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MILK FLAVOR QUALITY ON THE FARM

H. A. Roberts

Introduction

Milk consumption is influenced by the quality and flavor of the milk a person drinks. Today the consumer evaluates milk solely on its taste and keeping quality. Since the flavor of milk cannot be improved after it leaves the dairy farm, it is of the utmost importance to produce milk with the best flavor quality possible.

Milk is a highly perishable food and must be produced under conditions that will ensure keeping quality. Generally speaking, dairymen are doing a good job of producing high quality milk but we need to be aware that problems may occur with feeding, cow health, cleaning, sanitizing and general handling of the milk.

It is important to know what is good tasting milk and then use this standard to produce top quality milk free of off flavors.

Following are brief discussions regarding some of the milk flavor problems that still exist today, with suggestions on how to reduce these problems.

Feed Flavor

Feed flavor continues to be one of the major milk flavor problems. With a little care, this difficulty can be avoided.

Causes: This flavor defect is caused by the cow eating or inhaling odors of strong feeds such as certain grasses, corn silage, green forage, and others just prior to milking. Also a sudden change in feeding routine can cause this problem.

Prevention: The best way to prevent feed flavor in milk is to withhold any objectionable feed for approximately 2 hours before milking. Some very strong, objectionable feeds should be withheld for up to 4 hours before milking. When changing feeding routine, do so gradually over a period of a few days.

Rancid Flavor

This defect is characterized by a soapy, bitter taste and a strong odor in the late stages of development. Rancidity can cause many flavor problems and is very difficult to control.

Causes: A number of circumstances can cause this defect, making it difficult to trace. A late-lactation or low-producing cow could be the major problem. Only one of these cows could cause this flavor defect in the herd's bulk milk. The way the milk is handled is another source of the problem. Excessive agitation, foaming, freezing, high blend temperatures, and improper installation and operation of milk handling equipment are some of the possible causes.

Prevention: Remove the low-producing or late-lactation cow from the herd. Check for proper installation of the milk handling equipment. Handle milk in the best possible manner to prevent some of the causes listed above.

High Acid and Malty Flavor

These defects are not as common as others, but they can cause some serious problems. High acid will produce a sour or acid taste and a strong odor. Malty defect will be noticed mainly by its strong malty odor. Both of these defects are caused by high bacterial counts in the milk.

Causes: These defects are both caused by poor cooling practices and/or dirty equipment.

Prevention: Equipment that is properly cleaned and sanitized using recommended cleaning procedures is a must. Cooling the milk to 40°F or below (but not freezing) as soon as possible after milking and holding at cold temperatures until it is picked up is important. Poor refrigeration equipment or failure to turn on refrigeration for any length of time could cause these problems.

Unclean Flavor

This is a flavor defect that develops from a change in the bacterial flora in raw milk. A large population of psychrotrophic bacteria (those that grow at refrigeration temperatures) could cause this defect.

Causes: Improperly cleaned and sanitized milk handling equipment is the usual cause of this problem. Strong odors or a cow with ketosis may also be responsible.

Prevention: Clean and sanitize all milk handling equipment prior to use.

Other Flavor Defects

Oxidized defect: This defect is noticed only in winter months or during dry lot feeding. To prevent this problem, feed green feed. Supplementing feed with Vitamin E may help reduce this problem. Many times, only one or two cows may cause the defect.

Flat defect: This is milk with low solids, resembling milk that has had water added. Dairymen need to evaluate their feeding programs and be sure water is not added to the milk.

Salty defect: Milk will have a salty taste. This defect is caused by late lactation cows or cows that may have mastitis. Such cows should be removed from the herd.

It is highly recommended that dairymen work closely with their county agent, fieldman, and extension personnel at the University to help guarantee quality milk for the consumer. Consistently high quality milk is no accident. To produce it requires constant effort.



Dr. Ike Jeon injecting a sample in the gas-liquid chromatograph