

# Hygiene in the milk parlour

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*Long ago we believed that we could clean milk by pouring milk through a strainer. Today we know better, but do we as workers understand the difference between clean and bacteriologically clean? Do we realise that a tank that looks clean, is not really clean? A milk strainer cannot stop bacteria or antibiotics.*

## Bacteria

Bacteria are very small organisms that one cannot see. They make food such as milk, meat and fish go bad very quickly and cause off tastes in cheese (dairy products). Bacteria need the following to grow properly:

- **Heat (temperature):** bacteria love heat. That is why we have cold rooms, milk tanks and fridges.
- **Moisture:** Bacteria are found in dust, but need moisture to grow.
- **Food:** Milk, meat and fish are the ideal food. Bacteria in dirty milk tanks or milk machines have the heat, moisture and food they need to grow.

## Cleaning

To effectively clean a milk tank and milk machine we need all three products:

- **Soap:** Soap helps to remove the food (fat/protein) for bacteria from the system.
- **Acid:** Acid is used to remove the lime that comes from the warm water for washing, from the equipment. The lime scale serves as a hiding place for milk remnants and bacteria. Acid also lowers the pH of the equipment and a low pH is bad for bacterial growth.
- **Sanitiser:** After the soap removed all the food and the acid all the lime, there can still be bacteria in the milk machine. It is necessary to sanitise the equipment to kill the remaining bacteria.

## What does a good washing programme need?

**Temperature:** Fat and protein must be removed at a temperature of  $\pm 75^{\circ}\text{C}$ . If the water becomes cold, the fat and protein is left behind again. There is not such a thing as cold-water soap.

**Concentration:** The right amount of soap, acid and sanitiser must be used for the amount of water. Do not waste money by trying to save on the wrong things.

**Time:** Every milk machine must be washed for a different length of time. The time must not be shorter than 6 minutes and not longer than 10 minutes. The temperature of the water for washing will determine the time for washing. The temperature of the water for washing must never be lower than body temperature. The milk tank is washed with a cleaning agent that foams to determine the time. The time that the foam takes to run down the sides of the tank, gives the soap the chance to work.

**Action:** Action is achieved in the milk tank by using a tank brush. Action is achieved in the milk machine by letting in air at the suction pipe at the washbasin. The suction pipe must let in air for 3 seconds before the milk pump lets the water for washing run out in the washbasin. Longer than 3 seconds will cool down the water for washing too quickly.

### Washing programme for the milk machine

**Step 1** Rinse the milk machine with cold water. Lukewarm water is very dangerous as lukewarm does not feel the same for everyone. Water that is too hot will result in protein forming a layer in the equipment.

**Step 2** Wash the milk machine with warm ( $\pm 75^{\circ}\text{C}$ ) water and soap for between 6 and 10 minutes.

**Step 3** Rinse the milk machine with sanitiser in cold water  $\pm 3$  minutes.

**Step 4** Drain all water for washing from the equipment.

**Acid step** Depending on the hardness (amount of lime) of the water, the milk machine must be washed with an acid once or twice a week. It can be cold water for 10 minutes. The acid step is done after **Step 2** and before **Step 3**.

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**IMPORTANT:** Never rinse the milk machine again with clean water after it was sanitised.

### Washing programme for the milk tank

**Step 1** Rinse the last milk out of the tank with cold running water (use a hose-pipe).

**Step 2** Mix a solution of  $\pm 15$  litres warm water ( $75^{\circ}\text{C}$ ) and foaming soap in a plastic bucket. Place the bucket in the tank and wash the milk tank with a brush from top to bottom. Use a bucket because it helps to maintain the temperature of the water. Do not forget to wash the tank outlet and gauge/yardstick.

**Step 3** Sanitise the milk tank by applying the sanitiser with a spray bottle or by washing the tank with a tank brush.

**Step 4** Drain the sanitising water.

**Acid step** The milk tank must be washed with a strong acid once a week to remove lime scale. This step is done after **Step 2** and before **Step 3**.

**IMPORTANT:** Never the rinse the milk tank with clean water after it was sanitised.

# DON'T CRY OVER SPILT MILK

## DAIRY PROCESSING

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## Safety

Cleaning agents are very dangerous and must be handled with care. You cannot replace your eyes.

- Containers must always be clearly marked (use labels).
- Containers must always be closed and stored high or behind a locked door.
- Soap that is poured into a jug must be poured into the water for washing immediately and must never be allowed to stand unused.
- The jug used for scooping out the soap must be rinsed after it was used.
- Empty soap containers must be rinsed before it is stored or used for water for workers.

## Treatment

Accidents happen and therefore treatment on the farm is very important. Quick action can save your eyes, throat or stomach.

**Skin:** If the skin gets in contact with soap or acid, wash it thoroughly. If the skin is broken, visit your doctor.

**Eyes:** If you get soap or acid in your eyes, rinse it with as much water as possible and visit a doctor.

**Mouth:** If you drink acid, drink as much water or milk to dilute the acid. Put your finger down your throat to help you throw up. If you drink soap (soda), drink lots of water or milk. Do not throw up. Visit your doctor.

## Cost calculation

We often hear people say soap is soap, but that is not at all true. We no longer read the labels. We compare the prices. Here is a quick calculation that every dairy farmer can make:  
How much water for washing is used, eg 60 litres?

How much lime is in the water?

How much cleaning agent per litre of water for washing is needed according to the label, eg 5 ml/litre?

Price of the cleaning agent per ml, eg R264 divided by 25 000 ml = 1,056c

Cost per wash

60 litre x 5 ml = 300 ml

300 ml x 1,056 (price) = R3,16 **UM**

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