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Sources of roughage and milo for finishing steers

Abstract

Steers fed corn silage gained significantly ($P < .05$) faster than steers fed any other roughage. Wheat silage ranked second with gains significantly ($P < .05$) more than gains from milo stover silage, alfalfa hay or corn silage-alfalfa hay combination. Corn silage also produced the most efficient gains, which were significantly ($P < .05$) more efficient than gains from milo stover silage. Feeding 100% of the grain portion of finishing rations as high moisture milo resulted in 13% faster ($P < .05$) and 13% more efficient ($P < .05$) gains than feeding equal parts of high moisture milo and dry rolled milo.

Keywords

Report of progress (Kansas State University. Agricultural Experiment Station); 291; Cattlemen's Day, 1977; Beef; Roughage; Milo; Steers

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Sources of Roughage and Milo for Finishing Steers

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Summary

Steers fed corn silage gained significantly ($P < .05$) faster than steers fed any other roughage. Wheat silage ranked second with gains significantly ($P < .05$) more than gains from milo stover silage, alfalfa hay or corn silage-alfalfa hay combination. Corn silage also produced the most efficient gains, which were significantly ($P < .05$) more efficient than gains from milo stover silage.

Feeding 100% of the grain portion of finishing rations as high moisture milo resulted in 13% faster ($P < .05$) and 13% more efficient ($P < .05$) gains than feeding equal parts of high moisture milo and dry rolled milo.

Introduction

Previous feedlot research at Kansas State University has consistently shown high moisture milo superior to dry rolled milo, however, these earlier studies did not include a combination of high moisture and dry milo. This trial was designed to see if blending of the two sources of milo would improve steer performance.

Corn silage was superior to milo stover silage as a source of roughage in finishing steer rations last year (Prog. Rpt. 262). Additional information was needed to compare other sources of roughage such as alfalfa hay, wheat silage or a mixture of alfalfa hay and corn silage.

Experimental Procedure

One hundred yearling steers averaging 864 lbs. were allotted by weight to 20 pens of five steers each. Four pens were assigned to each of five roughage treatments: (1) corn silage, (2) wheat silage, (3) milo stover silage, (4) chopped alfalfa hay, and (5) equal parts on a dry matter basis of corn silage and chopped alfalfa hay. Ten pens (two from each roughage treatment) were assigned to each of two milo treatments: (1) 100% of the grain portion of the ration as field harvested high moisture milo and (2) equal parts of high moisture milo and dry rolled milo.

The 82-day trial began January 11 and ended April 2, 1976. Composition of the finishing rations are shown in table 24.1. Rations were formulated to 11.5% crude protein, mixed twice daily and fed free-choice. The high moisture milo was ensiled whole in an oxygen-limiting silo and all milo was rolled before being mixed into the ration.

Individual weights were taken at the beginning and end of the trial

after steers were without feed or water 15 hours. Final live weights were adjusted to a 60.9 dressing percent. Carcass data were obtained at Dugdale Packing Co., St. Joseph, Mo.

Results

Effects of roughage treatments on feedlot performance are shown in table 24.2. Steers fed corn silage gained faster ($P<.05$) than steers fed any of the other four roughage treatments and tended to be the most efficient. Steers fed the milo stover silage rations consumed the most dry matter daily but were the least efficient. Blending corn silage and alfalfa hay had no beneficial effect in this trial. Wheat silage was a satisfactory roughage, ranking second to corn silage, and producing faster gains ($P<.05$) than the remaining three roughages.

Effects of the two milo treatments on steer performance are shown in table 24.3. Steers fed 100% of the grain portion of the ration as high moisture milo gained 13% faster ($P<.05$) and 13% more efficiently ($P<.05$) than the group fed equal portions of high moisture and dry rolled milo.

No significant differences were observed in dressing percentages or other carcass measures evaluated.

Table 24.1. Composition of finishing rations.

Ingredient	Source of Roughage				
	Corn silage	Milo stover silage	Wheat silage	Alfalfa hay	Alfalfa hay & corn silage
Milo, %	77.0	77.0	77.7	79.8	78.6
Roughage, %	13.0	13.0	13.0	13.0	13.0
Supplement, ¹ %	5.0	5.0	5.0	5.0	5.0
SBM, %	5.0	5.0	4.3	2.2	3.4

¹Lbs. per ton, air-dry basis; rolled milo, 1650; limestone, 282; salt, 100; molasses, 40; trace mineral, 10; antibiotic, 14; vitamin A, 4.4.

Table 24.2. Performance of finishing steers fed indicated roughages.¹

Item	Corn silage	Milo stover silage	Wheat silage	Alfalfa hay	Corn silage and alfalfa hay
No. steers	20	20	20	19	20
Initial wt., lbs.	865	865	865	861	864
Final wt., lbs. ²	1077	1047	1062	1042	1040
Avg. total gain, lbs.	212	182	197	180	176
Avg. daily gain, lbs.	2.60 ^a	2.22 ^c	2.41 ^b	2.20 ^c	2.14 ^c
Daily D.M. intake, lbs.	20.50 ^a	21.35 ^a	20.88 ^a	18.91 ^b	18.94 ^b
Feed/lb. of gain, lbs.	7.99 ^a	9.68 ^b	8.76 ^{ab}	8.69 ^{ab}	8.84 ^{ab}
Dressing %	61.4	60.9	60.6	61.3	60.6

¹82 days (January 11 to April 2, 1976).²Adjusted to a 60.9% dress.^{a, b}Means on the same row with different superscripts differ significantly (P<.05).Table 24.3. Performance of finishing steers fed indicated milo treatments.¹

Item	Milo Portion of the Ration	
	100% high moisture	50% high moisture 50% dry rolled
No. steers	50	49
Initial wt., lbs.	864	864
Final wt., lbs. ²	1065	1042
Avg. total gain, lbs.	201	178
Avg. daily gain, lbs.	2.46 ^a	2.17 ^b
Daily D.M. intake, lbs.	19.94	20.29
Feed/lb. of gain, lbs.	8.17 ^a	9.41 ^b
Dressing %	61.0	60.8

¹82 days (January 11 to April 2, 1976).²Adjusted to a 60.9% dress.^{a, b}means on the same row with different superscripts differ significantly (P<.05).