

The Effect of Partial Wilting on the Feeding Value of Forage Sorghum Silage, 1963-64 (Project 623).

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The object of this experiment was to evaluate forage sorghum (cut at the same physiological stage of maturity) ensiled with varying moisture contents. All forage was cut during two days but ensiled at three different times: immediately after cutting; after drying in the field about 24 hours; and after drying in the field about 48 hours.

The forage was cut at a satisfactory silage stage, when the few seed heads present were approaching maturity and when the entire plant was about 30 percent dry matter.

A Hesston three-row, 500 windrower and a Gehl forage harvester with pick-up attachment were used to cut, then to pick the material up, head first. The harvester was set to cut the forage to half-inch lengths but most of it was longer.

Silage was stored in upright concrete stave silos 12 feet in diameter and 25 feet high. They may have been too small for best preservation of the drier forage. Spoilage was greatest in the forage dried 24 hours; least in that cut and ensiled immediately.

DeKalb FSIA sorghum was grown on the Animal Husbandry farm. Production was about 7 tons, lightly seeded, leafy forage per acre. Rain-fall recorded for the year was about 18 inches, 14 inches less than normal.

Two trials are included in this report. In one the heifers were group fed; in the other they were individually fed. The calves used in both trials were good-to-choice Herefords from near Fort Davis, Texas, assigned to experimental diets on a random-weight basis, within each trial.

Some variation in gain between treatments occurred, but it likely could not be assigned to the experimental diets. The amount of forage required to produce a pound of live-weight gain was lowest for the calves fed forage ensiled immediately after cutting (30 percent dry matter), and increased with drying time. The quality of forage stored and storage conditions confounded results.

Table 34
The effect of partial wilting on the feeding value of forage sorghum silage.

	Trial 1 (Cows fed Nov. 27, '63, to March 18, '64—111 days)				Trial 2 (Individually fed Dec. 12, '63, to March 18, '64—96 days)			
	Regular silage cut and ensiled immediately	Wilted 24 hours	Wilted 48 hours	Free choice	Regular silage cut and ensiled immediately	Wilted approx. 24 hours	Wilted approx. 48 hours	Free choice
Group	5	4	6		1	2	3	
No. heifers per group	10	10	10		4	4	4	
Initial wt. per heifer, lbs.	432	435	430		284	283	285	
Daily gain per heifer, lbs.	1.44	1.44	1.23		1.36	1.32	1.46	
Av. daily ration, as-fed basis, lbs.:								
Silage—DeKalb FSIA	36.8	33.2	30.6		23.6	18.3	21.3	
Soybean oil meal	1.25	1.25	1.25		1.25	1.25	1.25	
Dicalcium phosphate	0.10	0.10	0.10		0.10	0.10	0.10	
Salt								
% dry matter in silage	29	38	40		29	38	40	
Forage dry matter consumed per head daily, lbs.	10.67	12.61	12.24		6.84	6.95	8.52	
Forage dry matter per lb. of gain, lbs.	7.41	8.76	9.95		5.03	5.27	5.84	