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Effect of Salt Form and Processing Method¹ on Salt Intake and Beef Cattle Performance

Lyle W. Lomas²

Summary

Processing method (evaporated vs rock) had no effect on salt consumption or weight gain of growing stocker cattle. Steers consumed 2.18 times more loose salt than block salt.

Introduction

Whether to feed beef cattle loose salt or a salt block has been a controversial subject for many years. Cattle with free access to loose salt will generally consume more salt than when salt is in compressed blocks. Many cattlemen disagree as to whether cattle eat enough salt from licking blocks. In an effort to reduce energy and production costs, a compressed rock salt block has been developed. Our study compared cattle performance using rock salt and white evaporated salt, in the loose and block form.

Procedure

Experiment A

Eleven groups of cows were provided free access to both evaporated and rock salt blocks, placed in side by side separate feeders during late winter, spring and summer of 1982. No other source of salt was available. Salt consumption was determined by weighing the blocks.

Experiment B

Fifty-six crossbred steers with an average initial weight of 643 lb were randomly allotted to eight 5-acre brome pastures on May 12, 1982. A 2 x 2 factorial design with two replicates was used to evaluate the following salt treatments: 1) rock salt block, 2) evaporated salt block, 3) rock mixing salt, 4) evaporated mixing salt.

All salt was fed in covered windvane feeders. Consumption was determined weekly by weighing the unconsumed salt. All steers were implanted at the onset of the study with Synovex-S and were fed 150 mg Rumensin in 3 lb dry rolled milo for the first 84 days of the study and 200 mg Rumensin in 4 lb dry rolled milo during the last 28 days.

¹Salt and partial financial assistance provided by Carey Salt, Hutchinson, KS 65701-0322.

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Cattle were rotated among pastures every 14 days and were weighed at 28 day intervals. Initial and final weights were obtained following a 16 hr shrink from feed and water. The study was terminated September 1, 1982 (112 days).

Results

Results of Experiment A are presented in Table 29.1. There was no significant difference ($P>.20$) in average salt consumption between the evaporated and rock salt blocks.

Results of Experiment B are summarized in Table 29.2. Processing method (evaporated vs rock) had no effect ($P>.20$) on cattle weight gain or salt consumption. Salt form (loose vs block) had no effect on steer performance ($P>.20$) but cattle consumed 2.18 times more loose salt than block salt ($P<.05$).

This research indicates that although grazing steers consumed more loose salt, intake from blocks is sufficient.

In addition, there is no difference between consumption of rock salt or the more expensive evaporated salt, when fed either loose or in blocks.

Table 29.1. Cattle Preference for Rock and Evaporated Blocks When Both Were Available

Location	No. of Days	No. of Cows	Salt Consumption (oz/hd/day)	
			Evaporated	Rock
A	139	34	.26	.19
B	93	19	.26	.32
C	94	18	.21	.28
D	94	25	.14	.14
E	131	13	.37	.47
F	131	21	.20	.23
G	69	15	.92	.84
H	62	14	.65	.65
I	131	35	.42	.22
J	131	13	.63	.51
K	131	16	.30	.39
AVERAGE	110	20	.40 ^a	.39 ^a

^a($P>.20$)

Table 29.2. Effect of Salt Form and Processing Method on Salt Intake and Beef Cattle

	Performance		
	Evaporated	Rock	Means
Loose			
Daily gain (lb/head)	1.24	1.40	1.32
Daily salt intake (oz/head)	1.78	1.67	1.72 ^a
Block			
Daily gain (lb/head)	1.38	1.26	1.32
Daily salt intake (oz/head)	.72	.86	.79 ^b
Means			
Daily gain (lb/head)	1.31	1.33	
Daily salt intake (oz/head)	1.20	1.22	

^{a,b}Values in the same column with different superscripts differ significantly ($P<.05$).