

Experimental Procedure

Twenty head of good quality Hereford steer calves were used in the test. They were a part of the heavy end of a group of 150 calves purchased in the vicinity of Marfa, Texas, for experimental tests. There are two lots, 10 head to a lot, and both lots are being self-fed a ground milo grain and chopped alfalfa hay mixture at the rate of 3 pounds of milo grain to 1 pound of alfalfa hay. Lot 1 has free access to salt, whereas salt is being withheld from Lot 2.

Observations

To date in this test the addition of salt to a fattening ration of ground milo grain and chopped alfalfa hay has failed to increase the rate or efficiency of gain.

The Effect of Withholding Salt on the Growth and Fattening of Steers.

(December 22, 1951, to March 29, 1952—98 days)

Lot number	1	2
Number of steers per lot	10	10
Management	Free access to salt	Feed no salt
Initial weight per steer, lbs.	503	502
Final weight per steer, lbs.	748	744
Gain per steer, lbs.	245	242
Daily gain per steer, lbs.	2.50	2.47
Daily ration per steer, lbs.:		
Cracked milo grain	12.58	12.43
Chopped alfalfa hay	8.22	8.38
Salt	.05	
Feed required per 100 lbs. gain, lbs.:		
Cracked milo grain	503.46	503.51
Chopped alfalfa hay	329.10	339.39
Salt	2.04	

Wintering, Grazing, and Fattening Steer Calves, 1951-52

The Value of Trace Minerals in a Wintering and a Fattening Ration.

Self-feeding Grain in Dry Lot vs. Self-feeding Grain on Bluestem Pasture.

E. F. Smith and R. F. Cox

Introduction

This is a report of the wintering phase of this test. Following this phase the different lots will be grazed together on bluestem pasture and then full-fed grain until they grade choice. One objective of the test is to find out the effect of trace mineralized salt containing iodine, copper, cobalt, iron, and manganese on the performance of steer calves on wintering rations and on a full feed of grain. Another phase of the test is to compare self-feeding grain in dry lot to self-feeding grain on grass for calves handled in the deferred full-feeding program. The system of deferred full-feeding using good quality steer calves consists of three phases: (1) producing 225-250 pounds of gain during the winter; (2) grazing 90 days without grain; (3) full feeding 100 days in the dry lot.

Experimental Procedure

Thirty head of good quality Hereford steer calves are being used in this test in three lots, 10 head to a lot. They were part of a shipment of 150 steer calves from Marfa, Texas. They were received November 8, 1951, and fed silage, prairie hay, and 1 pound of a protein concentrate per head daily until December 22, 1951, when they were started on test. The system of management planned for each lot follows:

Lot 1—wintered on sorghum silage, prairie hay, 5 pounds of ground grain, and 1 pound of 41 percent protein concentrate per head daily, free access to mineral (bonemeal and salt) and salt; bluestem pasture May 1 to August 1; self-fed grain on bluestem pasture after August 1 to choice grade.

Lot 2—wintered on sorghum silage, prairie hay, 5 pounds of grain, and 1 pound of protein concentrate per head daily, free access to mineral (bonemeal and salt) and salt; grazed on bluestem pasture May 1 to August 1; self-fed grain in dry lot after August 1 to choice grade.

Lot 3—wintered on sorghum silage, prairie hay, 5 pounds of grain, and 1 pound of protein concentrate per head daily; free access to mineral (bonemeal and salt) and trace mineralized salt; grazed on bluestem pasture, May 1 to August 1; self-fed grain in dry lot from August 1 until they grade choice.

Observations

No differences due to treatment were apparent between the lots. The difference in gain between Lots 1 and 2 handled identically demonstrates the variability in cattle gains.

Wintering, Grazing, and Fattening Steer Calves

Phase I—Wintering—Value of Trace Minerals in a Wintering Ration.

(December 22, 1951, to April 4, 1952—104 days)

Lot number	1	2	3
Number of steers per lot	10	10	10
Ration	Sorghum silage Prairie hay Milo Cottonseed cake Mineral ¹ Salt	Sorghum silage Prairie hay Milo Cottonseed cake Mineral ¹ Salt	Sorghum silage Prairie hay Milo Cottonseed cake Mineral ¹ Trace mineral Salt ²
Average initial weight, lbs.	444	443	443
Average final weight, lbs.	602	588	594
Average gain, lbs.	158	145	151
Average daily gain, lbs.	1.52	1.39	1.45
Average daily ration, lbs.:			
Ground milo grain	5.11	5.11	5.10
Cottonseed cake	1.00	1.00	1.00
Sorghum silage	20.29	20.34	20.02
Prairie hay	.16	.17	.22
Mineral ¹	.11	.12	.10
Salt	.12	.12	
Trace mineral salt ²			.08

Feed per cwt. of gain, lbs.:			
Ground milo grain	336.08	366.21	351.32
Cottonseed cake	65.82	71.72	68.87
Sorghum silage	1335.42	1458.62	1378.81
Prairie hay	10.44	11.86	15.10
Mineral	8.07	8.55	6.82
Salt	7.09	8.86	
Trace mineral salt			5.73
Feed cost per 100 pounds gain ³	\$17.56	\$19.15	\$18.31

- 1 Contains 2 pounds of steamed bonemeal to 1 of salt.
- 2 Composed of salt, copper, cobalt, iron, manganese, iodine.
- 3 Feed prices used may be found on page 58 of this publication.

Antibiotics in Beef Cattle Rations

D. Richardson and E. F. Smith

Antibiotics are generally accepted as being beneficial in the ration of swine, poultry and young dairy calves. Very little is known about the use of antibiotics in the ration of cattle after they start ruminating. Work has been started to determine the effect of antibiotics in wintering and fattening rations of beef cattle. No conclusion can be made yet, however, the results to date do not show any outstanding harmful or beneficial results.

Feed Prices Used in Beef Cattle Tests, 1951-52

Milo grain, cwt.	\$ 2.80
Cottonseed oil meal, cake or pellets, ton	100.00
Prairie hay, ton	15.00
Alfalfa hay, ton	25.00
Sorghum silage, ton	6.50
Dry bluestem pasture, calves, per head per month50
Dry bluestem pasture, yearlings, per head per month75
Brome pasture, winter, per head per month	1.00
Steamed bonemeal, cwt.	5.00
Trace mineral salt, cwt.	2.00
Salt, ton	12.00

Chemical Analyses of Feeds Used in the 1950-51 Beef Cattle Feeding Trials¹

Feeds	Moisture %	Protein %	Fat %	Fiber %	N-free extract %	Mineral matter %	Calcium %	Phos. %
Soybean oil meal	9.38	43.00	5.0	5.65	31.47	5.50		
Cottonseed oil meal								
Milo grain	12.01	8.63	2.72	2.07	73.11	1.46		
Sorghum silage (Atlas) I	71.72	2.15	.73	7.36	16.32	1.79	.04	.08
Sorghum silage (Tenn. Orange), II	15.73	1.10	.52	8.65	12.06	1.94		
Sorghum silage (Atlas) III	77.24	1.19	.52	7.88	11.44	1.77	.06	.05
Prairie hay	8.67	4.63	1.87	33.34	45.59	6.74	.32	.09
Alfalfa hay (dry grass)	8.99	14.88	1.85	35.96	34.18	6.97	1.20	.39
Bluestem pasture grasses, 1951—dry basis:								
January 1	0	3.44	1.99	36.76	48.22	9.59	.47	.10
March 6	0	3.22	1.95	35.34	51.00	8.49	.38	.03
July 5	0	7.60						
July 20	0	8.43						
August 6	0	6.39						
August 11	0	6.65						
August 17	0	7.24						
August 20	0	8.43						
August 31	0	7.32						
September 10	0	7.89						
September 21	0	5.93						
October 15	0	4.44						
November 1	0	4.20	2.12	33.98	49.87	9.50		
December 29	0	4.16	1.90	34.31	51.52	8.11		
Brome grass, December 11, 1951	4.96	6.75	2.55	34.67	42.08	8.99		

¹ Analyses are reported on an as-fed basis except where noted.