Texas Dairy Matters
Higher Education Supporting the Industry

Processing Sorghum For Improved Performance

Ellen Jordan, Ph.D.
Extension Dairy Specialist
Texas A&M AgriLife Extension Service
The Texas A&M University System

Depending upon price and availability producers may choose to include sorghum in their herd's ration in place of corn. On paper, the two might appear very comparable, but sorghum requires processing to obtain similar production responses.

Steam flaking corn or sorghum has been used extensively in finishing diets for beef cattle since at least the 1980s. In the 1990s, researchers at the University of Arizona conducted a number of trials comparing steam flaked corn and sorghum in dairy rations. Steam-flaking corn or sorghum increases both rumen and intestinal starch digestibility. The increase in available starch can then result in increased volatile fatty acids, an energy precursor.

Theurer summarized 24 trials comparing dry-rolled to steam-flaked sorghum. The results across those trials are shown in Table 1.

Table 1: Summarization of dairy cow performance from 24 trials when fed either dry-rolled or steam-flaked sorghum (adapted from Theurer).

Item	Dry-rolled sorghum	Steam-flaked sorghum	P≤
DMI, kg/d	25.6	25.1	0.23
Milk, kg/d	35.6	37.4	0.01
Protein, %	2.95	3.02	0.01
Fat, %	3.20	3.03	0.01
FCM/DMI	1.39	1.46	0.01

Although intake didn't change between treatments, milk production was improved, as was production efficiency as evaluated by fat corrected milk produced for dry matter intake.

When comparing steam flaked corn to steam flaked sorghum, Theurer also summarized three trials and found that dry matter intake, 3.5% FCM, protein or fat percent, and FCM/DMI did not differ (Table 2).

Table 2: Comparison of steam flaked sorghum (SFS) and steam flaked corn (SFC) (adapted from Theurer).

Item	SFS	SFC	P≤
DMI, kg/d	25.9	26.1	0.82
3.5% FCM, kg/d	34.6	34.4	0.93
Protein, %	2.96	3.00	0.58
Fat, %	3.19	3.11	0.45
FCM/DMI	1.35	1.33	0.69

When considering whether to substitute corn for sorghum, similar lactation performance can be obtained with steam flaked sorghum and steam flaked corn. Greater milk production and milk protein yield is the reward for steam-flaking corn or sorghum compared to either steam rolling or drying of those grains. Thus when the price and availability of sorghum makes it an attractive ingredient, make sure you steam flake it to insure similar production to corn grains.