

Summary of Phases I, II, and III

26. Total gain per heifer (all phases)	504	478	450
27. Daily gain per heifer (all phases)	1.51	1.43	1.35
28. Feed cost per cwt. gain	\$25.98	\$25.00	\$25.32
29. Total cost of feed per heifer	\$130.96	\$119.48	\$113.94
30. Initial cost per heifer @ \$40.00 cwt.	\$192.80	\$192.00	\$191.60
31. Feed cost plus heifer cost	\$323.76	\$311.48	\$305.54
32. Selling price per cwt. at market	\$29.50	\$29.50	\$28.50
33. Selling price per heifer	\$279.95	\$273.76	\$254.40
34. Loss per heifer	\$43.81	\$37.72	\$51.14
35. Percent shrink in shipping to market	3.63	3.13	3.87
36. Dressing percent	60.8	59.8	59.1
37. Carcass grades, U.S.:			
Low prime	1		
High choice	4	4	
Average choice	1	1	2
Low choice	2	4	6
High good	2		
Average good		1	1

1. Wintering period for Lot 1, December 11, 1951, to May 5, 1952; Lot 2, December 11, 1951, to April 22, 1952; Lot 3, December 11, 1951, to April 26, 1952.
2. Fed only when snow covered the grass.
3. Fed for about two weeks while breaking the heifers to eat pellets.
4. Mineral was 2 parts steamed bonemeal and 1 part salt.
5. Feed prices: Milo grain, \$2.80 cwt.; Corn, \$1.90 bu.; Cottonseed oil cake or pellets, \$100.00 ton; Prairie hay, \$15.00 ton; Alfalfa hay, \$25.00 ton; Sorghum silage, \$6.50 ton; Dry bluestem pasture, .50 per head per month; Winter brome pasture, \$1.00 per head per month; Summer bluestem and brome, \$25.00 per head for the summer season; Salt and limestone, \$12.00 ton.

Project 253-4: 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.

Ed F. Smith, 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 oil meal per head daily. The objective of this test is to determine if the level of protein feeding may be reduced without affecting the yearly performance of the steers. This is a report of only the wintering phase of this test. The steers will be grazed together during the summer of 1953 and will be sold off grass as feeder steers in the fall.

Experimental Procedure

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 this test the steers were moved from pasture to pasture every 15 days to minimize any differences due to pastures. 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 on them for winter use, although they were stocked at a normal rate for the summer of 1952.

Observations

The gain made by both lots of steers was larger than would be expected, compared with past years' results. The steers in Lot 12 fed 1 pound of soybean pellets per head daily gained considerably less than the Lot 6 steers fed 2 pounds. However, they wintered in strong, thrifty condition. The winter was mild with the exception of three snowstorms; one the latter part of November covered the grass for about three weeks. The results of the level of protein feeding studied here can best be evaluated at the close of the summer grazing season in 1953.

Table 19.—Wintering and Grazing Yearling Steers.

Phase I—Wintering—December 31, 1952, to April 1, 1953—91 days.

1. Lot number	6	12
2. Number steers per lot	10	10
3. Method of feeding	2 pounds soybean pellets daily on dry grass	1 pound soybean pellets daily on dry grass
4. Initial weight per steer	720	718
5. Final weight per steer	816	785
6. Gain per steer	96	67
7. Daily gain per steer	1.06	.74
8. Daily ration per steer:		
Soybean oil meal pellets	2.01	1.00
Mineral (bonemeal and salt)	.19	.18
Salt	.05	.04
Dry bluestem pasture	ad lib	ad lib
Prairie hay	1.65	1.65
9. Feed cost per steer ¹	\$13.71	\$9.30

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

Project 253-3: The Effect of Grazing Systems on Live-stock and Vegetation

Comparison of Different Methods of Managing Bluestem Pastures, 1952.

E. F. Smith and K. L. Anderson

The objectives of this experiment are to determine the effects of different stocking rates, deferred grazing, and burning on livestock gains, productivity of pastures, and the bluestem vegetation itself.

Table 20.—A Comparison of Different Methods of Managing Bluestem Pasture.
May 5, 1952, to October 1, 1952—149 days.

	1	2	3	4, 5, 6	7	8	9
1. Pasture number	Normal stocked	Over-stocked	Under-stocked	Deferred, rotated	Early spring burned 2/26	Medium spring burned 4/7	Late spring burned 4/28
2. Management							
3. No. head/pasture	18	27	12	54	13	13	13
4. Acres in pasture	60	60	60	3-60*	44	44	44
5. No. acres/head	3.3	2.2	5	3.3	3.4	3.4	3.4
6. Initial weight/steer	452	455	455	4571	455	452	451
7. Final weight/steer	698	664	683	6541	706	730	734
8. Gain/steer	246	209	228	197	251	278	283
9. Daily gain/steer	1.65	1.40	1.53	1.32	1.68	1.87	1.89
10. Gain/acre	74	94	46	57	74	82	84
11. Appraised value of steers/cwt. on October 1, 1952	\$26.00	\$25.25	\$26.00	\$25.00	\$25.50	\$25.50	\$26.00
12. Loss/steer ²	\$11.70	\$26.19	\$16.52	\$31.92	\$14.12	\$7.15	\$2.25

* Three 60-acre pastures

1. In computing the weights and gains of steers in Pastures 4, 5, 6, two steers were omitted because of failure to gain due to unknown sickness.
2. The initial cost of the steers was estimated at \$36 cwt., grass at \$25/head for the season. The final weight was shrunk 3 percent to obtain a sale weight.

Results are reported here for the fourth year of the experiment. Only three years' results on burning and understocking have been obtained. In addition to the yearly report, a brief summary of the cattle gains for the past three years is included.

Experimental Procedure

Good quality thin Hereford yearling steers weighing about 450 pounds were used to stock the pastures. The method of management of each pasture was as follows:

- Pasture 1—Normal rate of stocking, 3.3 acres/head;
 - Pasture 2—Overstocked, 2.2 acres/head;
 - Pasture 3—Understocked, 5 acres/head;
 - Pastures 4, 5, 6—Deferred and rotation grazing, 3.3 acres/head.
- All steers were held in two pastures until July 1, then turned in to the protected pasture until it was deemed advisable to allow them the run of all three pastures;
- Pasture 7—Burned February 26, 1952; rate of stocking was 3.4 acres/head;
 - Pasture 8—Burned April 7, 1952; rate of stocking was 3.4 acres/head;
 - Pasture 9—Burned April 28, 1952; rate of stocking was 3.4 acres/head.

Observations

1. In this year's test, the pastures which produced the most results, particularly gain per head, were those burned in medium and late spring. The lowest daily gain occurred on the deferred and rotation grazed pastures.
2. Early spring burning allowed the same gains as no burning.
3. The understocked pasture failed to produce as much daily gain or gain per acre as the normal stocked. Overstocking resulted in extremely close utilization of the forage and proved unsatisfactory from every standpoint except gain per acre.
4. The season was extremely dry with only small amounts of moisture occurring in the late summer.
5. Detailed counts of the vegetation show that no significant trends in population have as yet developed.

Table 21.—Three-Year Summary—1950, 1951, 1952
Yearly Account of Cattle Gains Under Different Methods of Grazing Pastures

	Normal stocked	Over-stocked	Under-stocked	Deferred, rotation grazing
Gain/steer, lbs.				
1950	221	210	214	205
1951	242	256	290	234
1952	246	209	228	197
Average	236	225	244	212

Yearly Account of Cattle Gains on Burned and Nonburned Pastures

	Not burned	Early spring burned	Medium spring burned	Late spring burned
Gain/steer, lbs.				
1950	221	216	254	230
1951	258	243	265	259
1952	246	251	278	283
Average	242	237	266	257