

Table 35

Three-year summary—effect of stilbestrol implants on steers on blue-stem pasture, 1956-1957-1959.

May to October—165 days.

Pasture number	Treatment	Number of steers	Av. daily gain	Pasture treatment
1	Control	26	1.24	Normally stocked
	24-mg. implant	18	1.47	
2	Control	34	1.24	Over-stocked
	24-mg. implant	22	1.49	
3	Control	18	1.27	Under-stocked
	24-mg. implant	12	1.47	
4	Control	81	1.08	Deferred and rotated
	24-mg. implant	51	1.22	
9	Control	18	1.40	Early-spring-burned
	24-mg. implant	14	1.50	
10	Control	19	1.40	Mid-spring-burned
	24-mg. implant	13	1.73	
11	Control	19	1.41	Late-spring-burned
	24-mg. implant	13	1.72	
Total and average:				
	Control	215	1.29	
	24-mg. implant	143	1.51	

The Value of Supplementary Trace Minerals¹ in a Fattening Ration. Project 253-2.

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This is the sixth experimental trial conducted to determine the value of added trace minerals in a cattle fattening ration. The previous experiments were reported in Kansas Circulars 279, 308, 335, 358, and 371. No response was obtained in these experiments when trace minerals were added to high roughage rations or sorghum grain fattening rations. The addition of trace minerals to a corn-fattening ration has shown favorable results. Ground limestone has been in all fattening trials to furnish adequate calcium.

Experimental Procedure

Forty head of good-to-choice Hereford yearling heifers were divided into four lots, 10 in each lot, on the basis of weight and previous treatment. The heifers were purchased near Fort Davis, Texas, as calves the fall of 1958. They were wintered and summer grazed on bluestem pastures near Manhattan before the experiment.

Lot 13 was fed a control ration of corn, protein supplement, prairie hay, and ground limestone. Lot 14 received the same ration with added trace minerals. Lot 15 received a control ration of sorghum grain, protein supplement, prairie hay, and ground limestone. Lot 16 received the same ration with added trace minerals.

The grain was self-fed and the prairie hay was fed daily in quantities readily eaten. The daily allowance of ground limestone was mixed with the soybean meal and fed once daily.

The trace minerals were supplied in a premix added to the soybean meal to furnish these quantities in milligrams per head daily: cobalt, 1.25; copper, 3.65; iodine, 1.97; iron, 46.13; manganese, 56.3; and zinc, 3.42.

Observations

The addition of trace minerals to the corn ration of the heifers in lot 14 improved feed efficiency and increased the daily gain an average of 0.56 pound per head daily over the heifers in lot 13. The addition of trace minerals to the sorghum grain ration of the heifers in lot 16 increased

the daily gain an average of 0.33 pound per head daily, with a slight increase in feed efficiency over lot 15. The carcasses in general were about the same; however, carcasses from lot 14 and lot 16 (trace mineral lots) graded slightly higher.

This was the first trial in which a response has been obtained by adding trace minerals to a sorghum grain fattening ration.

Table 36

The value of supplementary trace minerals in a fattening ration. July 25, 1959, to November 6, 1959—104 days.

Lot number	13	14	15	16
Number heifers per lot	10	10	9 ¹	9 ²
Treatment	Corn	Corn plus trace mineral	Sorghum grain	Sorghum grain plus trace mineral
Av. initial wt. per heifer, lbs.	608	599	604	605
Av. final wt. per heifer, lbs.	850	900	864	900
Av. gain per heifer, lbs.	242	301	260	295
Av. daily gain per heifer, lbs.	2.33	2.89 ³	2.50	2.83 ³
Av. daily ration per heifer, lbs.:				
Ground corn, self-fed	15.3	15.2		
Ground sorghum grain, self-fed			17.3	18.2
Soybean oil meal	1.5	1.5	1.5	1.5
Prairie hay	4.5	4.5	4.9	4.7
Ground limestone	0.1	0.1	0.1	0.1
Salt, free choice				
Trace minerals	No	Yes	No	Yes
Total feed per cwt. gain, lbs.:				
Corn	655	526		
Sorghum grain			691	643
Soybean oil meal	65	52	60	48
Prairie hay	193	155	196	166
Feed cost per cwt. gain ⁴	\$18.45	\$14.79	\$18.05	\$16.58
Total feed cost	\$44.64	\$44.51	\$46.93	\$48.92
Selling price per cwt. gain ⁵	\$22.22	\$22.35	\$22.53	\$22.48
Dressing percentage	57.2	57.3	58.0	57.3
Carcass grades, USDA				
Low choice	0	0	0	2
High good	2	6	3	1
Av. good	5	3	2	4
Low good	2	1	3	2
High standard	1	0	1	0
Av. degree marbling score ⁶	7.8	7.3	7.6	7.3
Av. size ribeye, sq. in.	9.76	10.39	10.16	9.92

1. One heifer was removed due to founder.

2. One heifer removed due to unthriftiness.

3. Gains significantly greater at the .05 level for lot 14 over 13; and lot 16 over 15.

4. See inside back cover for feed prices.

5. Selling price was computed on the basis of carcass grade, weight, and carcass price: Choice, \$40 per cwt.; good, \$39; standard, \$37.50.

6. Scores for degree of marbling: small amount, 7; slight amount, 8.

1. Supplied by Calcium Carbonate Company, Chicago, Ill.