

# HOW TO PRODUCE MILK HYGIENICALLY

Milk handling affects the quality of the finished product. Milk quality and hygiene play a vital role in the dairy production system and should not be underestimated. Milking activity, transportation, storage, hygiene and processing activities determine milk quality.

## Characteristics of clean, standard milk

- Milk that is obtained from a well-managed and healthy cow.
- It has a pleasing flavor.
- It contains no foreign material e.g. hairs, dust and organic matter.
- It has low levels of non-harmful bacteria.
- It has no chemical residues used on the farm, like antibiotics and pesticides.
- It has no odd smell or colour.

## Sources of contamination in milk at the farm

- **Animals (cows):** Dirt and dust in milk may come from the cows' flanks, udder and belly during milking and therefore the animals should be fairly clean. Dairy herds should be free from diseases, e.g. mastitis, that might spread to humans through the milk. Drug withdrawal periods must also be observed.
- **Milk handling and storage equipment:** All milking equipment should be kept free from odours and dust. In sequence, machinery should be briefly rinsed, then thoroughly washed, then rinsed again, to avoid milk stones forming on the equipment.
- **Environment (especially around the milking parlour):** The milking facility should be located in a well-drained, regularly cleaned and disinfected area.
- **Milkers and milk handlers:** All the personnel handling milk must be clean and free from communicable diseases. They should also follow the proper milking procedures.

## Milking by hand

Prepare the milking parlour and equipment as follows:

- Ensure the milking parlour is clean and ready for milking.
- Use the right equipment to handle milk. Utensils to be used for milking should be made of non-absorbent, corrosion resistant material, that is not scratched easily. It should have a smooth surface and should be free from dents as well as easy to clean. Aluminum and stainless steel equipment are mostly preferred.
- The equipment should be cleaned and ready for use during milking.

Prepare cows for milking well as follows:

- Bring the cows to the milking parlour gently (Figure 1). Hitting or yelling will cause cows to become irritated and stressed.
- Maintain a regular milking pattern or program. E.g. ensure that you milk at the same time and in the same location.
- Avoid interruption and visitors on the farm during milking.

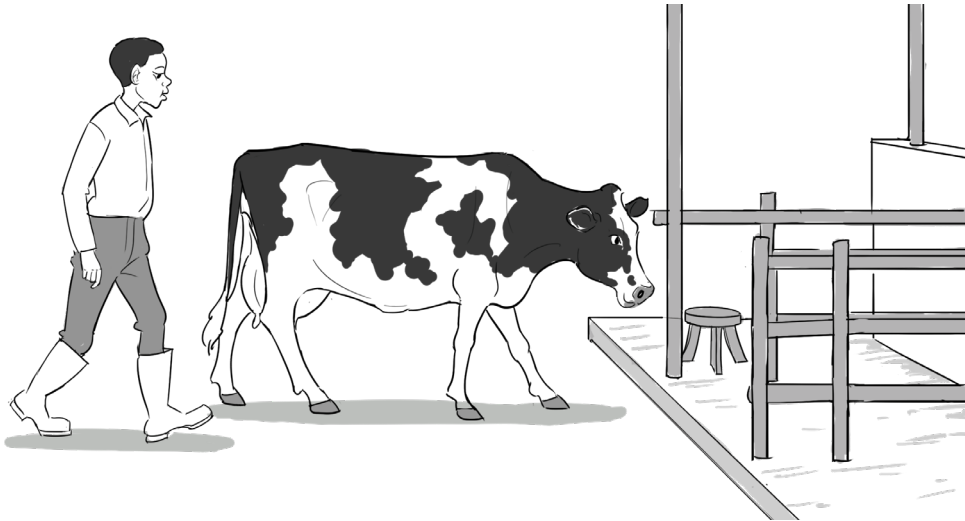


Figure 1: Preparing cows for milking.

Clean hands and ensure dry cleaning towels are available.

- Thoroughly wash hands with water and soap before milking (Figure 2). All milking equipment must also be cleaned before use.
- Ensure the towels for cleaning the udder are clean (one towel to be used for washing and another towel for drying the udder).
- Warm water for washing the udder should also be available.



Figure 2: Hand hygiene.

## What to keep in mind when cleaning a cow's udder?

- Use clean warm water to wash the teats.
- Use a clean towel to wash the teat (Figure 3).
- All dirt, manure and residue on the teat should be removed while cleaning using a gentle twisting motion.
- Thoroughly dry the teat with a single service, absorbent cloth or paper towel. **NEVER** use the same towel for two cows.
- Apply milking salve.

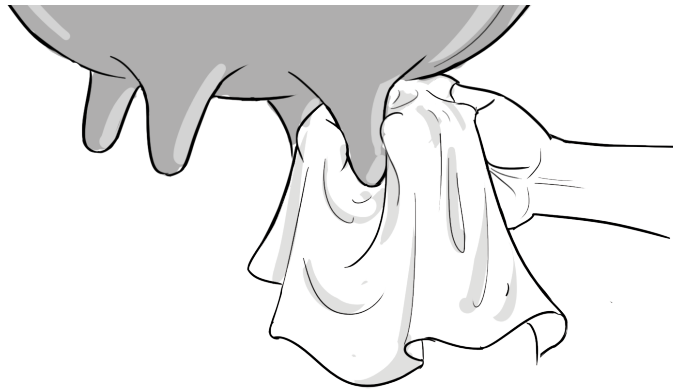


Figure 3: Cleaning the cow's udder.

- Fore strip to check for mastitis
- Manually strip 2 or 3 squirts from each quarter into the strip cup to check for abnormal milk.
- Use a strip cup to remove the first stream of milk.
- Milk should not be stripped onto a hand or towel (Figure 4). This increases the chances of spreading mastitis.
- This should be done routinely (though not daily) to check for mastitis.



Figure 4: Preventing disease.

## How to milk a cow by hand?

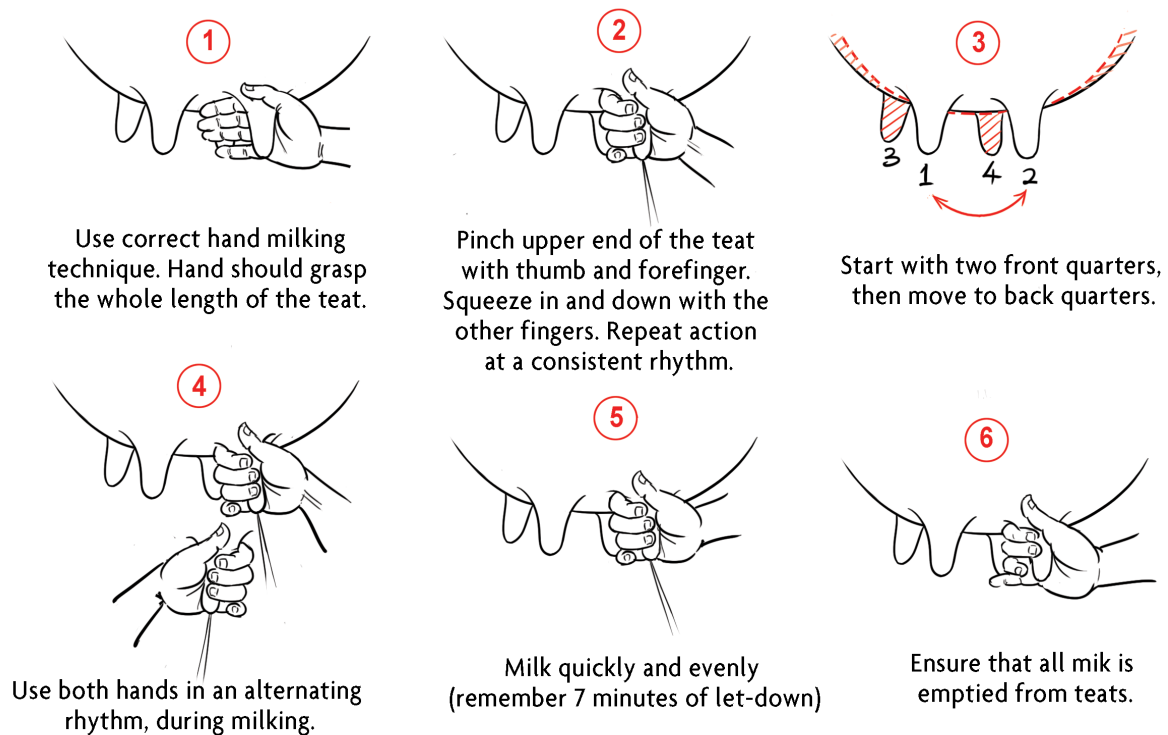


Figure 5: Milking by hand

## What are the steps after milking?

- Dipping the teats with a special teat dip right after milking can help to prevent udder infections (Figure 6).
- Keep a cow standing for more than an hour directly after milking by feeding after milking.
- Record each cow's amount of milk regularly. It is easy to keep an eye on the production performance of each cow.



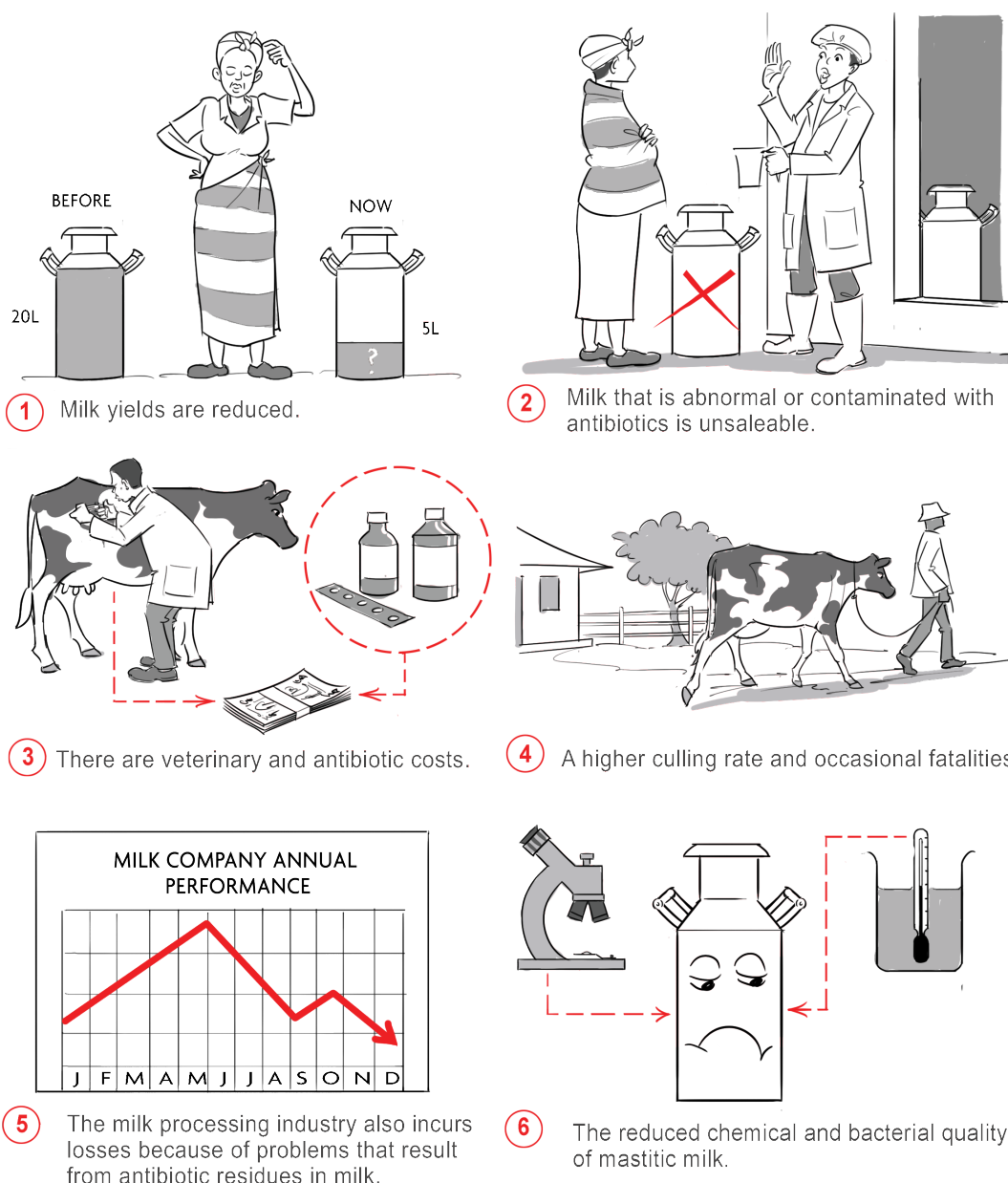
Figure 6: After milking.

- The people who milk the cows should be clean, healthy and free of infectious diseases.
- Keep the cows clean and dirt-free. Prevent their hindquarters from becoming covered in manure and mud.
- Groom the cows regularly to remove loose hair and dirt because these can fall into the bucket during milking.
- Detect and treat all cows showing signs of udder infection.
- Keep the milk refrigerated or in a cool place after milking, to maintain quality.
- Set a regular milking routine. If milking twice a day, use a 12 hour interval. If milking three times a day, use an 8 hour interval between milking to optimise milk production.
- Cows infected with mastitis should be milked last.

## Mastitis prevention and management

Mastitis is an inflammation of one or more quarters of the udder. It is caused by bacterial infection.

### How mastitis causes direct economic losses to farmers?

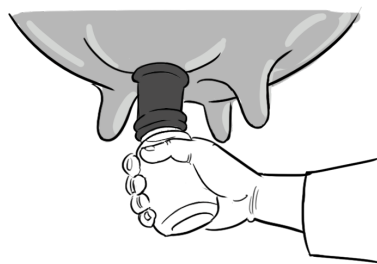


**Figure 7: How mastitis causes direct economic losses to farmers.**

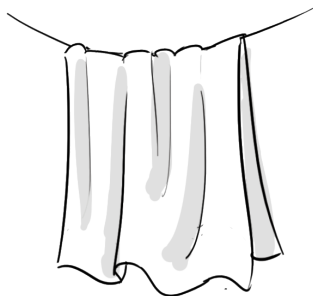
## What are good mastitis prevention strategies?



① Clean udders/teats before milking.



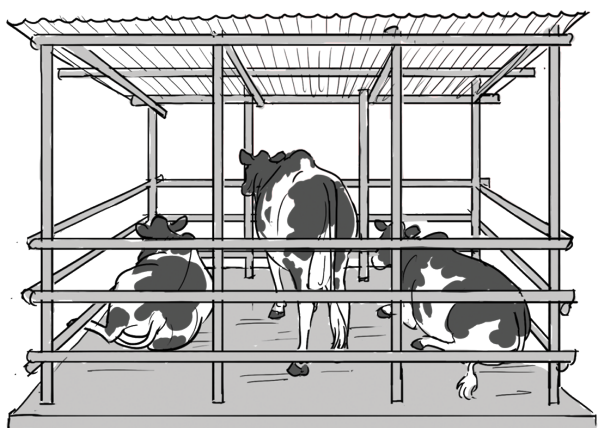
② Use proven effective post milking teat dips.



③ Use clean reusable cloth towels to clean and dry teats.



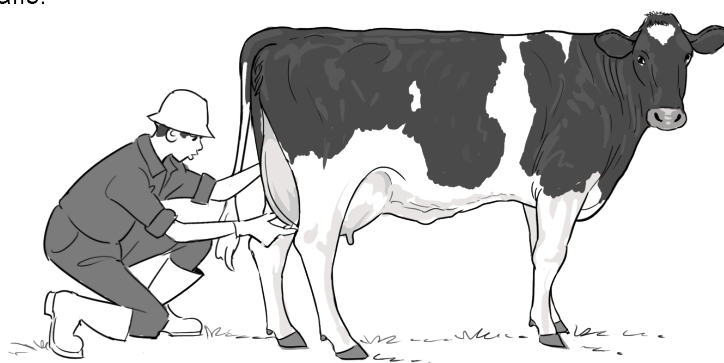
④ Fore-strip milk from each quarter.



⑤ Provide comfortable, properly designed and bedded stalls.



⑥ Keep facilities clean and dry.



⑦ Check udders of cows and heifers while pregnant.

Figure 8: How to prevent mastitis.

## **Mastitis treatment strategies**

- Consult with your herd veterinarian for mastitis treatment regimes: Producers should use their vet's expertise when deciding how to treat mastitis cases.
- Consider drying off early: There may be situations when a cow or quarter is so infected that the producer should consider drying-off the cow early or treating the quarter to cease milk production. This should be done only if the cow is a valuable animal that the producer wants to keep in the herd rather than cull.

## **Mastitis eradication strategies**

- Cows that have a chronic, incurable mastitis infection should be culled from the herd to prevent the transfer of the infectious organism to other cows. This is a last resort, but one that should be followed when required. Producers should strive to limit the incidence of this costly involuntary culling practice.