



## Thermotolerant Bacteria

Thermotolerant bacteria are heat resistant bacteria that can survive pasteurisation and grow through cheesemaking and ultimately ending up in final product. They affect product quality and can hinder the production of ingredients for sensitive applications such as infant nutrition. Because of their ability to withstand pasteurisation temperatures, the initial numbers in milk must be low. A thermotolerant level of 500 cfu/ml or less is necessary in milk to ensure that it is fully suitable for processing.

### Source of Thermotolerants:

- Thermotolerant are commonly associated with some source of contamination – levels can be higher in wet or extremely dry weather.
- Commonly found in the environment, dust, in soil, airborne, bedding, faeces of cows.
- Present in deposits on milking machines and bulk tanks.
- Cracked/old rubberwear is an ideal environment for bacteria to harbour, where they are protected from hot water and chemicals.

### Steps to Reduce Thermotolerant Bacteria

1. Wash & dry cows teats to prevent thermotolerant bacteria getting into the milking machine in the first place.
2. Keep the cow's environment clean, dry and free from accumulations of waste silage and slurry to avoid contamination of teats and reduce bacteria levels. Maintaining roadways and gaps, as well as cleaning collecting yards, passageways and cubicles daily will also reduce bacteria.
3. Replace old or perished rubberwear – regular inspection of rubberwear is vital.
4. Check your claw pieces regularly by opening them to ensure there is no build up – this will tell you whether they are getting enough water, if the water is hot enough, and if your detergents are effective.
5. Check your hot water is hot enough and of sufficient volume (9 litres min per unit) to really clean your milking equipment.
6. If using a liquid detergent, use a high concentrate caustic powder once a week.
7. Increase descaling frequency due to heightened risk at housing.
8. After you descale, rinse and then do a detergent wash immediately, to ensure no resettlement of bacterial build up.
9. Check that vacuum lines are clean.
10. Ensure milk is cooled to 3-4°C within 30 mins of milking finish.

## Lactose/Late Lactation Milk

Lactose is a quality indicator of the processability of late lactation milk (the lower the lactose the poorer the quality) When lactose levels fall below a certain threshold (4.2%) the milk is difficult to process.

In late lactation, the lactose content in milk declines, coinciding with the decline in milk production. This problem is even more pronounced in spring calving herds where all the cows have calved in a 12-week period and they enter into late lactation at the same time.

To maintain milk lactose levels in late lactation it is recommended to monitor yields of cows and dry off any cows producing less than 8 litres/day. Cows with high SCCs also produce low lactose milk at all stages of lactation, these cows should also be dried off earlier to help maintain lactose levels but also to manage elevating SCCs.