

Milk treatment advice



Pasteurisation

Pasteurisation will destroy *M. bovis* bacteria if done correctly.

The recommended treatment is 60°C for 60 minutes.

Refer to manufacturer specifications for operating the pasteuriser.



Acidification with citric acid

To kill *M. bovis* by acidifying milk, it needs to be at a pH of 4.5 for at least 8 hours.

- Citric acid is available online and from farm merchant stores.
- Use cool (10°C to 24°C) or cold (less than 10°C) milk to minimise coagulation or clot formation.
- Always add acid to milk, not milk to acid.
- Acidification works best when adding citric acid to fresh milk.
- It's important to accurately measure the weight of citric acid and volume of milk. Use a rate of:
 - 5g citric acid per litre of whole milk
 - 550g per 100 litres of whole milk, and
 - 5kg per 1,000 litres of whole milk.
- Sprinkle the acid on top of the milk while the milk is being agitated.
- At pH 4.5, milk separates, but with gentle mixing goes back into a homogenous solution.

- Do not acidify below pH 4 as this will result in:
 - thickened milk
 - risk of complete coagulation, and
 - calves not drinking the milk.
- Gentle mixing of the milk twice a week is the recommended method. Continuous or vigorous mixing causes coagulation.
- For systems that pipe milk, the milk may coagulate in pipes or tubes with blockage of lines and nipples. This can result in the feeding of whey to calves if the casein coagulates.

Testing pH

- Test the pH of milk half an hour after adding citric acid to the milk.
- Test again just before feeding the milk to calves.
- Use pH test strips. You can buy these online and from farm merchant stores.
- It can be difficult to keep an electronic pH meter clean and calibrated when working with milk. If using one, make sure you clean and calibrate it regularly.