Large-package and Ensiled Milo Stover for Maintaining Pregnant Cows

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Summary

One hundred-two mature Simmental and Hereford cows in mid to late gestation were used to compare three maintenance rations during an 83-day trial: (1) milo stover silage, (2) large package milo stover (stacks and bales), and (3) forage sorghum silage. Each breed was represented by a pen of 17 cows in each of the forage groups. Cows fed forage sorghum silage gained significantly more than cows on other rations. Cows receiving milo stover silage lost heavily early because amounts were inadequate. They gained when stover silage was increased. Cows fed ad libitum on dry milo stover lost weight during the last 30 days of the trial.

Introduction

Increased production costs and depressed grain and livestock prices have increased interest in using corn and milo crop residues for beef cow systems. Recent development of large, package-harvesting systems add another possibility.

Previous work here showed milo stover silage worth 85 to 90 percent as much as forage sorghum silage for maintaining cows in late gestation. Work at other stations with corn residues indicated superior performance from ensiled residue over dry harvested corn residue. This trial evaluated milo crop residue for winter cow maintenance and compared harvesting methods by cow performance.

Experimental Procedure

Milo stover and forage sorghum silages were harvested after a killing frost in October, 1975, with a two-inch recutter screen. Milo stover silage was ensiled in a trench silo; forage sorghum silage, in a 10 x 50 ft. concrete stave silo. Dry milo stover was packaged in late October with a Hesston Stakhand 10 (stack weight 2000 lbs) and Hesston 5600 Baler (bale weight 1200 lbs.).

One hundred two mature cows in mid gestation maintained in drylot year-round were allotted by weight and condition into three forage treatment groups. Cows were divided by breed into two pens per forage treatment during the 83-day trial and were weighed on and off trial with no feed before weighing.

Forage and milo stover silages estimated to be 67 and 57 percent TDN, respectively, were fed at maintenance levels. Dry stacks were fed ad libitum through collapsable feeding panels. A standard cow supplement

was fed daily[a] (1.25 lbs. first 53 days; 1.5 lbs. final 30 days). All cows received 2 lbs. of corn per head daily the first 20 days.

Results and Discussion

Cow performances are shown in Table 13.1. During the first 53 days, Hereford and Simmental cows fed dry milo stover gained 29 and 17 lbs., respectively. Both groups lost weight and condition the last 30 days with corresponding decreases in dry matter intake.

Cows receiving forage sorghum silage were adequately maintained early and gained weight during the latter part of the trial, so they gained significantly more than other groups through the total trial.

Milo stover silage cows lost weight (-71 and -97 lbs.) the first 53 days. We think we overestimated stover silage energy and underfed dry matter the first 53 days. Feeding the silage close to ad libitum the last 30 days brought dry matter intake up to adequate levels so both groups were gaining at the trial's close.

Late winter weight loss by cows on dry stover may reflect: (1) decreased intake, (2) increasing cow requirements, (3) decreasing stack nutrients as storage time increased, and (4) decreasing palatability due to mold or low moisture.

The mild winter provided ideal feeding conditions and minimized stack waste to l0-15 percent. Results indicate that milo stover silage could adequately maintain cows in late gestation if fed near ad libitum. Dry stacked milo stover may require supplemental energy in late gestation due to depressed intake of the drier material.

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[a] Supplement formulation lbs/ton: SBOM 1070; rolled milo, 491, salt, 200; bone meal, 134; urea, 64; Z-10 trace mineral, 20; aurofac 10, 15; vitamin A, 6; wet molasses, 40.

Table 13.1. Daily intake and cow response to forage sorghum silage and ensiled or dry harvested milo stover.

	Cow treatment groups					
	Dry stacked milo stover		Milo stover silage		Forage sorghum silage	
	Hereford	Simmental	Hereford	Simmental	Hereford	Simmental
No. of cows	16	18	17	17	17	17
Average starting weight, (lbs.)	1009	1172	999	1171	1013	1172
Average starting condition[b]	5.5	5.7	5.4	5.7	5.4	5.7
November 20 to January 12 (53 days)						
Dry matter intake (lbs.) daily	23.5[a]	24.2[a]	15.2	15.6	13.5	13.9
Weight change (lbs.)	29	17	-71	-97	14	-7
Condition change[b]	-.1	.15	-1.0	-.3	.0	.2
January 13 to February 12 (30 days)						
Dry matter intake (lbs.) daily	18.5	18.4	20.6	21.4	11.6	12
Weight change (lbs.)	-28	-40	79	37	42	37
Condition change[b]	-.3	-.65	.35	.35	.0	.05
Summary						
Total weight change (lbs.)	1	-23	8	-60	56	30
Total condition change[b]	-.4	-.5	-.65	.05	.0	.25
Calf birth weight (lbs.)	67	84	75	91.0	75	90
% cycling at breeding[c]	81.5%		86.7%		90%	

[a] For dry stacks, disappearance is assumed as intake (waste estimated at 10-15%).

[b] Condition score is an average visual appraisal by three men with 1 = extremely thin and 10 = extremely fleshy.

[c] Represents percentage of cows remaining in the herd that cycled from May 20 to June 20.

Table 13.2 . Compositions of the roughages fed cows in dry lot.

Item	Milo stover silage	Dry harvested milo stover		Forage sorghum silage
		bales	stacks	
Dry matter, %	29.7	63.8	65.0	29.0
		%, dry matter basis		
Crude protein	5.2	5.0	5.1	7.6
Crude fiber	29.6	29.2	33.0	25.0
Ether extract	1.4	2.2	2.0	1.9
Ash	14.2	13.0	10.9	8.1
TDN[1]	59.0	58.0	56.2	62.2

[1] TDN calculated from crude fiber.