

Texas Dairy Matters

Higher Education Supporting the Industry

MILK QUALITY TESTS

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Milk quality bonuses represent a significant amount of income to dairy producers. During periods of low milk prices, milk quality bonuses may even be the difference between making and losing money on a dairy operation. Understanding the different tests used to measure milk quality and the factors affecting these tests assists with management strategies to insure that milk meets the quality standards.

Individual milk cooperatives use different tests and standards to determine when producers qualify for milk quality bonuses. However, there are some standard tests that many milk cooperatives use. The most common tests used to determine milk quality are somatic cell count (SCC), standard plate counts (SPC), preliminary incubation counts (PIC), lab pasteurized counts (LPC), and coliform counts.



The SCC is a measure of body cells and white blood cells present in milk. High SCC indicates the presence of infections in the cow's udder. Somatic cell counts are related to the health and cleanliness of the cows and the cleanliness of the housing conditions.

Standard plate counts estimate the number of aerobic (oxygen loving) bacteria present in the milk sample. The samples will be incubated at 90 degrees F for 48 hours. The SPC has been traditionally used to determine the bacteria counts in raw milk. Numerous factors affect the SPC including milking conditions, equipment sanitation, and sample handling.

Preliminary incubation counts measure the survival of bacteria in milk when the sample is incubated for 18 hours at 55 degrees F. The PIC is a measure of the hygiene practices on the farm operation and is an indicator of the shelf life of milk.

In contrast to the low incubation temperatures used for the PIC test, the LPC determines the bacteria that can survive being heated to 145 degrees F for 30 minutes. The LPC count is mainly affected by the cleanliness and sanitation of milking equipment and by milking hygiene.

Coliform bacteria are a group of gram-negative, rod shaped bacteria that can survive in aerobic or anaerobic conditions (either with or without oxygen). Although fecal coliforms are measured in a coliform test, the presence of coliforms does not necessarily indicate fecal contamination. However, fecal contamination is often a source of the coliforms. The coliform test indicates the quality of the hygiene and sanitation practices during milking and milk handling processes.

Although the health and cleanliness of the cows needs to be a primary concern, don't forget to check the cleanliness and sanitation procedures of the milking equipment. Tests such as the SPC, PIC, LPC, and coliform will increase if the milking equipment is not being cleaned properly.

Milk quality bonuses represent an opportunity for dairy operations. Check with your milk cooperative to find out their requirements to receive milk quality bonuses. In the meantime, remember to pay specific attention to the cleanliness of the cows, milk handling, and milk sampling equipment to insure that you earn the most money possible for your milk.