Micronized Corn and Urea-liquid Supplements in Growing Rations for Calves

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Summary

In growing rations containing fescue hay, micronized corn + urea-liquid gave: (1) 20.5% faster gains and 11.5% more efficient gains than cracked corn + urea-liquid and (2) similar rate and efficiency of gains as cracked corn + soybean meal.

Introduction

Previous research at Kansas State University with high-grain rations showed micronized milo supporting a 16% more efficient gain than dry rolled milo when fed to finishing steers. In other trials reported here (Micronized Milo, Urea and Prairie Hay for Growing Beef Heifers) calves fed 4 to 5 lbs. of micronized milo gained 17% faster and 16% more efficiently than calves fed 5 lbs. of dry rolled milo. In the same trials, micronized milo plus a urea-liquid supplement supported slightly better performance than dry rolled milo plus a soybean meal supplement.

Our objective in this trial was to compare micronized and cracked corn in hay rations for growing calves.

Experimental Procedures and Results

Fifty Hereford, Angus and HXA steer and heifer calves were allotted by breed, sex and weight to six pens. Two pens were assigned to each of the following corn and supplement treatments:

(1) cracked corn + soybean meal (SBM)
(2) cracked corn + urea-liquid
(3) micronized corn + urea-liquid

All calves were fed twice daily and received long fescue hay to appetite, 4 lbs. of the appropriate corn and 2 lbs. of the appropriate supplement. Both supplements[3] contained 32% crude protein on an as-fed basis.

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[3]Soybean meal supplement: rolled milo, 674 lbs.; soybean meal, 1186 lbs.; dicalcium PO_4, 54 lbs.; salt, 42 lbs.; trace minerals, 8 lbs.; molasses, 35 lbs. and vitamin A, 1 lb. Urea supplement: urea mix (100% CP), 514 lbs., cane molasses, 390 lbs.; calcium lignin sulfonate, 423 lbs.; trace minerals, 2 lbs.; 10-34-0, 70 lbs.; distillers' solubles, 600 lbs. and vitamin A, 1 lb.

The 105-day trial was conducted at the Southest Kansas Branch Experiment Station from December 29, 1975 to April 12, 1976 (Table 23.1).

The overall performance of the calves was low, reflecting poor quality fescue hay.

Calves fed micronized corn + urea-liquid tended to gain faster and more efficiently than calves fed cracked corn + urea-liquid. Calves receiving micronized corn + urea-liquid or cracked corn + SBM had similar performance. SBM supported better performance than urea-liquid when each was fed with cracked corn. Calves fed urea-liquid rations consumed less feed (P<.05) than those fed SBM.

Table 23.1. Performance of calves fed cracked or micronized corn and SBM or urea-liquid supplements.

	Cracked corn + SBM	Cracked corn + urea-liquid	Micronized corn + urea-liquid
No. of calves	16	18	16
Initial wt., lbs.	509	497	501
Final wt., lbs.	615	578	599
Avg. total gain, lbs.	106	81	98
Avg. daily gain, lbs.	1.01	.78	.94
Avg. daily feed, lbs.[1]			
fescue hay	7.92	6.98	7.53
corn	3.40	3.40	3.60
supplement	1.78	1.10	1.10
Total	13.10[a]	11.48[c]	12.23[b]
Feed/lb. of gain, lbs.[1]	13.06	14.72	13.02

[1] 100% dry matter basis.

[abc] Means on the same line with different superscripts differ significantly (P<.05).