

# AGRICULTURAL NEWS LETTER

FEDERAL RESERVE BANK OF DALLAS

Vol. 10, No. 10

DALLAS, TEXAS

October 15, 1955

## MILO FOR EGG-LAYING RATIONS

Milo can replace corn, wheat, and oats in the scratch grain of a laying flock without a reduction in egg production, according to tests conducted by L. N. Berry, poultry husbandman with New Mexico College of Agriculture and Mechanic Arts. The tests — which were made from November 1 to September 30 during four consecutive seasons, beginning in 1949 — provided the following additional results.

- ◆ Either white milo or red milo can be used in the scratch grain.
- ◆ When milo replaces yellow corn, additional vitamin A should be supplied in the mash.
- ◆ Oats should not be replaced with milo when cannibalism is a problem.
- ◆ The cafeteria feeding system is satisfactory with white Leghorns or cross-breeds but may not give as good results with New Hampshires.
- ◆ Egg production was as high when a 20 percent protein mash was fed as it was when a 26 percent protein mash was used.

In one of the tests, the feeding values of white milo, red milo, and a grain mixture containing 40 percent yellow corn, 40 percent wheat, and 20 percent oats were compared. Three pens of 75 single-comb white Leghorn pullets were used in the experiment. The pullets in each pen were fed a different scratch grain but were given an identical 20 percent protein mash and received the same management.

The results of a 2-year test, shown in the accompanying table, indicate that egg production from the three scratch grains was so nearly equal that one grain cannot be considered superior to the others. Since there is no significant difference in egg production, the relative costs of various grains used in the scratch feeds should be an important consideration in their selection. Feed costs per hen and the cost per dozen of eggs were lower for the pullets fed either white or red milo scratch grain than for those given the grain mixture; moreover, the returns from the hens fed white milo were greater than from those given red milo.

Two feeding systems were compared in the tests. In one, the grain was hand-fed daily

### FEEDING TESTS WITH WHITE MILO, RED MILO, AND GRAIN MIXTURE NOVEMBER 1, 1951-SEPTEMBER 30, 1952, AND NOVEMBER 1, 1952-SEPTEMBER 30, 1953

#### Two Groups of Single-Comb White Leghorn Pullets

Ration	Average egg production per hen	FEED CONSUMPTION PER HEN (Pounds)			FEED COST		Total value of eggs produced	Income over feed cost
		Scratch grain	Mash <sup>1</sup>	Total feed consumption	Per hen	Per dozen eggs		
White milo .....	203.1	40.8	39.8	80.6	\$3.43	\$2.026	\$9.69	\$6.26
Red milo .....	199.1	38.6	43.2	81.8	3.53	.2128	9.50	5.97
Mixed grain <sup>2</sup> .....	206.3	44.7	37.2	81.9	4.07	.2368	9.85	5.78

<sup>1</sup>All received a 20 percent protein mash.

<sup>2</sup>40 percent corn, 40 percent wheat, and 20 percent oats.

and was limited so that the amount did not exceed greatly the weight of the mash consumed by the flock. In the other method of feeding — usually called the cafeteria system, both the grain and the mash were kept before the birds at all times. In theory, birds fed on the cafeteria plan will balance their own diets. Experience has shown, however, that they tend to eat more grain than mash because the grain seems to be more palatable.

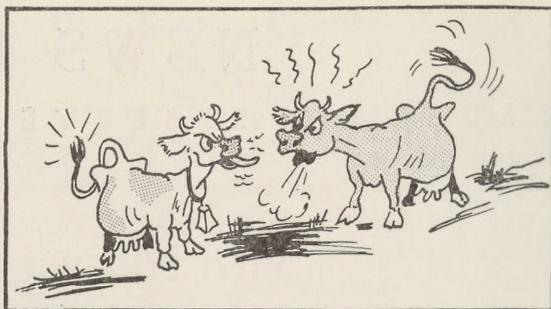
There may be some disadvantage in feeding milo as the only grain in the scratch feed of the laying flock, according to Professor Berry. When oats are omitted from the ration, the hens' tendency to pick feathers increases, and serious losses may occur in flocks where cannibalism is prevalent. In these situations, milo can be used to replace corn and wheat, but oats should be kept in the ration. A mixture of 20 percent oats and 80 percent milo may provide a suitable grain mixture in cases of severe cannibalism.

Milo contains very little vitamin A; consequently, if yellow corn is replaced with milo, the vitamin should be added to the mash portion of the laying flock's diet to maintain the health and production of the hens. Also, the yolks of eggs produced from hens fed entirely on milo will not be as yellow as those produced from hens fed yellow corn; however, this difference in yolk color probably is not enough to cause objections from consumers.

### Is Bossy Socially Acceptable?

Milk and butterfat production can decline as much as 5 percent when a totally strange cow suddenly is added to a well-established herd, according to animal behavior studies conducted by M. W. Schein, Federal-State collaborator at the Dairy Field Station of the United States Department of Agriculture, Jeanerette, Louisiana.

The newcomer creates excitement in the herd — marked by butting, kicking, and threatening — until she is accepted and a



new social order is established. The adjustment may take many days, and the milk production of the herd suffers. As the fighting tapers off and peace is restored, milk production increases gradually. The period of readjustment depends largely upon the individual aggressiveness of the cows involved.

The new cow may upset the social structure of the entire herd. When the armistice finally is concluded, the newcomer may dominate all the others or may be at the lowest social level.

The studies also show that a cow absent only a few days causes little unrest upon rejoining the herd. She immediately takes her previous social position, and milk production is not interrupted noticeably. However, if a cow is absent 6 to 10 months, herd readjustment may take from 1 to 3 days. The time required depends, to some extent, upon the cow's previous social position. Such readjustment is marked by threats rather than fighting, and there is little change in milk production.

Mr. Schein indicates that the individual dairyman will have to determine whether temporary upsets in the herd are important. For example, a dairyman may not want to place totally strange cows in his herd when milk prices are seasonally high and every pound of milk and butterfat counts. The dairyman who raises his own replacements may rarely have a serious problem. Close observation of the herd and selection of the best time to make changes will be required to avoid some temporary losses in production when strange cows are added to the herd.

## Aerial Farming

Since 1919, when aircraft was first used experimentally to apply insecticides, its use in agriculture has increased until, today, 1 in every 6 acres of cropland in the Nation is treated with a dust, spray, fertilizer, or other chemical applied from the air, according to a report of Texas A. & M. College.

Private flying firms operate more than 7,000 planes annually, which apply about 644,000,000 pounds of dust-type chemicals and 80,000,000 gallons of sprays.

## New Test for Brucellosis

The test for brucellosis (Bang's disease) recently adopted by the United States Livestock Sanitary Association and approved by the Agricultural Research Service is so sensitive that it usually detects the presence of the disease in mixed milk from 12 or even more cows when only one of the animals is infected. It is now possible to screen entire areas to detect infected herds quickly and economically.

As a result of the whole-milk (or creaming) test, control of brucellosis can be accelerated greatly. In this test, samples of milk from a herd may be taken at the milk plant. If the milk test indicates that there is brucellosis infection in the herd, then the milk from individual cows can be tested. On the other hand, if the samples do not reveal brucellosis, testing of the individual cows will be unnecessary.

Since some cows will be dry at test time, the herd should be ring-tested every 4 to 6 months until it is certain that the milk from all the cows in the herd has been tested.

When a cow has brucellosis, her body produces antibodies (agglutinins) to fight the infection. The cream-ring test is used to detect the presence of these antibodies in the milk of diseased cows.

Under farm conditions, milk from several cows usually is sent in the same container to the dairy plant. A small sample of the herd's milk is taken, and the organism that causes brucellosis is added. The antibodies in the cow's milk make clumps around the disease-producing organism, which previously has been stained blue. As the cream rises, the clumps are carried to the top of the test tube, where they form a bluish-purple ring. Clumps are not formed and no bluish-purple ring appears in milk from disease-free cows as they do not produce the antibodies.

## New Tomato Variety



Texto 2, a new high-yielding green-wrap tomato variety, has been developed by the Texas Agricultural Experiment Station for use in south-central, central, and east Texas. The variety does not appear to be adapted to the Lower Rio Grande Valley or Winter Garden sections of Texas.

Texto 2 usually will outyield Rutgers, which has been the standard commercial variety since its introduction. Increased yields of as high as 100 percent were obtained in the tests, and gains of 15 to 25 percent were common.

Other outstanding characteristics of Texto 2 are as follows.

- ◆ Resistance to fusarium wilt and collar rot.
- ◆ Tolerance to stem cracking and blossom-end rot.
- ◆ Good foliage protection.
- ◆ Firm, smooth fruit.
- ◆ Good color in green-wrap and ripe stages.

Texto 2 seed should be available through commercial seed houses in time for the 1956 spring-planted crop.

## Bulk Milk Handling

The individual dairyman should consider carefully whether the returns from the dairy enterprise can be increased enough to offset the cost of changing from the use of cans to the bulk tank system, according to R. E. Burleson, Extension dairy husbandman with Texas A. & M. College.

The purchase price and cost of installing a tank, plus interest charges on the investment, are among the first factors to be considered. In many cases, the wiring system in the dairy barn will need to be changed to take care of the relatively large compressor used on most bulk tanks. In addition, the farm lane or driveway must be maintained in good condition to support the weight of the tank truck.

On the other hand, bulk handling of milk may save time in the dairy barn and will eliminate the physical strain of handling 10-gallon cans of milk. There should be a reduction in the amount of milk lost because of less handling. Lower electricity costs and a reduction in hauling rates are other advantages that may result from the bulk handling system.

If the plant presently buying milk from the dairyman plans to shift from the use of cans to the bulk tank method, the producer may have to install a bulk handling system or sell to another milk plant. The individual dairyman will need to estimate the effect of these alternatives on his income and choose the method which seems most profitable for his operation.

Mr. Burleson suggests that the producer considering installation of a bulk tank system check with dairymen who are using this method. He then will be in a better position to evaluate the merits of the system on his farm.

## Calves Prefer to Squeeze

Calves would rather squeeze between two posts than bend their backs to get under a

low board on a creep-feeding pen, according to Bill Zmolek, Extension livestock specialist with Iowa State College.

A fence built 10 feet from the feeder on all sides should have several openings through which calves can squeeze. The openings may be made with posts set 16 inches apart and braced to keep larger animals from spreading them and slipping through. A 16-inch space will be large enough to allow calves weighing up to 600 pounds to enter the creep-feeder.

## Publications

New Mexico Agricultural Experiment Station, State College:

*A Comparison of Birdsfoot Trefoil and Ladino Clover in an Irrigated Pasture Mixture*, Press Bulletin 1128, by Harbour Jones.

*Effect of Fertilizers and Micro Elements on Alfalfa Hay Yields*, Press Bulletin 1139, by H. E. Dregne.

*A Formula for Selection of High-Producing Sheep*, Press Bulletin 1131, by P. E. Neale and W. D. McFadden.

*Effect of High and Low Vacuum Milking Machines on Udder Health and Milk Removal*, Bulletin 394, by Robert Porter, D. D. Miller, and S. R. Skaggs.

*Coastal Bermudagrass in Southern New Mexico*, Press Bulletin 1133, by M. L. Wilson, C. E. Watson, and Glen Staton.

*Plant Spacing Experiments with American-Egyptian Pima S-1 Cotton in New Mexico*, Press Bulletin 1134, by A. R. Leding and John R. Cotton.

Copies of the releases may be obtained by request to the publishers.

The *Agricultural News Letter* is prepared in the Research Department under the direction of J. Z. ROWE, Agricultural Economist.