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Excreta silage for maintaining pregnant cows and heifers

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Excreta Silage for Maintaining Pregnant Cows and Heifers

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Summary

Preliminary trials the summer of 1975 tested the value of excreta silage for maintaining pregnant cows and heifers. Ingredients in the excreta silage were wheat straw, cattle excreta, corn, and molasses.

Eighty mature cows were divided into three lots and received either excreta silage, alfalfa haylage, or $\frac{1}{2}$ excreta silage and $\frac{1}{2}$ alfalfa haylage as sources of roughage for 59 days (July 25 to September 22). Cows receiving excreta silage tended to gain more than cows on haylage or $\frac{1}{2}$ haylage and $\frac{1}{2}$ excreta silage.

Twenty-nine, sixteen-month old, pregnant, part Simmental heifers were divided into two lots. One group received excreta silage the other, haylage, as roughage for 52 days (July 25 to September 15). Their gains did not differ significantly.

Introduction

Alternative sources of feed for cows include waste products. R. L. Vetter *et. al.* at Iowa State University successfully ensiled dry corn stalks and cattle excreta. Others have demonstrated the nutritive value of cattle excreta, so we tested silage made from wheat straw and cattle excreta to obtain information on methods of preparing the silage, costs, storage, palatability, and animal response.

Experimental Procedure

Fresh excreta for the silage was collected by twice a week scraping the concrete floor where steers were fed for slaughter. Dry excreta came from the same concrete floors but had been stockpiled for as long as three months. Baled wheat straw was chopped to two- to four-inch lengths. Composition of the excreta silage is given in table 19.1. The ingredients were mixed in a Harsh Mobile Mix and blown into a 10-foot-diameter, upright, concrete stave silo.

Eighty mature, lactating, pregnant cows (48 part Simmental and 32 Hereford) were randomly divided by age and breed into three lots July 25, 1975. All calves were weaned early (August 6). Cows continued on test until

September 22. Rations for the cows and their responses are given in table 19.2.

Twenty-nine pregnant, sixteen-month-old, part Simmental heifers were divided into two lots July 25, 1975. Rations fed the heifers and their responses are listed in table 19.2. The trial ended September 15, 1975.

Results and Discussion

The excreta silage had a pungent, acid odor with little excreta odor. Cows and heifers readily ate the silage.

Mature cows on excreta silage gained 78.3 lbs; on haylage, 30.9 lbs.; and on $\frac{1}{2}$ haylage and $\frac{1}{2}$ excreta, 16.4 lbs. during the 59-day trial (table 19.2). Rations were not equal in dry matter, nitrogen, or calories.

Heifers on excreta silage gained 58.9 lbs. compared with 47.1 lbs. by those on haylage during the 52-day trial (table 19.2).

Results of the two trials indicate that costs if excreta silage are similar to costs of ensiling forage sorghum, corn, or alfalfa. No problems were encountered with storage or palatability. More such studies are planned.

Table 19.1 Composition of excreta silage

Ingredient	% as mixed		lbs./ton	
	Fresh excreta	Dry excreta	Fresh excreta	Dry excreta
Excreta	55.0	28.0	1100	560
Wheat straw	18.4	18.8	368	376
Cracked corn	3.3	3.2	66	64
Wet molasses	6.6	7.0	132	140
Water	16.7	43.0	334	860

Table 19.2 Daily intake and response of cows and heifers

	Daily intake (lbs)					Gain (lbs)	
	Excreta silage	Haylage	Corn	Supplement ^a	Dry matter ^b	Total	A.D.G.
Cows							
Lot 1 (27 head)	60	--	3.4	1	22.5	78.3	1.33
Lot 2 (27 head)	34.8	15.5	3.4	1	23.0	16.4	.28
Lot 3 (26 head)	--	30.8	3.4	1	20.4	30.9	.52
Heifers							
Lot 1 (15 head)	45	--	2	1	16.7	58.9	1.13
Lot 2 (14 head)	--	34.3	2	1	17.1	47.1	.91

^a Supplement formulation lbs/ton: SOM, 1070; rolled milo, 491; salt, 200; bone meal, 134; urea, 64; Z-10 trace mineral, 20; aurofac 10, 15; vitamin A, 30,000, 6; wet molasses, 40.

^b Percentages of dry matter: excreta silage, 31; haylage, 50; corn, 88; supplement, 90.