

Table 8
Comparison of Different Methods of Managing Bluestem Pastures.
April 28 to September 29, 1955—155 days.

Pasture number	1	2	3	4, 5, 6	9	10	11
Management	Normally stocked	Overstocked	Understocked	Deferred rotation	Early spring burned	Mid-spring burned	Late spring burned
Number of steers per pasture	12	17	8	36	9	9	9
Acres in pasture	60	60	60	3-60 ¹	44	44	44
Number acres per head	5	3.53	7.5	5	4.89	4.89	4.89
Initial wt., lbs.	697	695	688	692	700	693	697
Final wt., lbs.	967	919	941	905	982	998	1004
Gain per steer, lbs.	270	224	253	213	282	305	307
Daily gain, lbs.	1.74	1.45	1.63	1.37	1.82	1.97	1.98
Gain per acre, lbs.	54	63.46	33.73	42.6	57.67	62.37	62.78

1. Three 60-acre pastures.

Table 9
Yearly Account of Cattle Gains under Different Methods of Grazing Pastures.
Six-Year Summary, 1950-1955.

Gain per Steer in Pounds for the Summer Season of Approximately 150 Days.

Pasture number	1	2	3	4, 5, 6	9	10	11
Management	Normally stocked	Overstocked	Understocked	Deferred rotation grazing	Early spring burned	Mid-spring burned	Late spring burned
1950	221	210	214	205	216	254	230
1951	242	256	290	234	243	265	254
1952	246	209	228	197	251	278	283
1953	226	194	233	197	205	217	234
1954	261	237	236	214	270	271	306
1955	270	224	253	213	282	305	307
Average	244	222	242	210	245	265	269

(14)

Table 10
Trends in Relative Amounts of Native Grasses on Ordinary Upland Range Sites¹ as Affected by Grazing Treatment. Amounts Expressed as Percentage of Total Vegetation.

	Portion of total plant population			
	Decreasers ²		Increaseers ³	
	1950	1955	1950	1955
Overstocked, Pasture 2	%	%	%	%
Moderately stocked, Pasture 1	60	29	26	57
Understocked, Pasture 3	69	56	17	20
Deferred-rotation, Pastures 4, 5, 6	55	53	31	26
	65	44	25	35

1. Rolling uplands with deep, permeable soils constitute the major portion of the trial area.

2. The more valuable forage grasses, mainly bluestems and indiagrass.

3. The less valuable forage grasses, mainly bluegrass, gramas, buffalo-grass, and other short grass types.

A Comparison of Wintering in Dry Lot with Wintering on Dry Bluestem Pasture for Yearling Steers on a Wintering, Grazing, and Fattening Program, 1955-56.

PROJECT 253-4

E. F. Smith, B. A. Koch, R. F. Cox, and G. L. Walker

Yearling steers often are used by Kansas producers in a wintering, grazing, and fattening program or some variation of it. They can usually be purchased at a lower price per hundredweight than steer calves and may be finished with a relatively shorter feeding period in the late summer or fall. They consume large quantities of roughage, which may increase their feed cost considerably in the wintering phase. This study is concerned with lowering the cost of wintering and its effect on future performance, especially with respect to the effect on the carcass produced. The steers will be grazed on bluestem pasture until about July 1, when they will be started on a full feed of grain. They will be marketed when they reach the choice slaughter grade.

Experimental Procedure

Twenty head of good-quality yearling Hereford steers were used in the test. They were purchased from the Lonker Ranch, Medicine Lodge, Kan., as calves and were grazed on bluestem pastures during the summer of 1955. November 16, they were divided into two lots of 10 steers each. The only difference in treatment planned for the two lots is in the method of wintering. The treatment for each lot is as follows:

Lot 11—wintered in dry lot on good-quality roughage supplemented with protein; grazed on bluestem pasture from May to July 1; full fed grain on grass from July 1, until they grade choice.

Lot 12—Wintered on dry bluestem pasture supplemented with protein; grazed on bluestem pasture until July 1; full fed grain on grass from July 1, until they grade choice.

Observations

Since the results of the test will be measured primarily by the yearly performance of the steers, this report is intended only as a progress report on the wintering phase. Wintering in dry lot on good-quality roughage has proved much superior to wintering on dry grass at this stage. The steers wintered on dry grass just about maintained their weight, whereas those in dry lot gained 230 pounds each.

(15)

Table 11

A Comparison of Wintering in Dry Lot with Wintering on Dry Bluestem Pasture for Yearling Steers on a Wintering, Grazing, and Fattening Program.

PROJECT 253-1

Phase 1, Wintering, November 16, 1955, to April 7, 1956—143 days.

Lot number	11	12
	Dry lot	Bluestem pasture
Place wintered	Dry lot	pasture
Initial wt. per steer, lbs.	881	876
Final wt. per steer, lbs.	1114	867
Gain per steer, lbs.	230	-9
Daily gain per steer, lbs.	1.61	-.06
Feed per steer daily, lbs.:		
Soybean oil meal pellets	1.0	1.0
Sorghum silage	64.8	
Dry bluestem pasture		Free choice
Prairie hay	1.6 ¹	1.0 ²
Salt	.09	Free choice
Mineral (bonemeal and salt)	.06	Free choice
Feed cost per steer, ³ \$	37.79	11.37

1. A limited quantity of prairie hay was fed the last three weeks of the test to lot 1.

2. Prairie hay was fed to pasture 12 only when snow covered the grass; a small quantity of alfalfa was fed when prairie hay was not available.

3. See inside back cover for feed prices.

Supplementing Bluestem Pasture After Mid-Summer with Protein for Two-Year-Old Steers, 1955. Three-Year Summary, 1953-55.

PROJECT 253-4

E. F. Smith, F. H. Baker, R. F. Cox, and G. L. Walker

The nutritive value of bluestem pasture usually declines after mid-summer. This study is concerned with the effect of supplementing the grass after mid-summer with protein to determine if it will profitably increase steer gains. This is the third test; the other two tests are reported in Circulars 308 and 320. A summary of the three tests is reported here.

Experimental Procedure

Twenty head of good-quality two-year-old steers were used. They had been wintered and summer grazed on bluestem pasture until this test started. The steers were divided into two uniform lots on the basis of previous treatment and weight. They were grazed on bluestem pasture from August 2 to October 17, 1955, with the following treatment.

Lot 1—No supplement.

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

The steers were rotated on the two pastures each 15 days to minimize differences due to pastures.

Observations

The grass was brown and dry during most of the test; the late summer season was dry. It rained 2.45 inches in July, with 1.3 inches July 1 and .84 inch July 19. No moisture of any consequence was received in August nor in September until September 26 and 27, when 1.35 inches fell.

Feeding the protein supplement increased the gain of each steer only 8 pounds and was not profitable in this test. The steers fed the pro-

tein supplement did not appear to be in any better condition or carry any more bloom than those not fed protein.

Table 12

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

August 2 to October 17, 1955—76 days.

Lot number	1	2
Number steers in lot	10	10
Soybean pellets fed per steer daily, lbs.	0	2
Initial wt. per steer, lbs.	889	894
Final wt. per steer, lbs.	937	950
Gain per steer, lbs.	48	56
Daily gain per steer, lbs.	.63	.74
Gain in wt. attributed to soybean pellets, lbs. per steer	0	8
Total soybean pellets fed per steer, lbs.	0	152
Gain per steer by periods, lbs.:		
August 2 to September 2	19	28
September 2 to October 1	0	17
October 1 to October 17	29 ¹	11

1. Had the September 26-27 rain not come, this gain would probably have been less.

Three-Year Summary, 1953-54-55.

For the three-year average, Table 13, 152 pounds of protein concentrate produced 23 pounds additional gain. On the basis of gain alone, this would hardly be profitable. In two of the three years the steers receiving the protein supplement were judged by a committee of animal husbandmen to be fleshier. It appears, from these tests, that two-year-old steers, supplemented with small amounts of protein in late summer, would have to sell for a higher price compared with non-supplemented cattle to make caking worth while on bluestem pastures.

A study of similar nature is reported in Circular 297; it, too, is a three-year summary for the years 1950-52. Protein supplementation in those tests failed to increase rate of gain.

Table 13

Three-Year Summary. Effect of Feeding a Protein Supplement During the Late Summer to Two-Year-Old Steers on Bluestem Pasture, 1953-55.

August to October—76 days.

Lot number	1	2
Number steers	30	30
Protein fed per steer daily, lbs.	0	2
Initial wt. per steer, lbs.	997	997
Final wt. per steer, lbs.	1066	1089
Gain per steer, lbs.	69	92
Daily gain per steer, lbs.	.91	1.21
Gain in wt. attributed to protein supplement, lbs. per steer	0	23
Total protein fed per steer, lbs.	0	152
Gain per steer by periods, lbs.:		
1st period	35	30
2nd period	19	47
3rd period	15	15