

A COMPARISON OF DIFFERENT METHODS OF MANAGING BLUESTEM PASTURE

May 10, 1951, to October 2, 1951—145 days

Pasture number	1	2	3	4	5	6	7	8	9	10
Management	Normally-stocked, burned Apr. 26, 1951	Over-stocked, burned Apr. 26, 1951	Under-stocked, burned Apr. 26, 1951	Deferred and rotated, burned Apr. 26, 1951	Early spring burned Mar. 22, 1951	Medium spring burned Apr. 13, 1951	Late spring burned Apr. 28, 1951	Not burned		
Number head per pasture	18	24	12	54	13	13	13	13	9	
Acres in pasture	60	60	60	3 60-acre pastures	44	44	44	44	139	
Number acres per head	3.3	2.5	5	3.3	3.4	3.4	3.4	3.4	3.51	
Average initial weight, lbs.	518	522	519	522	521	521	521	521	520	
Average final weight, lbs.	760	778	809	756	764	786	780	780	778	
Average gain, lbs.	242	256	290	234	243	265	259	258	258	
Average daily gain, lbs.	1.67	1.77	2.00	1.61	1.68	1.83	1.79	1.78	1.78	
Average gain per acre, lbs.	73	102	58	71	71	78	76	74	74	
Initial cost per steer at \$41.00 per cwt. plus \$15.00 per head for summer pasture	\$227.38	\$229.02	\$227.79	\$229.02	\$228.61	\$228.61	\$228.61	\$228.61	\$228.20	
Average selling price per steer at \$35.00 per cwt.	\$257.95	\$264.25	\$274.75	\$256.55	\$259.35	\$266.70	\$264.95	\$264.95	\$264.25	
Average return per steer	\$ 30.57	\$ 35.23	\$ 46.96	\$ 27.53	\$ 30.74	\$ 38.09	\$ 36.34	\$ 36.34	\$ 36.05	

1 Pasture 10 was stocked with other steers in addition to those reported in this test.

2 The final weight was shrunk 3 percent to obtain a sale weight.

6. There seems to be a greater difference in steer gain between burned and non-burned pastures early in the season than at the close of the grazing season. This difference to date tends to favor the burned pastures. Forage yield tests conducted by the agronomy department over many years showed an early advantage for burned plots, but plots not burned rapidly overtook them, especially in dry summers.

7. The different pastures (with the exception of No. 10) were rated for degree of range use as follows:

Pasture numbers	Degree of range use	Qualitative description
3	Light	Only best plants grazed.
5	Moderate	Most of the range grazed; little or no use of poor plants.
1, 4, 7, 8, 9	Proper	All of the range grazed; primary forage species properly utilized.
6	Close	All of the range plainly shows use and major sections are closely cropped; some use of low-value plants.
2	Severe	Hedged appearance of shrubs and trampling damage; primary forage plants almost completely used; low-value plants carried grazing load.

Ratio of Roughage to Grain for Fattening Steer Calves.

D. Richardson, E. F. Smith, and R. F. Cox

This is a preliminary report covering the first 98 days of this feeding trial which is still being conducted; therefore the reader should bear in mind that the figures are in no way conclusive or complete.

The physical balance or ratio of roughage to concentrates is an important factor to consider in the ration of fattening cattle. Beef cattle serve as one of the principal means of marketing roughage. Since a large amount of roughage is produced throughout the midwest, it is desirable to have information concerning the maximum amount of roughage that can be used in fattening rations consistent with maximum and economical production. This experiment was planned to secure information on the effects of different levels of roughage on average daily gain, feed requirement per unit of gain, quality of finish, selling price, and carcass quality.

The steer calves were started on feed December 22, 1951, and worked up to ratios of roughage to grain as given below. They are being self-fed and will remain on their respective rations for the remainder of the feeding period:

Lot 1—1 pound of chopped alfalfa hay to 1 pound milo grain.

Lot 2—1 pound chopped alfalfa hay to 3 pounds milo grain.

Lot 3—1 pound chopped alfalfa hay to 5 pounds milo grain.

Table 1 contains a summary of the first 98-day results.

Observations

1. The figures on average daily feed consumption do not show the ratios described above. This is caused by including the feed consumed while the steers were being worked up to the desired ratios.

2. The average daily gain by the various lots does not vary greatly at this stage of the trial; however, it is slightly higher in Lot 2.

3. The grain required per hundred pounds of liveweight gain has increased as the level of grain in the ration has increased.

Table 1.—Ratio of Roughage to Grain for Fattening Steer Calves
(December 22, 1951, to March 29, 1952—98 days)

Lot number	1	2	3
Number steers per lot	10	10	10
Average initial weight, lbs.	502	503	504
Average final weight, lbs.	735	748	735
Average gain per steer, lbs.	233	245	231
Average daily gain per steer, lbs.	2.38	2.50	2.36
Average daily feed consumed, lbs.:			
Milo grain	9.43	12.58	12.62
Alfalfa hay	11.88	8.22	7.10
Salt	.05	.05	.04
Feed required per cwt. gain, lbs.:			
Milo grain	396.87	503.46	535.28
Alfalfa hay	499.78	329.10	301.13
Salt	2.16	2.04	1.55
Feed cost per cwt. gain	\$17.37	\$18.22	\$18.76

A Comparison of Rolled, Coarsely Ground, and Finely Ground Milo Grain for Fattening Steer Calves.

R. F. Cox and E. F. Smith

Good to choice quality Hereford steer calves were used in this test. There were three lots, 10 head to a lot, all being fed the same except for the difference in grain preparation. The calves originated in the vicinity of Sonora, Texas. They were maintained on a roughage ration properly supplemented for about six weeks prior to starting on test on December 5, 1950. They were sprayed with B.H.C. for lice. At the start of the test, they were fed all of the sorghum silage they would clean up each day, 2 pounds of alfalfa hay and 1½ pounds of soybean oil meal pellets per head daily.

The grain was started at the rate of 1 pound per head daily and raised about 1 pound per head weekly. When the calves reached a daily grain consumption of 14 to 15 pounds per head, they were placed on a self-feeder and the silage was omitted from the ration and replaced with 3 to 4 pounds of alfalfa hay per head daily and a small amount of prairie hay. The hay and protein supplement were fed in a separate bunk from the self-fed grain.

The rolled milo was dry rolled and appeared satisfactory upon emergence from the roller; however, after sacking and when it was finally fed to the cattle, it was broken into small particles and somewhat powdered. The coarsely ground or cracked milo was the product of a burr mill. A hammer mill was used to prepare the finely ground milo, which was ground to a coarse, mealy mixture.

Observations

All three lots made about the same daily gain. The steers receiving coarsely ground milo consumed slightly more grain and thereby required slightly more grain per 100 pounds of gain than either of the other lots; however, they also graded higher in the carcass and had a

higher dressing percent. The differences present in this test were small.

A Comparison of Rolled, Coarsely Ground, and Finely Ground Milo Grain for Fattening Steer Calves
(Dec. 5, 1950, to July 9, 1951—216 days)

Lot number	6	7	8
Management	Finely ground milo	Coarsely ground milo	Rolled milo
No. steers per lot	10	10	10
Initial weight per steer, lbs.	418	419	418
Final weight per steer, lbs.	899	902	898
Gain per steer, lbs.	481	483	480
Daily gain per steer, lbs.	2.23	2.24	2.22
Daily ration per steer, lbs.:			
Milo	11.59	11.94	10.95
Soybean pellets	1.37	1.37	1.37
Sorghum silage	6.74	7.55	7.36
Alfalfa hay	2.36	2.51	2.45
Salt	.04	.05	.03
Prairie hay	.45	.45	.53
Feed required per 100 pounds gain, lbs.:			
Milo	520.40	533.95	492.58
Soybean pellets	61.68	61.43	61.81
Sorghum silage	304.68	337.47	331.35
Alfalfa hay	105.82	112.22	110.21
Salt	1.97	2.03	1.19
Prairie hay	20.27	20.19	23.96
Cost of feed per 100 lbs. gain	\$ 16.45	\$ 16.92	\$ 15.98
Initial cost of steer @ \$31.50 cwt.	\$131.67	\$131.99	\$131.67
Feed cost per steer	\$ 79.11	\$ 81.72	\$ 76.70
Steer cost plus feed cost	\$210.78	\$213.71	\$208.37
Necessary selling price per cwt.	\$ 23.47	\$ 23.69	\$ 23.20
Selling price per cwt.	\$ 34.45	\$ 34.45	\$ 34.45
Dressing percent	59.5	60.9	59.5
Carcass grades:			
Prime	5	6	1
Choice	5	4	9
(Packer grades)			

Project 222: Fundamental Nutrition Studies of Sorghum Roughages and Grain

Digestibility of Finely Ground, Cracked, and Rolled Milo Grain, 1951.

E. F. Smith and D. B. Parrish

A digestion trial was conducted with 12 steers which were allotted into three lots of 4 steers each. A ration of sorghum silage (Tennessee Orange), soybean oil meal pellets and milo grain, salt and ground lime-