for the summer of 1952.

In addition to dry winter bluestem pasture, the following amounts of protein were fed:

Lot 1—1 pound of soybean pellets per head daily.

Lot 2—2 pounds of soybean pellets per head daily.

The steers were grazed together during the summer of 1953 after the different winter treatments.

Observation

1. On the basis of the combined winter and summer gain, the most effective level of protein supplement was 1 pound of soybean pellets per head daily. It took 124 pounds of pellets to produce an additional 15 pounds of gain in Lot 2.

Table 3.—Wintering and Grazing Yearling Steers.

Phase 1—Wintering—December 31, 1952-May 4, 1953—124 days.

Lot number	1	2
No. of steers per lot	10	10
Management	Fed 1 lb. soybean pellets	Fed 2 lbs. soybean pellets
Initial wt. per steer	718	720
Final wt. per steer	784	832
Gain per steer	66	112
Daily gain per steer	.53	.90
Daily ration per steer:		
Soybean pellets ¹	1.00	2.02
Prairie hay ²	1.39	1.39
Minerals ³	.22	.20

Salt	.06	.05
Dry bluestem pasture	Free choice	Free choice
Feed cost per steer ⁴	\$11.31	\$16.36

Phase 2—Summer Grazing—May 4, 1953-August 3, 1953—91 days.

Initial wt. per steer	784	832
Final wt. per steer	1003	1020
Gain per steer	219	188
Daily gain per steer	2.41	2.07

Summary of Phases 1 and 2

Initial wt. per steer	718	720
Final wt. per steer	1003	1020
Gain per steer	285	300
Daily gain per steer	1.33	1.40
Total feed cost per steer	\$27.31	\$32.36
Feed cost per cwt. gain	\$ 9.60	\$10.78

1. Soybean pellets were discontinued April 18, 1953.
2. Prairie hay was fed only when snow covered the grass.
3. Minerals were 2 parts steamed bonemeal and 1 part salt.
4. Feed prices: Soybean pellets, \$95 a ton; prairie hay, \$25 a ton; minerals, \$5 cwt.; salt, \$12 a ton.

Wintering and Grazing Yearling Steers

Effect of Feeding a Protein Supplement During the Latter Part of the Grazing Season to Two-Year-Old Steers on Bluestem Pasture, 1953.

PROJECT 253-4

E. F. Smith, F. H. Baker, and R. F. Cox

The nutritive value of bluestem pasture usually begins to decline rapidly after midsummer. This test is concerned with the effect of feeding a protein supplement after midsummer on cattle gains and condition.

Three years of this work have been summarized in Circular 297.

Experimental Procedure

Twenty head of good quality two-year-old Hereford steers were used in this test. They were wintered on dry bluestem pasture and then grazed together until August 5, when this test started.

The steers were divided into two uniform lots and grazed on bluestem pasture with the following treatment from August 5, 1953, to October 23, 1953:

Lot 1—No supplement.

Lot 2—Two pounds of soybean pellets per head daily.

Observations

1. The 38 pounds of beef produced in Lot 2 as a result of feeding two pounds of soybean pellets per head daily was just enough to pay for the 158 pounds of pellets required to produce this additional gain.

2. Lot 2, fed soybean pellets, appeared fleshier as judged by a committee of animal husbandmen.

Table 4.—Effect of Feeding a Protein Supplement During the Latter Part of the Grazing Season to Two-Year-Old Steers on Bluestem Pasture, 1953.

August 5-October 23, 1953—79 days.

Lot number	1	2
Steers in lot	10	10
Management	No soybean pellets fed	Fed two pounds soybean pellets per head daily
Initial wt. per steer	1014	1009
Final wt. per steer	1079	1112
Gain per steer	65	103
Daily gain per steer82	1.30
Gain in wt. contributed to soybean pellets	0	38
Total soybean pellets fed per steer, lbs.	0	158
Gain per steer by periods:		
Aug. 5-Sept. 3	51	38
Sept. 3-Oct. 2	16	52
Oct. 2-Oct. 23	-2	13

Wintering and Grazing Yearling Steers

The Most Efficient Level of Winter Protein Feeding for Yearling Steers Wintered and Summer Grazed on Bluestem Pasture, 1953-54.

PROJECT 253-4

E. F. Smith, F. H. Baker, R. F. Cox, and L. A. Holland

This is a progress report covering only the wintering phase of this test. One other test has been completed for 1952-53, and is reported in this publication (page 6). The purpose of this experiment is to determine which is the more profitable method of wintering on dry bluestem pasture for yearling steers, feeding 1 or 2 pounds of cottonseed cake per head daily.

The results are to be measured by the combined winter and summer gains and the condition of the cattle.

The steers will be grazed together during the summer of 1954 and will be sold off grass as feeder steers in the fall.

Experimental Procedure

Twenty head of good quality Hereford yearling steers were used in this study. They were purchased from the Brite Ranch at Marfa, Texas, in the fall of 1952 as calves for 28 cents a pound. They were used in summer grazing tests on bluestem pasture in 1953. This test started at the close of the summer grazing season on October 26, 1953, and extended to April 1, 1954. During this test the steers were moved from pasture to pasture every 15 days to minimize any differences due to pastures.

During March one-half of the steers in each lot had access to molasses-sprayed grass in a pilot test to find out if this method of feeding might have some possibilities. The pastures in which the

steers were grazed were of such size as to vary the stocking rate from 6 to 19 acres per head. All pastures used in this winter test had sufficient grass remaining for winter use. They were lightly stocked during the summer of 1952.

Observations

1. The winter was mild, dry, open, and favorable for wintering on dry grass. The additional pound of cottonseed cake fed per head daily to Lot 19 increased the winter gain enough to pay for its use. However, this may not be true by the end of summer.

The results of the level of protein feeding studied here can best be evaluated at the close of the summer grazing season in 1954 and will be reported at next year's livestock feeders' day.

Table 5.—Wintering and Grazing Yearling Steers.

Phase 1—Wintering, October 26, 1953, to April 1, 1954—158 days.

Lot number	18	19
Number of steers per lot	10	10
Method of feeding	1 lb. cottonseed cake daily on dry grass	2 lbs. cottonseed cake daily on dry grass
Initial wt. per steer	743	743
Final wt. per steer	838	872
Gain per steer	95	129
Daily gain per steer61	.83
Daily ration per steer, lbs.:		
Cottonseed cake	1.00	2.00
Mineral (bonemeal and salt)16	.12
Salt	Free choice	Free choice
Dry bluestem pasture	Free choice	Free choice
Feed cost per steer ¹	\$11.47	\$17.13

1. Feed prices may be found on page 27 of this publication.

Wintering, Grazing, and Fattening Steer Calves

1. The value of trace minerals in a wintering and fattening ration.¹
2. Self-feeding grain in drylot vs. self-feeding on bluestem pasture, 1952-53.

PROJECT 253-6

E. F. Smith, R. F. Cox, and F. H. Baker

This is the second trial of this experiment; the first is reported in Kansas Agricultural Experiment Station Circular 297. The steers were all wintered, grazed and then full fed. One objective of the test was to find out the value of trace minerals, copper, cobalt, iron, manganese, iodine, and zinc on the performance of steers on a wintering and a fattening ration. Another objective was to compare self-feeding grain on grass to self-feeding grain in drylot for steers on the deferred full-feeding program. The system of production called deferred full-feeding uses good-quality steer calves and consists of three phases: (1) producing 225-250 pounds of gain during the winter; (2) grazing 90 days without grain; and (3) full feeding 100 days in the drylot.

1. The trace mineral premix used in this study was furnished by the Calcium Carbonate Company of Chicago, Ill.