

ity of new infections. Otherwise, the majority of new infections would advance to a greater degree of severity, possibly causing severe damage to the secretory tissue before detection during the ensuing lactation.

In the infused cows which did develop infections during the dry period or during the first month of lactation, the same species of common mastitis producing organisms were isolated as were present in the herd prior to initiation of this experiment. There was no evidence of an increase in the occurrence of the less common species of bacteria which occasionally cause mastitis.

Considering only cows free of mastitis at 4-10 days after calving, infusion before the dry period did not appear to influence susceptibility to infection during the first month of lactation. During this period, there was a similar percentage of new infections in cows which had been infused during the previous dry period and control cows (10.8 vs. 8.7 percent, respectively). New infection rate in the treated and control quarters was 3.6 and 2.2 percent, respectively. No evidence was obtained in the present study to support the idea that untreated quarters which possess non-pathogenic bacteria at drying-off may have a lower rate of new infection than treated quarters in the ensuing lactation.

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## Studies on Wheat Pasture Flavor in Milk

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### Story in Brief

Unmanaged handling of dairy cows grazing wheat pasture will permit milk to be produced containing an undesirable flavor and odor. Feeding sorghum silage at the rate of two percent of body weight just prior to grazing the wheat pasture for two hours had the effect of slightly reducing the intensity of the wheat flavor in the milk. This method of handling the feeding program was compared to feeding the silage after the wheat-grazing period and after the evening milking. The wheat flavor was not completely eliminated by feeding silage at either time. Feeding

silage prior to grazing may have only influenced the total amount of wheat forage consumed.

More study on measuring the amount of wheat forage consumed is being implemented in an attempt to relate the off-flavor in milk with blood and rumen constituents. Continued laboratory work is being directed toward a practical field testing system for the evaluation of the amount of wheat-produced off-flavor.

## Introduction

Wheat pasture forage is an important dairy cattle feed crop in Oklahoma and the Southwest. This crop cannot be completely pastured though, as it will cause the milk produced by cows using this forage to have a "fishy" odor and taste. This off-flavor, caused by trimethylamine in the milk, is severe enough to cause rejection of milk by dairy processing plants.

While it is true that there are other off-flavor problems possible at the farm, it has been reported by the Producers Association in Oklahoma that approximately 25 percent of the rejected milk was "wheat flavored" this past November, December, and January. The occurrence of wheat flavored milk was less during the early winter grazing season of 1974 than last year, possibly because of improved herd management by the producers or different climatic conditions for wheat during this growing season. The most severe period for wheat flavored milk is expected during February and early March.

In previous work at the Oklahoma station, the length of time that cows grazed wheat pasture influenced the intensity of wheat flavor in their milk. In trials early in 1974, feeding of grain prior to grazing wheat forage had no effect upon flavor intensity when compared to not feeding the grain prior to grazing.

The purpose of this work was to determine whether feeding silage to cows at different times relative to wheat pasture grazing would influence the intensity of wheat flavor in the milk.

## Materials and Methods

Twelve Holstein cows that had freshened in July or August of 1974 were divided into three groups at random. All groups were fed silage at the rate of 2 percent of body weight. Grain was fed at the rate of 1.5 percent of body weight, and alfalfa hay at the rate of 0.5 percent of body weight. All groups were fed one half their grain ration at 4:00 a.m. and all their hay at 8:00 a.m.



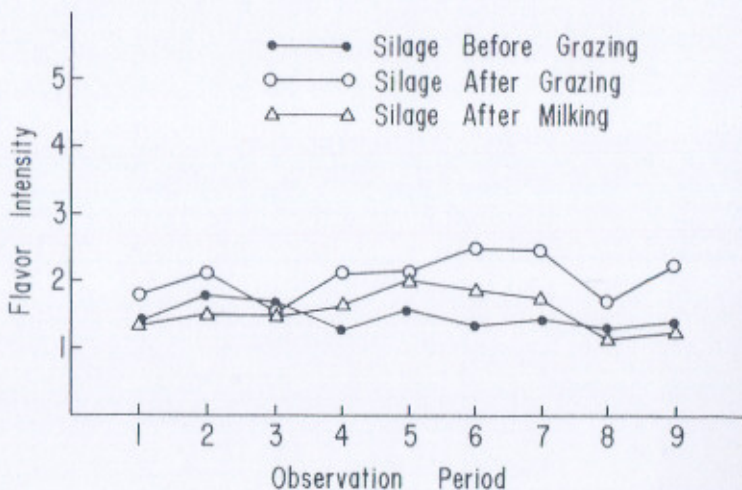


Figure 1. Average wheat flavor intensity in milk from cows grazed on wheat pasture, 1974-75 trials.

The variable treatments were as follows: Group number I was fed its total silage and the balance of its grain ration just before grazing. Group number II was fed its silage and the balance of its grain after grazing, and group number III was fed its silage and the balance of its grain immediately after the evening milking. All cows were put on good quality wheat pasture at 1:00 p.m. and allowed to graze for two hours. After a two hour delay, all cows were milked and samples of milk taken. Approximately 20 hours later, these cooled samples were divided into two equal portions and randomized for tasting by three trained milk flavor judges. Their scoring system was: 1 = no detectable wheat flavor, 2 = slight flavor, 3 = distinct flavor, 4 = strong flavor, 5 = very strong flavor. Sampling periods were approximately one week apart.

## Results and Discussion

Average intensity of the wheat flavor in the milk was only moderate during most of this trial period (October 31, 1974-January 9, 1975). This was in contrast to a similar period a year ago at this station. It would appear that less wheat flavor developed in milk from the cows fed silage after milking, than in milk from cows fed silage after grazing the wheat forage. Cows fed silage just prior to grazing produced milk with less wheat flavor than those fed silage after grazing, but their flavor scores

were more erratic. There may be a connection between cow capacity and urge to graze at the time of feeding, rather than the kind of feed, that influenced the amount of wheat flavor in the milk. In further tests involving different silage feeding times the amount of wheat forage consumed is being determined, to resolve this question.

As yet, there is not a satisfactory "field testing kit" devised that can be truck transported and driver operated to assist the driver in making the decision on whether a tank of suspected wheat flavor milk is acceptable or not. This is very difficult to do because the taste "threshold" for the compound responsible for the flavor, trimethylamine, is quite low, i.e. 3 ppm. Nevertheless, our laboratories are continuing their efforts to devise a practical small testing system.

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## Comparison of Finely Ground and Micronized Sorghum Grain for Dairy Cows

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### Story in Brief

Since grain comprises a large part of the feed cost for dairy cows, it is important to determine whether processing by different methods will improve its feeding value. In this trial, sorghum grain processed by fine grinding was compared to grain micronized to different degrees.

Yield and composition of milk was similar for cows fed grain processed by fine grinding or micronizing. In particular, micronized grain had no consistent effect on milk fat as one or more cows in each treatment group had lower fat tests than usually expected.

### Introduction

In previous feeding trials, micronized sorghum grain was found to be essentially equal to finely ground or steam rolled grain in terms of milk yield by dairy cows. However, there was some evidence of depressed fat tests when micronized grain was fed. For this reason, the trial reported last year and the current one were designed as continuous type