

COLIFORMS

Coliform bacteria are usually found in dung and soil and sometimes in water supply. However, coliform grades are usually the result of poor milking machine cleaning. Coliform bacteria are easily killed by hot water. Once coliform bacteria are in the plant they will grow rapidly if the milking system is not clean. Hygienic milking and cleaning procedures are required to prevent and control coliform bacteria.

Rapid growth of coliform bacteria (if present in the milk supply) will occur if the milk is not cooled to 7°C within 3 hours of the completion of milking and held at or below this temperature.

To test for coliform bacteria, milk is spread on an agar plate. This is then incubated for 24 hours and the colonies growing on the plate are counted.

Control Measures

1. Follow recommended cleaning procedures:
 - Coliform bacteria are easily killed by hot water and for an effective kill you require water temperatures above 72°C for at least two and a half minutes. Therefore hot wash temperatures require regular monitoring.
 - Use detergents at the correct concentrations as both the acidic and alkaline environment created by acid and alkaline detergents will discourage bacteria growth.
 - Some 'problem' waters (such as hard water) require extra detergent. Your detergent representative should be able to determine the detergent and quantity you should be using.
2. Regularly check the milking machine and milk tank for visible deposits. Coliforms will not survive if there is no food source present for them to live on.
 - Cleaning solutions must reach all plant surfaces, e.g. top of the receiver, milklines and the underside of the agitator. It is important to monitor areas that do not effectively clean during the normal wash cycle. Clean these areas manually if necessary.
 - Always make sure the last wash through the milk system contains a sanitiser and then leave to drain.
3. Check that the primary cooling (milk 18°C or less into the milk tank) and the refrigeration system brings milk to 7°C within 3 hours of the completion of milking.
4. Prepare cows adequately for milking. Remove soil and dung if present but don't over-wet the udder.
5. Use clean water for plant cleaning. Water from open storage, such as troughs, dams and streams may have high numbers of coliform bacteria present. If the water is found to be high in coliforms, it should be treated.

6. Keep the milking area under the cows free from mud and dung. Wash the clusters if they fall on the floor, and deep them clean at all times.
7. Keep the receiver airline, test buckets and test bucket hoses clean.
8. Replace all rubber, which comes into contact with milk at least once a year.

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