

What is Thermoduric Bacteria?

Thermoduric bacteria can survive pasteurisation similar to yeasts and moulds. They are an organism that lives naturally in the environment around us, such as the silage, bedding, teat skin, water, soil and air.

If we look at the milking process, thermoduric bacteria exist on the internal surfaces of the bulk tank and traditional milking machines as well as in robotic milking systems.

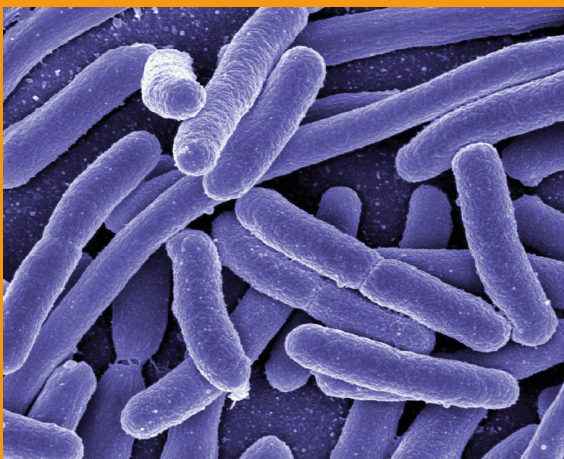
Thermoduric bacteria are specific heat resistant bacteria that can affect milk quality and the shelf life of products from milk.

If left unchecked they will compromise the milking equipment hygiene wash process.

Pasteurisation of raw milk kills most bacteria; however, some survive the process and are called thermoduric bacteria.

The thermoduric bacteria that manage to resist heat can produce protective spores. These spores end up in the finished milk product, and reduce it's the shelf life.

Dairy farmers are familiar with TBC and SCC levels, and with the possibility of being penalised if the levels are below a standard set by the milk buyers. Thermoduric bacteria has come to the spotlight of the milk processors who will look to penalise elevated levels of thermoduric bacteria found in the milk.



High THERMODURIC BACTERIA levels penalties, could cost up to 1 PPL

Thermoduric bacteria what could it cost the farmer, 1ppl ?

Thermoduric bacteria are historically elevated in the summer months when air bourn spores are rife. Robotic milking can also suffer from thermoduric issues.

The quality control for milk exported for processing into high value goods such as baby formula, have already been affected by thermoduric bacteria for some time. There is now a high level of focus on improving dairy hygiene procedures to attain the standards required to access the export market. Dairy Farmers now face real challenges to combat the potential loss of revenue caused by thermoduric bacteria spores.

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Some milk buyers are proposing to introduce a penalty (up to 1ppl) if the thermoduric count is higher than 5,000 cfu/ml . This will be based on a sliding scale, so even at 1000 -1499 cfu/ml there would still be a penalty.

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Contact Angela Smith BouMatic 07399 003791

Combating Thermotolerant Bacteria

Controlling Thermotolerant issues in Robots and conventional milking



BlueMAX Premium Ready To Use Dip-Foam-Spray

There's never been a dip like it!

Highly effective Barrier against Thermotolerant bacteria

- **BlueMAX Premium** from BouMatic is the dairy industry's first and only no mix chlorine dioxide pre- and post-milking teat dip!
- **BlueMAX Premium** has completely eliminated the waste, inconvenience and cost of mixing required with all other Chlorine Dioxide teat dips. Healthy teat skin is an essential part of overall teat health.
- **BlueMAX Premium** is formulated with special emollients to help keep teat skin soft and healthy – day after day – milking after milking. **BlueMAX Premium** is also the optimal solution for keeping the cow's teat ends healthy and free of hyperkeratosis.
- **Optimal protection of teats until the next milking** - **BlueMAX Premium** is the first ready to use chlorine dioxide product. Chlorine dioxide has a proven quick effect on bacteria and ensures best quality of the harvested milk.
- **Exceptionally good teat condition** - Exceptionally good teat condition in just a few days. The teats are cleaner and better protected between milking.
- **Multipurpose use** - **BlueMAX Premium** has a high foaming capacity and can be used before and after milking by a high foaming capability.

>15% Skin conditioners

Formulated with e-Bond™ technology



 Can be used on Robots

Organic solutions against Thermotolerant Bacteria

Hexi Dip Supreme Foam-Dip-Spray

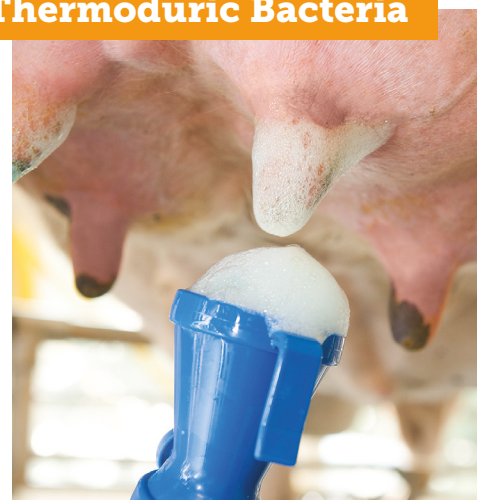
Highly effective pre-clean against Thermotolerant bacteria

Chlorhexidine disinfection and skin conditioning balance pre-and post-foam dip with a perfect

Hexi Dip Supreme is a liquid solution for pre- and post-milking teat disinfection.

Hexi Dip Supreme has been developed for dipping, spraying or foaming cow teats prior to or after milking. It simplifies perfect teat preparation prior to milking and high-performance teat disinfection after milking to allow the sphincter to close. Its high foamability results in low product consumption.

Disinfection and skin conditioning. Moreover, the controlled pH makes Hexi Foam non-aggressive for the teats.



 Can be used on Organic systems



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Combating Thermotolerant Bacteria

Highly effective Barrier against Thermotolerant bacteria

Gladiator Barrier

The toughest dip on both contagious and environmental bacteria Germicidally effective for 24 hours

- **Gladiator Barrier** is a 1% chlorine dioxide post-dip base and activator. This product is the toughest dip on both contagious and environmental bacteria.
- **Superior film-forming barrier** - This superior film-forming barrier helps prevent bacteria from entering the teat canal. Reactivates when exposed to moisture - keeps protecting teats between milking.
- **Effective germicide** - Gladiator Barrier stays Germicidally effective for 24 hours after mixing.
- **Powerful broad-spectrum germicide** - Powerful, broad-spectrum germicide extensively tested and approved.
- **Optimal skin conditioning** - 15% skin care package moisturizes, protects and helps heal teats. Lactic acid helps exfoliate dry, cracked skin and is proven **effective in reducing hyperkeratosis**.
- **Lactic acid in a concentration of 0.5% is optimum for teat skin.**

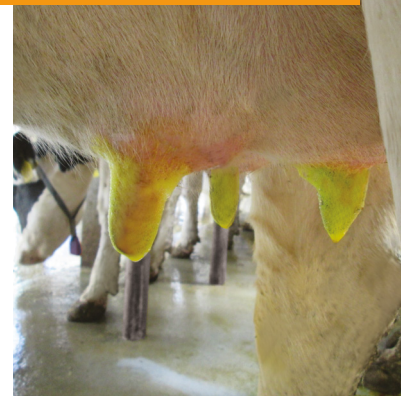


Highly effective Barrier against Thermotolerant bacteria

Gladiator Pre/Post

Extremely versatile dip formulated to tackle even the toughest mastitis causing organisms

- **Gladiator Pre/Post** is a chlorine dioxide Pre/Post base and activator. This product is the toughest dip on both contagious and environmental bacteria.
- **Superior foaming action** - Superior foaming agents help clean and disinfect the teats with very low product consumption per cow.
- **Powerful broad-spectrum germicide** - Powerful, broad-spectrum germicide helps prevent bacteria from entering the teat canal. Reactivates when exposed to moisture - keeps protecting teats between milking.
- **Lactic acid helps exfoliate dry, cracked skin** - Lactic acid helps exfoliate dry, cracked skin and has been proven effective in reducing hyperkeratosis. Lactic acid in a concentration of 0.5% is optimum for teat skin.
- **Excellent skin conditioning** - 10% skin care package moisturizes, protects, and helps heal teats.



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Combating Thermotolerant Bacteria



Rubber Ware

The rubber ware in the plant often gets forgotten and can be a major source of thermotolerant bacteria. Use the correct wash products at the correct calibrated rate.

Bulk Tank

- Spray balls / in need of cleaning.
- Spinners not turning, freely / or missing.
- Milk stone build up.
- Poorly designed pipework or dead ends where bacteria can proliferate and detergent fails to reach.

Milking Parlour

- Insufficient volume of wash water.
- Temperature at the furthest part of the parlour too low to activate chemicals.
- Insufficient turbulence.
- Inadequate clean of valves, check filters, build-up of debris in plate cooler.
- Not using milkstone or acid in hard water areas.

Automatic Washers

- No regular maintenance.
- Inadequate water temperature, poor rinse cycles, no final rinse with hypo or peracetic.
- Inadequate product – drum empty – not drawing up. No final rinse. Warm final rinse with hypo or peracetic.



1 Cleaning teat clothes

BlueMAX Active cleaning disinfectant for buckets and washing machines for teat wipe disinfection.

2 Teat Dip

Take advice from your BouMatic dairy hygiene supplier

Chlorine Dioxide based products are the most effective teat dips against thermotolerant bacteria, Organic producers cannot use chlorine dioxide but can use a safe chlorhexidine product. Use the most effective teat dips to remove bacterial spores and protect against thermotolerant bacteria spores coming back into the parlour.

3 Milk residue in the milking machine

Residues give an ideal breeding ground for thermotolerant bacteria, dull areas of stainless steel could indicate a build-up of residue, in pipework. Milk residue also occur in the milk filter, claw piece, milk pump diaphragm, plate cooler, milk line or receiver jar. It is important to ensure that residues are minimised with a good wash process.

Why use Chlorine Dioxide on Robots ?

The BouMatic chlorine dioxide range are an effective broad spectrum, anti-inflammatory germicide that are able to efficiently control gram-negative, gram positive bacteria, moulds, yeasts, & mycoplasma.

The Ready To Use BLUEMAX Premium chlorine dioxide can be used on robotic milking as well as traditional, with an added benefit in reducing thermotolerant bacteria including Bacillus and Clostridium species.

Chlorine Dioxide products are effective under organic matter stress. When you have teats contaminated with mud, manure and milk as well as other environmental materials there is an increase of pH on the skin surface. Compared to other disinfectants such as iodine, chlorine dioxide maintains its effectiveness whilst under pressure from organic contamination and high pH that occurs.



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