Always Remember

- Milk quality control starts at the farm
- Clean milk is key to quality and safety
- Cooling milk is key quality and safety
- Cooling milk protects milk spoilage

How to avoid farm milk spoilage

Kenya Agricultural Research Institute
PO. Box 57811-00200, NAIROBI.
Tel: 254-20-4183301-20, Fax: 254-20-4183344
Email: resource.centre@kari.org
Website: www.kari.org

Compiled by:
Omondi S.P.

For more information contact:
Centre Director,
KARI Muguga North
P.O BOX 32 Kikuyu, 00902
Tel: (066) 32106/7, 32000
Fax: (066) 32450
E Mail: vrckari@yahoo.com

KARI information brochure series / 34 /2008
Ksh. 20
**What is milk spoilage?**

This is contamination of milk with foreign substances and harmful bacteria that can cause illness to consumers.

Contamination and spoilage occurs from before milking up to the time of consumption.

Contaminated milk is rejected by processors, dairy societies and consumers leading to loss of farmers' income. Spoilt milk has various characteristics which include:

- Has clots or yellow brownish colour
- Clots on boiling
- Bad smell
- Appears watery.

**Causes of milk spoilage**

Various factors may contribute towards milk spoilage. These include:

**The cow**

The cow may collect mud, straw or dung from a poorly constructed or dirty shed which may contaminate milk. Cow diseases like mastitis as well as antibiotic residues may also contaminate milk.

**The milker**

If proper hygiene is not observed by the milker; spoilage can occur. Poor hygiene may be failure to wash hands before milking and use of dirty and inappropriate utensils among others.

**Environment**

Disease pathogens, flavors in feeds as well as straw, dung and soil from the cow sheds environment may also contaminate milk.

---

**Steps to minimize spoilage**

- Always use boiled water to wash your hands, udder and teats before milking
- Use clean cloth to wash, clean and dry the udder
- Milk the first drop from each of the quarters into a black gum boot to check for clots and reddish brown colour which are indicators of mastitis
- Sieve the milk with a strainer or muslin cloth into an appropriate container to remove particles
- Cover the milk and transport it to a clean and cool place
- Milk mastitis infected cows last after milking clean cows and thereafter dip teats in an antiseptic teat dip and discard such milk.

**Testing the quality of milk**

If you suspect that your cow has mastitis but you are not observing the symptoms:

- Take a sample of milk from an affected quarter of the udder and send to the nearest Veterinary Investigation or research laboratory.

---

**Spoilage factors, sources and prevention**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Source of spoilage</th>
<th>Prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>The cow</td>
<td>Soil, dust, mud, dung</td>
<td>- Wash mud off the cow.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Wash udder with clean cloth dipped in warm water</td>
</tr>
<tr>
<td>Disease – eg Mastitis</td>
<td></td>
<td>- Cut udder hair short.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Maintain cleanliness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Treat cows.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Cull cows which do not respond to avoid infection of others</td>
</tr>
<tr>
<td>Antibiotic residue in treatment of sick cows</td>
<td></td>
<td>Observe drug withdrawal period</td>
</tr>
<tr>
<td>The milker</td>
<td>Inadequate hygiene</td>
<td>- Wash hands before milking and ensure nails are short.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Cut nails short</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Do not milk when you are sick.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Do not sneeze, cough, spit, and smoke over the milk.</td>
</tr>
<tr>
<td>Milk utensils</td>
<td>Unsuitable utensil type and cleanliness</td>
<td>- Wash milking utensils in clean hot water</td>
</tr>
<tr>
<td>Bacteria, yeasts and moulds</td>
<td>Dirty housing of cow</td>
<td>- Good roofing and concrete floor for cowshed</td>
</tr>
<tr>
<td></td>
<td>Plastic milk utensils</td>
<td>- Clean metal cans for milk storage.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Cool milk in refrigerator, water basin or wet charcoal cooler.</td>
</tr>
<tr>
<td>Impurities</td>
<td>Soil, straw, dung</td>
<td>Maintain clean cow shed</td>
</tr>
<tr>
<td>Off-flavours</td>
<td>Feed sources with odours, inadequate cleansing of detergents and/or pesticides</td>
<td>- Avoid strong smelling fodder or slage two hours before milking.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Avoid milk storage near wet paint.</td>
</tr>
</tbody>
</table>

**Preventive measures to minimize or evade spoilage are shown in the table below:**

---

**Appropriate container**