



# SAFE MILK KENYA

KNOW YOUR MILK-IMPROVE YOUR HEALTH!



## GOOD DAIRY PRACTICES FOR MAXIMUM PROFIT AND CONSUMER SAFETY

QUALITY MILK AND PROPER USE OF ANTIBIOTICS





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# Table Of Content

1. QUALITY MILK

2. USE OF ANTIBIOTICS IN DAIRY FARMING :  
GOOD PRACTICE GUIDE



# QUALITY MILK: WHY DOES IT MATTER?



### Make it safe.

Farmers make more money from quality milk



### Keep it safe.

Processors provide consumers with the best tasting, long lasting and healthiest milk if they get quality milk from the farmer.



### Drink it safe.

Consumers are sure that what they are drinking is the cleanest, healthiest and best-tasting milk that they can get.

Quality milk is important to the farmer, the processor and the consumer. Poor quality milk from the farm will have a shorter shelf life and can be a host for all kinds of bacteria and diseases for the consumer. However, with knowledge and some measures in place, farmers can ensure that their milk is the highest quality possible – and be proud of that!

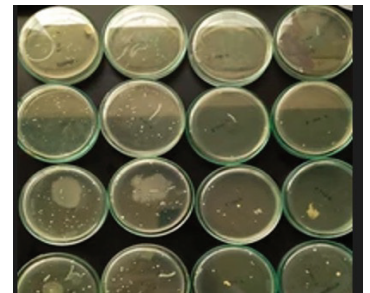
## WHAT IS QUALITY MILK?

Quality milk has low TPC; aflatoxin-safe levels; no antibiotics; no additives such as water or hydrogen peroxide.

### Total plate count (TPC)

#### What is the TPC?

The TPC is the number of colonies of bacteria, yeast and fungi that result from a sample of milk cultured on a test plate. Faeces and dirt introduce bacteria and other micro-organisms into the milk, so high TPC is a direct result of unhygienic milking.



Oxygen and heat stimulate the growth of those bacteria. You cannot see them with the naked eye, but when a sample of milk is put on a growth medium (a plate), the micro-organisms grow under controlled circumstances. They form large colonies of micro-organisms that can be counted. The TPC is measured in a laboratory. High TPC is a sign of poor quality milk. It may cause your milk to be rejected by the processor.

## WHAT CAN I DO TO MAINTAIN LOW TPC?



To prevent high levels of TPC in your milk, you need to have a hygienic milking process:

**Cow:** Keep faeces away from your cow by cleaning the cow stalls, floors and the cow herself. Wash the cow's udder and back legs before milking.



**Clothes:** Wash hands and wear clean clothes. Old dirt contains bacteria.

**Equipment:** Clean your equipment with soap and a brush or follow machine milking cleaning procedures.

**Cool the milk as soon as you can after milking:** the longer it stays warm (37 degrees) the quicker the spoilage occurs.



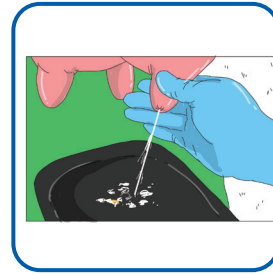
# HYGIENIC WORK PROCESSES: MACHINE/HAND MILKING



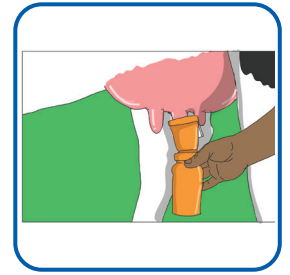
Wear clean clothing, wash your hands with soap and dry them using clean towels.



Clean the cow's udder and teats with disposable cloths. This removes dirt and faeces residue.



Check for milk clots or blood by pre-milking each teat (checking for mastitis).



After milking, teat-dip the cows within one minute of finishing or taking off the milking unit. This cleans of any milk residue and helps prevent mastitis.

**NB : Always Change the milk filter before every milking session.**

## CORRECT HAND MILKING PROCEDURES

- Milkers should wash hands thoroughly, clean and dry them prior to milking. They should wear clean overalls.
- Gently lead the dairy cow into the milking bale and restrain the back legs. Clean the udder with warm water and dry the teats.
- Use a clean, non-corrosive bucket (stainless steel) which is easy to clean and disinfect.
- Wash hands.
- Strip the teats on to a dark surface (even a piece of clean inner tube will do) to check for mastitis.
- Use recommended milking salve and gently hand milk, maintaining the motion of hands until the milk is depleted
- Teat dip the cows' teat with Mastrite or recommended teat dip.
- Cool the milk once milking is complete.

## HYGIENIC MACHINE MILKING PROCEDURES

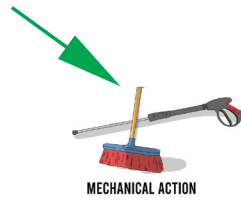
- The hygienic machine milking procedure is as follows;
- Fix the milk filters.
- Restrain the animal gently in the milking bale.
- Wash hands before milking.
- Clean the cows' udder using warm water and dry it.
- Strip cup the first milk to detect cases of mastitis.
- Insert the milk claws and monitor the milk uptake until its depletion. Make sure that each teat is milked out.
- Gently remove the milk claws from the cow teats.
- Teat dip with Mastrite to prevent bacterial infection.

**NB: Always change the milk filter immediately before every milking session.**

# HYGIENIC WORK PROCESSES: CLEANING THE DAIRY

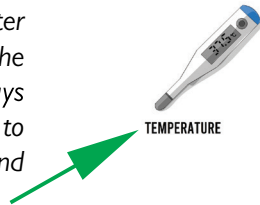
## Mechanical action:

scrubbing, pressure spraying and water turbulence ensure that the dirt can be removed more easily.



**Time:** the longer the cleaning time, the more dirt that will be removed.

**Temperature:** higher water temperatures will increase the efficacy of the cleaning. Always use water of over 70 degrees to clean your milking buckets and milk cans.



**Cleaning product:** water used with a suitable soap or recommended dairy cleaning product will remove the dirt better.



## Example of economic advantage of providing quality milk to one Kenyan processor:

TPC result at XXXX laboratory [cfu/ml]	Premium/Penalty paid [KSh] per kg
≤ 100'000	3.0
101'000 – 200'000	2.0
201'000 – 400'000	0.0
401'000 – 600'000	-1.0
601'000 – 810'000	-2.0
801'000 – 1000'000	-3.0
≥ 1000'000	-4.0

## THE IMPACT OF COOLING ON TPC: (LOW TPC MEANS HIGHER QUALITY MILK)

- It is very important to achieve low milk temperatures as soon as possible, and to maintain them during transit and at the processing unit.
- Milk comes out of the cow at body temperature (37 degrees). If you do not have cooling facilities, then it will take many hours before it reached the ambient temperature of 25 degrees, which is still too high. Ideally it needs to be cooled to 4 degrees as quickly as possible. If you do not have a cooler, you will need to get it to your co-operative as soon as possible for cooling.
- This cold supply chain ensures that the quality and safety of milk is achieved. Low temperatures ensure that the milk bacteria growth is inhibited thus maintaining the milk freshness.
- The whole process benefits producers, processor and consumers by less chance of rejection on delivery to the processor, ensuring a longer milk shelf life, keeping good taste and nutritious quality.



## 2

# USE OF ANTIBIOTICS IN DAIRY FARMING GOOD PRACTICE GUIDE

The number one goal for all farmers is to produce safe and healthy milk for their families and for the consumers. This includes the correct management of antibiotic treatment in the herd so as to avoid the presence of antibiotics milk for human consumption.



• [farmersweekly.co.za/farming-basics/how-to-livestock/how-to-inject-your-livestock-properly](https://farmersweekly.co.za/farming-basics/how-to-livestock/how-to-inject-your-livestock-properly)

*“In Kenya, there are regulations governing the presence of antibiotics in milk. Recent testing by the Kenya Dairy Board showed that over 50% of the milk tested had unacceptably high level of anti-biotics.”*

### Antibiotics in Milk

When we treat a cow with antibiotics and she is lactating, the antibiotic is transferred to the milk, and from there to the consumer. This is dangerous because regular consumption of milk and dairy products containing low levels of antibiotics may cause bacteria to build up resistance to the antibiotic. This is called Antimicrobial Resistance (AMR).

AMR is a major challenge to global health in the 21st century. AMR means that some antibiotics may become ineffective in treating human and animal infections. Antibiotic resistant infections are associated with 4.95 million deaths globally every year of which 22% are in Sub Saharan Africa. Kenya is considered to be an AMR hotspot. Antiotic use in dairy cows and livestock is a major contributor.

## How does this affect me in the short term?

- Consuming antibiotics through milk can produce an allergic reaction in humans, especially those allergic to penicillin.
- If milk with antibiotic is mixed with other milk, the farmer risks having all their milk rejected by the processor and loses money as a result.
- If it is necessary to treat a cow, it is important to use the correct antibiotic with the correct dosage for the weight of the animal. You can use a weight tape measure to do this. Ask your extension officer how to use it if you have never used one.

**Observe the correct withdrawal period.** Withdrawal means that the milk from a cow which has been dosed with antibiotic must be disposed of and cannot be sold for human consumption.

## How are we misusing antibiotics?

- 92% of farmers purchase antibiotics for livestock over the counter, without prescription. This contributes to the risk of treating undiagnosed problems and over or under-dosing.
- The farmer does not seek the advice of a trained veterinarian and may not know what the disease is that they are treating. 58% of farmers administer antibiotics to their livestock themselves. This leads to incorrect treatment for diseases, and often at the incorrect dosage.
- The farmer does not weigh the cow, so does not know the correct dosage, leading to over or under dosing.

## How does antibiotic end up in the milk?

**Mostly antibiotic ends up in the milk because of these common mistakes:**

- The farmer does not read the label properly and does not observe the correct withdrawal period for the milk.
- The farmer overdoses the cow, e.g. instead of giving 20mls, the farmer gives 30mls. The withdrawal period is calculated on the 20 ml dose, so now the farmer does not know how long to withdraw the milk for.
- Administration of antibiotics through the udder in the treatment of mastitis. This method of treatment remains in the system longer than intravenous or intramuscular injections, so the withdrawal period will be longer. The farmer may not observe this.
- Cows treated for mastitis who continue to be milked with the rest of the herd. The milk gets mixed with that of the other cows.
- Cows who have been given dry cow treatment, which is an antibiotic, but the farmer does not dry her off and continues to milk her.



**Indications** are the diseases that this antibiotic will treat.

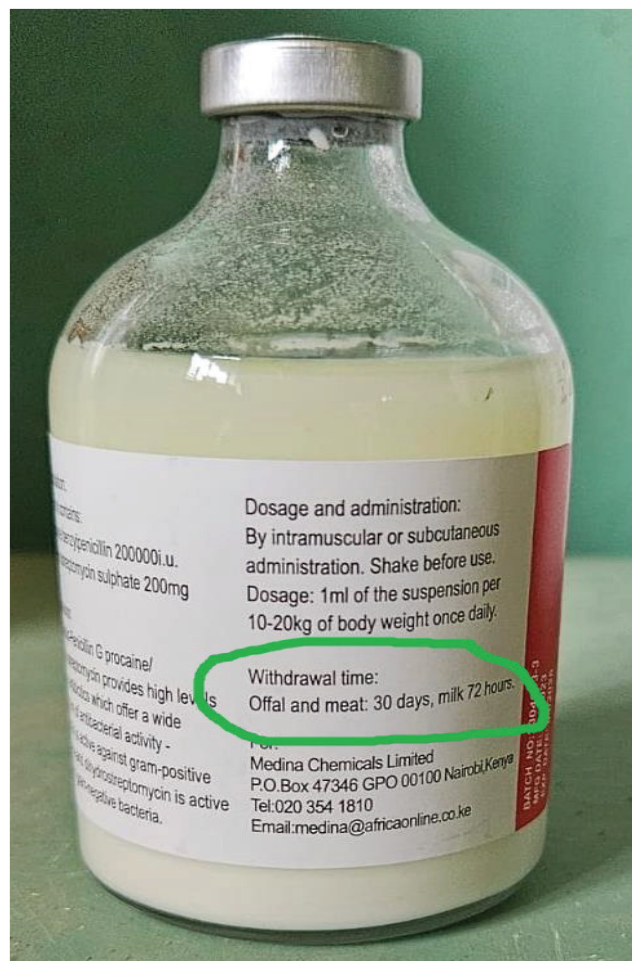
**Dosage** is how much to give. It is usually shown as the number of ml per kg of body weight.

**It is always best to seek the advice of a qualified veterinarian before treatment.**

**Withdrawal time:** is how long you should not mix this milk with any other or sell it – it is not for human consumption.

**This particular antibiotic has a 72 hour withdrawal period.**

It means that you must dispose of the milk for 3 X 24 hours or three full days from the time you gave the medicine.





# Prevention of antibiotic residue in the milk

## Follow instructions:

- Use the correct drug to treat the ailment.
- Administer the drug correctly:
  - Intramuscular - through the muscle,*
  - Intravenous - through the vein*
  - Intramammary- into the teat (usually mastitis and dry cow tubes)*
  - Intrauterine - into the uterus (usually pessaries)*
- Give the correct dose at the correct interval.
- Withhold the milk for the correct period and record what that period is. Different drugs may have different withholding periods.
- When possible, call a qualified vet to treat your cows and advise on the correct treatment.



## Clearly identify the treated cows:

Use these 2 methods to identify the treated cow.

1. Spray paint the udder with brightly coloured paint. This can be washed off once the treatment is complete.
2. Attach coloured tape to the cow's tail or legs.

## Isolate the treated cow:

Keep the treated cow separate from the others at milking, and milk her last. Then dispose of her milk separately.

## Keep records:

- Have a blackboard in the dairy and write up the name and number of the cow undergoing treatment and the withdrawal period.
- Write down the treatment and dates in the dairy record book or record on the dairy management software.
- Inform all the milkers about which cow is being treated and the withdrawal period. Do not assume that they will remember or know.

Source: Government of Western Australia: Dept of Primary Industries and Regional Development



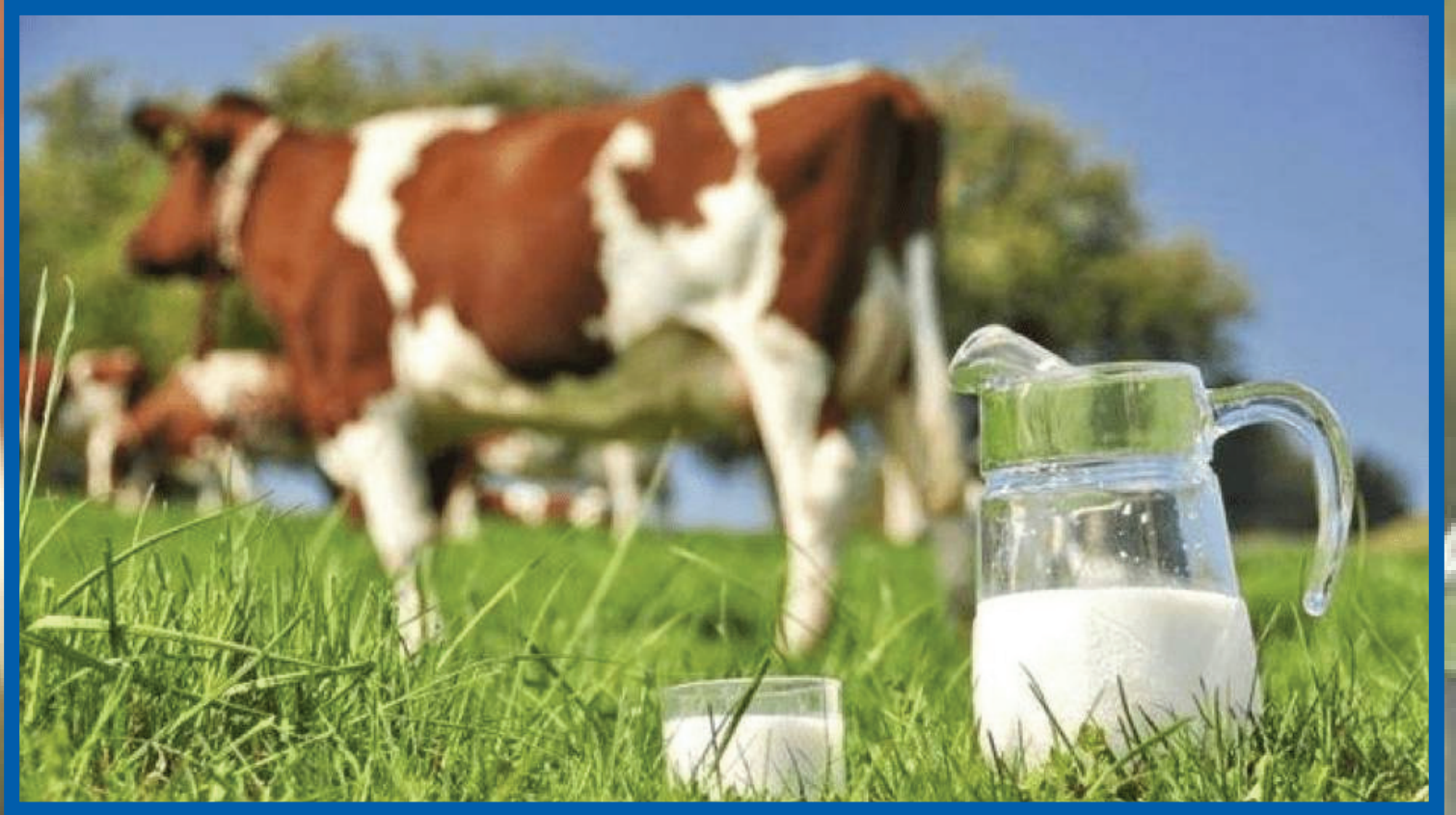
# SAFE MILK KENYA

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# FARMERS MAKE IT SAFE!

As the primary producer of milk, you can make it safe by controlling what goes into the milk your cows produce.





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# THINGS TO REMEMBER!

Aflatoxin comes from fungal spores. It is Invisible but highly poisonous. It attacks food crops in Kenya and can contaminate animal products through the food chain. If you feed your dairy cows contaminated feed, they will give you contaminated milk. You can reduce the risk of aflatoxin contamination through good agricultural practices, especially at harvest and storage times.

Any mouldy mate should be burnt. Do not feed it to your cattle or family. If you are worried about aflatoxin, it is possible to get an aflatoxin test done. The NCPB or a lab near you should be able to provide this. If you mix your own cattle feed, we recommend that you get it tested. You may think that your own crops are aflatoxin safe, but the proteins that you buy in may not be safe. This is often the case with cotton seed cake, or sunflower cakes. You can use a binder to decrease the levels of aflatoxin in your cattle feed. Ask a professional for advice on this.



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Ministry of Agriculture & Livestock Development

