

F E E D I N G T E S T S

with

Threshed Peanut Hay for Dairy Cattle

By MAGNAR RONNING, A. H. KUHLMAN, H. W. CAVE,
AND WILLIS D. GALLUP



Bulletin No. B-400
May 1953



OKLAHOMA AGRICULTURAL EXPERIMENT STATION
Oklahoma A. & M. College, Stillwater
A. E. Darlow, Director Louis E. Hawkins, Vice Director

Feeding Tests

with

Threshed Peanut Hay for Dairy Cattle

By MAGNAR RONNING, A. H. KUHLMAN,* H. W. CAVE and
WILLIS D. GALLUP

Departments of Dairying and Agricultural Chemistry Research

Green, leafy peanut hay is equally as nutritious as good quality alfalfa hay, feeding trials at this Station indicate.

The tests show that when threshed peanut hay has been handled in a way that it is highly colored, leafy, relatively free from dirt, and not frost damaged, it can be as valuable a feed for dairy cattle as good quality alfalfa hay. Feeding value of peanut hay may be much lower if the crop has not been handled carefully.

How the Tests Were Made

Thirty-four milking cows were used in a series of three 90-day double reversal trials to determine the feeding value of threshed peanut hay as compared with good quality alfalfa hay.

In the first of the three trials each hay was fed at the rate of 1.6 pounds per 100 pounds bodyweight. The concentrate mixture consisted of yellow corn, 44 percent; oats, 22; wheat bran, 22; 43 percent protein cottonseed meal, 11; and salt, 1.

In the second and third trials hay was fed at a higher rate, 1.8 pounds per 100 pounds bodyweight, and the cottonseed meal was eliminated from the concentrate mixture.

In all three trials the concentrate was fed according to milk production requirements and bodyweight maintenance.

Results

The results of these trials in terms of average daily production of 4 percent fat-corrected milk are presented in Table 1. As an average

* Deceased.

of three trials, the daily milk production was 23.2 pounds on the rations containing threshed peanut hay and 22.6 pounds on the rations containing alfalfa hay. The small difference in rate of milk production between the two rations is no more than might be expected from variations between individual cows in feed consumption and production ability and efficiency.

The feeding quality of threshed peanut hay may be extremely variable. Some factors which affect quality are methods of harvesting, curing and handling the crop, soil conditions at time of harvest, and frost damage.

The peanut hay used in these trials was handled in such a way as to prevent loss of valuable nutrients. The crop was harvested before a frost, and the plants with attached nuts were placed in tall cylindrical piles, about stakes. After curing in these stacks for two to six weeks, the crop was threshed and the vines baled. When handled this

Table 1.—The Value of Threshed Peanut Hay for Milk Production as Compared to Good Quality Hay.

Test number	Ration	Number of cows	Average daily feed intake		Average daily 4 percent corrected milk
			Hay	Concentrates	
1	Alfalfa hay	10	13.8	10.5	16.8
	Peanut hay		13.6	10.3	16.4
2	Alfalfa hay	12	18.2	14.1	30.4
	Peanut hay		18.8	13.6	30.1
3	Alfalfa hay	12	17.7	10.5	20.5
	Peanut hay		17.4	10.5	23.1
Average					
	Alfalfa hay	34	16.6	11.7	22.6
	Peanut hay		16.6	11.5	23.2

Table 2.—Average Composition of Threshed Peanut Hay.
(Percent)

Description	Dry matter	Protein	Fat	Fiber	Nitrogen free extract	Ash
Highly colored, leafy*	90.0	10.0	3.3	20.9	47.2	8.6
Frost damaged**	89.9	9.0	3.6	23.4	41.3	12.6

* Nine analyses over three-year period.

** Single analysis.

way the plants retained their green color well, and there was a minimum of shattered leaves.

When peanut plants are cured in the field in windrows there is considerable loss of nutrients through the shattering of leaves and weathering. Hay obtained from a crop handled this way will usually contain a high proportion of dirt and sand, depending on the soil moisture conditions and amount of dirt on the nuts at time of harvest. The nutrient content of hay prepared this way may be as much as 25 percent lower than hay prepared by the method used in this experiment. Decreased palatability due to dirt content, excessive amount of stems, and mustiness would lower the feeding value further.

Hay Prepared from Frost-damaged Plants

A small amount of peanut hay was prepared from frost-damaged plants. This hay was dark-brown to black in color. Although the hay was readily consumed, its total digestible nutrient content was estimated to be lowered by 5 to 10 percent because of the frost damage.

Average composition of good quality, leafy, highly colored threshed peanut hay and of similar hay damaged by frost is presented in Table 2. Values for the good quality hay are based on three-year analyses; for the frost-damaged hay, one analysis.

