

Improved traditional practices

Animal milking and milk hygiene in East Africa

Milk processing in East Africa

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Milk production

Good quality milk is obtained from healthy animals and can be processed into many high quality dairy products that are sold at higher prices.

Characteristics of good milk

- Taste good and creamy, white in color
- Free of impurities, drugs' of fall (such as antibiotics)
- Low microbial load and free of diseases with good preservation quality that doesn't spoil quickly (long expiry period).

To obtain good milk, workers dealing with milk should be aware of general health rules taking the followings into consideration.

- Wash hands and milk processing utensils and tools with clean water and soap before dealing with the milk.
- Trim nails periodically.
- Wear special clean clothes and rubber shoes.
- Do not deal with the milk if you are infected with diseases and skin inflammations, particularly hands and head.
- Take a shower periodically.

Safety and Hygiene

Poor hygiene in milk production and processing could be a risk for consumer due to the presence of many pathogens like *E. Coli*, *Staphylococcus aureus*, *Listeria*. Other zoonotic diseases could be transferred to humans through milk like Brucellosis and Clamidosis.

Good quality milk

Good milk is obtained from healthy animals and can be processed into many high quality dairy products that are sold at higher prices.

Good milk is a guarantee for consumer's health.

Sources for milk contamination

- The environment of milking place (dust, insects, ... etc.).
- Animal particularly the udder.
- Sick animals.
- Milker hands.
- Non-clean milking and milk utensils.
- Deformed milk utensils.



- Use clean utensils
- Utensils should be smooth to be cleaned well. Unsmooth and deformed utensils will not be well cleaned and bacteria can be alive in scratches and dead corners that are difficult to clean
- Clean directly after use all material that come in touch with milk well with clean water and soap, un clean water can be a source for contamination
- Avoid dealing with milk in dusty places.

Additional factors related to milk spoilage

Milk traders are facing additional constraints in milk marketing. Many of these problems cause milk spoilage. These include the following aspects:

- Transportation of uncooled milk for long distances
- Preservation method
- Lack of knowledge and experience

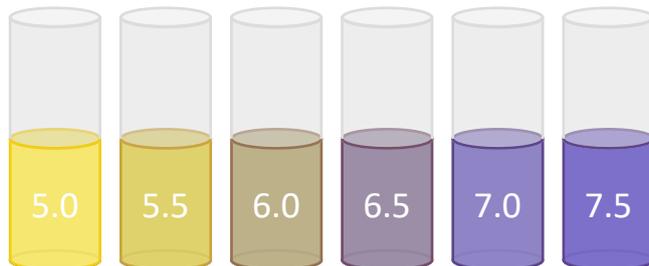
Quick check of milk quality

Spoiled milk has generally elevated acidity values which could be checked and evaluated by different ways

Milk traders could check the milk by smell or using tools to simple detect milk quality. But also they can use pH indicators like Bromocresol purple



Methylene blue test??

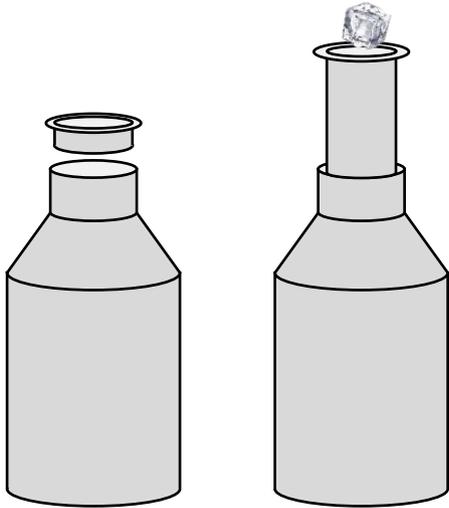


Color change of bromocresol purple based on pH value

- Put around 3 ml of milk in a test Tube
- Add few drops of bromocresol purple to the milk
- Evaluate the color
 - Normal milk, purple gray color
 - Acidic milk, yellowish color
 - Mastitic milk, dark purple color

Milk handling equipment

Special designed containers can be used to cool down milk on farm and during transportation by using ice. Ice can be placed in a special compartment that will be placed in the core of a milk can to cool the milk. A special insulation coat can be placed around the milk can to maintain the low temperature of milk.



The special designed milk can consists of:

- Milk can
- Ice compartment
- Milk can and ice compartment cover
- Insulation coat

Ice can be produced by a normal freezer at home and also can be produced using solar technology in remoted areas and areas where electricity is not available.

Animal milking

Milking should be done at the same time of the day by the same persons.

Wash and dry the udder with a clean tissue before milking.

Cleaning and drying the udder prior to milking helps in getting rid of dirt attached to the udder and promotes lactation process.

Disinfect the teats after milking using iodine solution. This step will help in mastitis prevention. Dilute a tea spoon of 10% iodine up to a cup of clean water alternatively diluted hypochloride solution can be used.



- Wash hands before and after milking
- Use clean un deformed and smooth surface milk cans
- Wear special clothes and rubber shoes.
- Do not milk if you are sick or have skin inflammations.

Milk preservation

Milk should be cooled directly after milking to

Let us remember

Proper hygiene practices is a key form good quality milk that is well marketed

Cooling milk will keep bacteria in milk under control

Acknowledgment

The information in this booklet was compiled by Kristina Roesel, Muhi El-Dine Hilali, Barbara Wieland and Barbara Rischkowsky

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