Cottonseed meal(lbs)	120.00	120.00	120.00	153.00	153.00
Atlas silage (lbs.)	900.00	900.00	900.00	1814.00	1666.00
Alfalfa hay (lbs)				224.00	224.00
45—Initial wt. per steer	1136.	1137.	1093.	770.	677.
46—Gain per steer	64.	65.	100.	213.	293.
47—Final wt. pe rsteer	1200.	1202.	1193.	983.	970.
48—Daily gain per steer	1.07	1.08	1.67	1.90	2.62

SUMMARY—Phases 1 through 7

49—Date experiment began	December 5, 1946				
50—Date experiment completed	December 11, 1948			Feb. 18, 1948	
51—Total days on experiment	737	737	737	440	440
52—Initial wt. per steer	411	411	411	410	412
53—Total gain per steer6	789	791	782	573	558
54—Final wt. per steer	1200	1202	1193	983	970
55—Daily gain per steer.	1.07	1.07	1.06	1.30	1.27
56—Total feed consumed per steer:					
Ground shelled corn (bu)	12	12	12	27.4	25.7
Cottonseed meal(lbs)	484	859	620	422	153
Alfalfa hay (lbs)	....	.....	562	226	786
Prairie hay (lbs)	914	910	228	.....	.....
Atlas silage	11,674	7830	900	3740	3592
Oat straw	.....	1285	1024	673	307
Bluestem grass—days	413	413	596	188	188
57—Feed cost per steer:					
Ground shelled corn	16.20	16.20	16.20	65.85	68.98
Cottonseed meal	18.15	32.21	23.25	15.83	5.74
Alfalfa hay	.....	.....	5.62	2.26	7.86
Prairie hay	6.85	6.83	1.71	.....	.....
Atlas silage	37.36	25.06	2.88	11.97	11.49
Oat straw	.....	9.64	7.68	5.05	2.30
Bluestem grass	27.00	27.00	37.00	10.00	10.00
58—Total cost of feed and grass	$105.56	$116.94	$ 94.34	$110.96	$106.37
59—Cost of feed per 100 lbs. gain	13.38	14.78	12.06	19.36	19.06
60—Initial cost per steer.	80.40	80.40	80.40	80.40	80.40
61—Feed cost plus initail cost per steer	185.96	197.34	174.74	191.36	186.77
62—Wt per steer at m'ket	1116	1128	1118	945	930
63—Necessary selling price per cwt. at market to feed cost & initial cost	16.66	17.49	15.63	20.25	20.08
64—Selling price per cwt. at market.	26.50	27.00	27.00	26.50	26.00
65—Selling price per steer at market	295.74	304.56	301.86	250.43	241.80

66—Margin per steer above feed cost and initial cost	109.78	107.22	127.12	59.07	55.03
67—Marketing expense a steer sold at Kansas City	5.68	5.68	5.68	4.41	4.41
68—Shrink in transit:					
Pounds per steer	84	74	75	38	40
Percent	7	6.15	6.28	3.86	4.12
69—Dressing per cent	61.4	62.2	60.1	59.7	58.5
70—Carcass	**	**	**	***	***
Choice					
High					
Average					
Low		1			1
Good					
High				1	
Average		7	1	4	2
Low	3	1	4	3	4
Commercial					
High	7	1	4	1	2
Average				1	1
Low				1	1

*Feed Prices:
Ground shelled corn for lots 1, 2. and 3, $1.35 per bu.
Ground shelled corn for lots 4 and 5, $2.40 per bu.
Cottonseed meal, $75 per ton; alfalfa hay, $20 per ton; prairie hay, $15 per ton; Atlas silage, $6.50 per ton; oat straw, $15 per ton; bluestem grass for 1947, $10 per head for yearlings; bluestem grass for winter of 1947-48, $10 per head; bluestem grass for 1948, $17 per head for two-year-olds.
**Lots 1, 2 and 3 graded by the packer grader.
***Lots 4 and 5 graded by the U. S. Government grader.

Project 253-1: Factors Influencing Profitable Grass Utilization and Sound Pasture Management.

WINTERING YEARLING STEERS ON BLUESTEM GRASS

Experiment II - 1948 - 1949

A. G. Pickett - Ed F. Smith

This current test includes four lots of 10 steers each. The objective is to determine the value of dry bluestem grass as a winter feed for yearling steers. All pastures used for winter grazing had been used the previous summer but were not closely grazed and dry grass was abundant. Steers were given from 12 to 18 acres per head.

EXPERIMENTAL PROCEDURE

Lot 1 - Wintered on bluestem grass with 3 lbs. of soybean pellets per steer every other day.
Lot 2 - Wintered on bluestem grass with a mixture of salt and cottonseed meal, self-fed.
Lot 3 - Wintered on bluestem grass with 6 lbs. alfalfa hay per steer daily.
Lot 4 - Wintered on bluestem grass with 1½ lbs. of soybean pellets per steer daily.

December 1, 1948 to April 18, 1949
138 Days

1—Lot Number	1	2	3	4
2—Number of steers per lot	10	10	10	10
3—Method of feeding	Fed 3 lbs. Soybean Pellets every other day.	Self-fed Cottonseed meal & salt mixed together	Fed alfalfa hay daily	Fed Soybean pellets daily
4—Daily winter ration, lbs.				
Soybean meal	1.5			1.5
Cottonseed meal		2.83		
Salt	ad lib	.89	ad lib	ad lib
Alfalfa hay			6.23	
Bluestem grass	ad lib	ad. lib	ad lib	ad lib
Prairie hay*				
5—Initial weight per steer	745.	755.	755.	749.
6—Gain or loss per Steer	-10.	31.	-6.	9.
7—Final weight per steer	735.	786.	749.	758.
8—Daily gain or loss per steer	-.07	.22	-.04	.06
9—Total feed consumed per steer, lbs.				
Cottonseed meal		391.3		
Soybean meal	210.			210.
Alfalfa hay			860.7	
Bluestem grass	ad lib	ad lib	ad lib	ad lib
Prairie hay	318.	300.	156.	276.
Salt		123.2		
10—Feed cost per steer**	$ 20.27	$ 27.54	$ 19.78	$ 19.89
11—Initial cost per steer.	$ 189.98	$ 192.53	$ 192.53	$ 191.00
12—Initial cost per steer plus winter feed cost	$ 210.25	$ 220.07	$ 212.31	$ 210.89
13—Necessary selling price per cwt. to cover initial cost plus wintering cost.	$ 28.61	$ 28.00	$ 28.35	$ 27.82
14—Appraised value per cwt. on May 7, 1949				

* All lots were fed Prairie hay when snow covered the grass. For the amount see line 9, total feed consumed per steer.

** Feed prices:
Cottonseed meal and soybean meal, $75 per ton; alfalfa hay, $20 per ton; prairie hay, $15 per ton; bluestem grass for winter 1948-49 $10. per head; salt, $10 per ton.

***30 to 40 pounds salt to 100 pounds cottonseed meal.

OBSERVATIONS

1. The steers of all four lots in this test gained up to March 1 and all except lot 4 showed moderately heavy losses during March. Lot 1 lost 67 pounds, lot 2 lost 28 pounds and lot 3 lost 58 pounds per head.
2. For the first 18 days of April the steers made substantial gains.
3. This season's gains were not as large as those of last winter. During the winter of 1947-48 one lot of ten yearling steers which were fed three pounds of cottonseed cake per head every other day, gained 66 pounds per head for the season.
4. Prairie hay was fed only when grass was covered with snow.
5. Lot 2 self-fed the salt-cottonseed meal mixture ate almost twice as much cottonseed meal as was hand fed to lots 1 and 4. This probably accounts for the larger gain in this lot.
6. The limited information available indicates that a steer will eat nearly one pound of salt daily. On this basis it would require 50 to 60 pounds of salt with 100 pounds of meal to limit the cottonseed meal consumption to two pounds or less per steer daily.
7. All steers in this test wintered in strong thrifty condition. No ill effects from the high salt consumption in lot 2 were observed.

Project 253: Factors Influencing Profitable Grass Utilization and Sound Pasture Management.

AMOUNT AND SEASONAL TREND OF GAINS OF YEARLING STEERS ON BLUESTEM PASTURE

A. G. Pickett—Ed F. Smith

One hundred thirty-five yearling steers which had been wintered as calves at Guymon, Oklahoma, on short grass, sorghum bundles, prairie hay and cottonseed cake, were furnished to Kansas State College by the Robbins Ranch of Belvidere, Kansas. These steers were thin in flesh but were thrifty in condition.

Beginning weights were taken after the steers had been at the College about one week. They were fed hay and a small feed of silage and weighed with a normal fill. No protein or other supplement was fed.

The accompanying table and chart shows the gains and the trend of gains by weigh periods.

Effect of Burning Pastures on Gains of Steers

The purpose for which these steers were grazed was to compare the six pastures to be used in future experimental work. The six pastures, numbered one to six inclusive, were burned about April 15 in order to give them all an even start. The odd lot of steers listed as lot seven was grazed on unburned adjoining pasture. There was an abundant growth of old dead grass. These steers on unburned pasture made gains equal to the six lots of cattle on pastures that had been burned.

This represents only a one-year test. It is planned to have the grass project developed so that regular burning tests can be started with the 1950 grazing season.

Protein Content of Bluestem Grass

The accompanying chart shows the protein content of bluestem grass from the Kansas State College pastures during the 1948 grazing season. There appears to be a definite correlation between the protein content and the rate of gain as the grazing season progresses.