

stone was fed to each lot. Lot 1 received finely ground milo, Lot 2 cracked milo and Lot 3 rolled milo.

An adjustment and preliminary period was followed by a collection period of 10 days. During the collection period, feces were collected for chemical analysis.

The digestibility of dry matter, protein, crude fiber, ether extract and nitrogen-free extract was higher for the rolled milo ration than for the cracked or finely ground milo rations. With the exception of crude fiber the digestibility of the nutrients of the cracked milo grain ration was the lowest of the three rations.

Effect of Rolling, Coarse and Fine Grinding on the Digestibility of Milo Grain

Lot No.	No. of steers	Ration	Av. apparent coefficient of digestibility percent—				N.F.E.
			Dry matter	Crude protein	Ether extract	Crude fiber	
1	4	Fine milo, sorghum silage, soybean pellets, salt, ground limestone	71.97	60.8	72.4	51.0	78.6
2	4	Cracked milo, sorghum silage, soybean pellets, salt, ground limestone	67.60	58.8	68.0	55.0	72.4
3	4	Rolled milo, sorghum silage, soybean pellets, salt, ground limestone	75.80	63.2	73.1	56.8	82.5

Project 68: Factors Influencing the Salt Requirements of Beef Cattle¹

The Effect of Withholding Salt on the Growth and Condition of Steers, 1950-51.

E. F. Smith, D. B. Parrish, and E. J. Splitter

This test was to find what effect the withholding of salt has on the performance of steers on either fattening rations or wintering rations.

Forty-two head of good quality Hereford steer calves were used in the test. There were four lots, 10 head to each lot, except that one lot contained 12 head. Two of the lots were full-fed grain and two of the lots were fed wintering rations. For the two lots receiving wintering rations, the test was terminated May 2, 1951. The two lots on a full feed of grain were fed until July 9, 1951. A feedstuff analysis of the feeds used in the test may be found on page — of this bulletin.

Observations

1. Lot 1, on a full feed of grain and given free access to salt, gained only slightly more than Lot 2, which also was full-fed but from which salt was withheld. There was practically no difference in amount of feed consumed or in efficiency of gain (see table, Lots 1 and 2). Lot 2 sold for less per hundredweight and graded lower in the carcass. On foot, Lot 2 did not appear to be as well finished as Lot 1.

1. This study was supported in part by the Salt Producers' Association of Detroit, Michigan.

2. The gain of steer calves on a roughage (wintering) ration was decreased appreciably when salt was withheld (see table, Lots 3 and 4). The calves given free access to salt consumed slightly more feed and were much more efficient in converting their feed into pounds of beef.

The Effect of Withholding Salt on the Growth of Steer Calves.

December 5, 1950, to July 9, 1951—Lots 1 and 2
December 5, 1950, to May 1, 1951—Lots 3 and 4

1. Lot number	1	2	3	4
2. No. steers in lot	10	10	12	10
3. Management	Full fed		Wintered	
4. Initial weight per steer ..	419	418	419	418
5. Final weight per steer	902	889	529	505
6. Gain per steer	483	471	110	87
7. Daily gain per steer	2.24	2.18	.75	.59
8. Daily ration per steer, lbs.:				
Ground milo grain	11.94	11.92		
Soybean oil meal pellets ..	1.37	1.37	1.00	1.00
Sorghum silage (Tenn. Orange)	7.55	6.87	28.35	27.52
Alfalfa hay	2.51	2.45		
Prairie hay45	.53		
Salt, free access05		.15	
9. Feed required per 100 lbs. gain, lbs.:				
Ground milo grain	533.95	546.82		
Soybean oil meal pellets ..	61.43	62.45	134.09	168.97
Sorghum silage (Tenn. Orange)	337.47	312.87	3788.88	4649.43
Alfalfa hay	112.22	111.81		
Prairie hay	20.19	24.05		
Salt	2.03		19.66	
10. Selling price per cwt., dollars	34.45	34.05		
11. Carcass grades:				
Prime	6	4		
Choice	4	5		
Good		1		

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Preliminary Report

Introduction

This is a progress report on an experiment to be completed this summer, 1952, to find out what effect the withholding of salt has on the growth and fattening of steers.