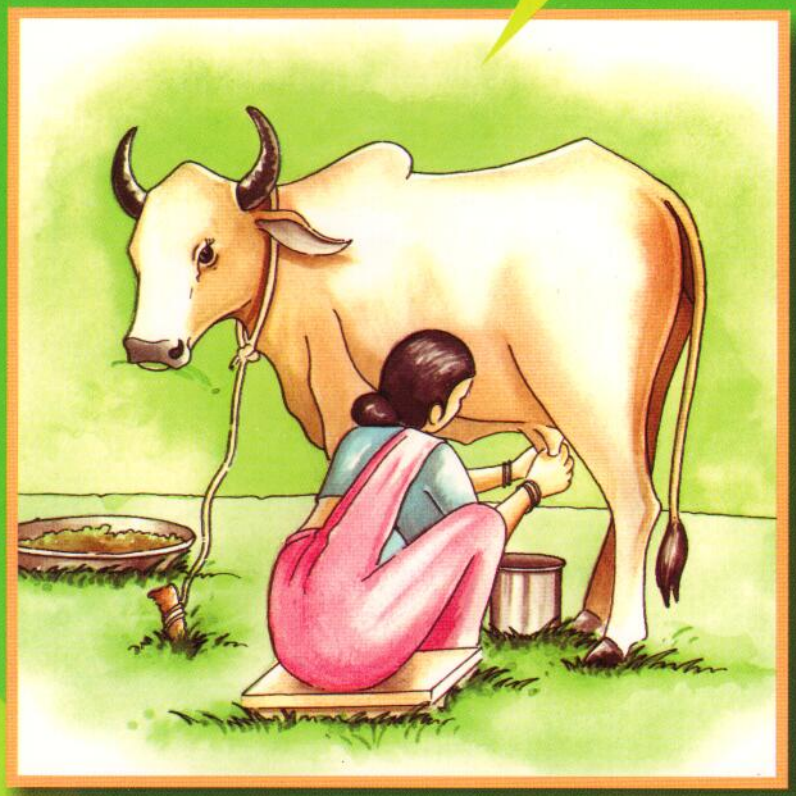
Story of Milk
A Cow's Tale



Clean Milk Production
At the Producer Level

Quality and Plant Management
National Dairy Development Board
Anand, India

Introduction

Our responsibility does not end with having a cow or a buffalo in our homes and delivering milk to the Dairy Cooperative Society (DCS). Our country is today the top milk producer in the world. In the face of increasing competition, it is necessary to ensure that the milk is of good quality and that it does not get spoilt or spread any disease. Using milk of this quality to make good products would benefit both us and our dairy. Each of us can contribute towards success in a larger way by taking the following small steps :

(1) Keep the animal clean and disease free

(2) Ensure that the place where the animal is kept is clean

(3) Provide potable drinking water to the animal

(4) Use clean stainless steel vessel for milking and storing milk

(5) Wash hands with soap before milking

(6) Wash udder with potable water and wipe it dry with a clean cloth before milking

(7) Discard one to two streams of foremilk from each teat before milking

(8) Ensure that the milker is clean, maintains personal hygiene and does not smoke or chew tobacco/pan* etc. during milking

(9) Feed the animal with green fodder during milking

(10) Wash the udder first with potable water and then dip the teats into a disinfectant solution after milking so as to safeguard against mastitis

(11) Take the milk in a covered stainless steel vessel to the Society at the earliest

(12) Keep the milk chilled as far as possible at the DCS level to prevent it from spoiling

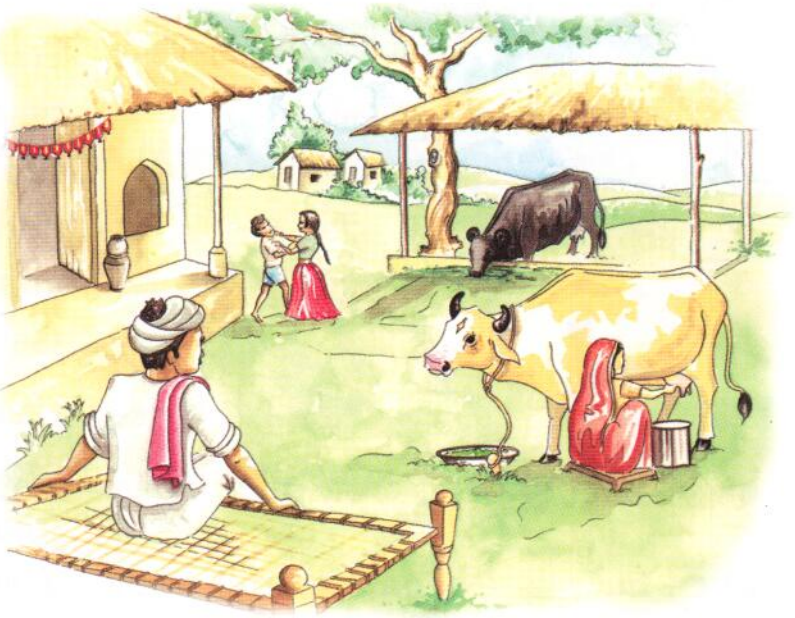
By following these simple tips, we can improve the quality of milk being sent to the Dairy Cooperative Society and that would benefit us all. Come, let us take up Clean Milk Production wholeheartedly.

General Manager
Quality and Plant Management
National Dairy Development Board
Anand - 388001, India

**pan - Hindi for betel leaf*

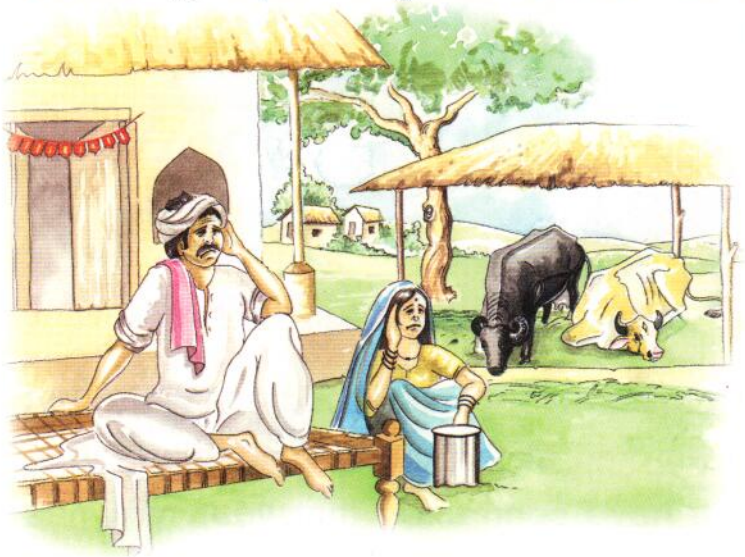
Story of Milk - A Cow's Tale

In a village called Rajnagar, lived Banwari, a cowherd. He had two little children and a lovely wife Radha. Banwari's was a happy family as his cow Ganga and buffalo Jamuna gave ample milk. Banwari sold Ganga and Jamuna's milk at the village Dairy Cooperative Society, where he was a member for several years. He earned well by giving milk to the Society and his house had all amenities. They lived well, the children studied at the village school and they celebrated each festival with fanfare. Banwari considered himself very lucky that he had a cow like Ganga and a buffalo like Jamuna. Radha and the children were also very attached to Ganga and Jamuna.



Banwari's happy family

Suddenly, a pall of gloom descended over this happy family. Ganga contracted some disease and became unwell. Banwari got her treated at home but to no avail and Ganga's milk reduced in quantity and deteriorated. Banwari's income dropped and the family were faced with all kinds of problems. Frustrated by this, Banwari decided to sell Ganga despite Radha's stiff opposition.



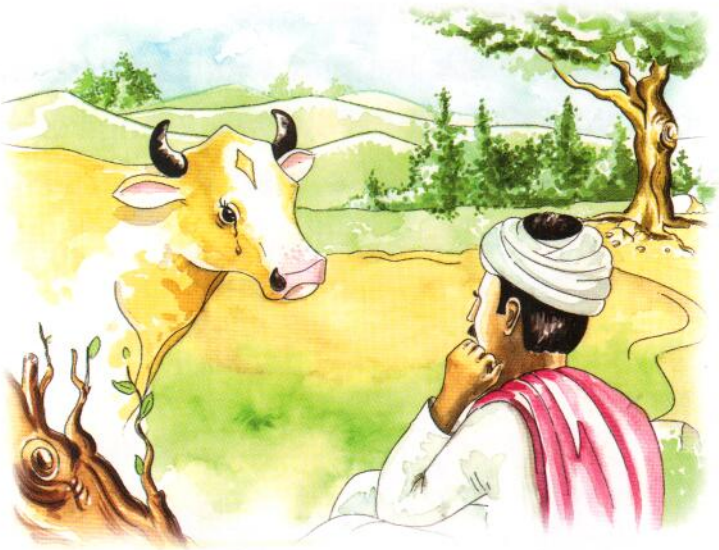
Ganga unwell, family worried, income drops

Those days an animal fair was being held in the nearby village. Banwari decided to sell Ganga at the fair and buy a new cow.

Banwari going to the fair to sell Ganga

The next day, Banwari got ready to leave for the fair along with Ganga. Radha and children held Ganga and wept. Banwari too got emotional but he controlled himself and after convincing his family, left with Ganga for the fair.

Half way through, Banwari stopped to take rest under a tree. Banwari was quite sad and when he saw Ganga's tearful eyes, he sighed and said, "Forgive me Ganga." Banwari was lost in thought, when he heard a voice calling, "Bhaiya**, do not separate me from your family, please do not sell me." He turned around. He could not believe his eyes when he saw Ganga talking to him. As if in a trance, he replied "What can I do Ganga, I am helpless. With your reduced milk output and inferior quality milk, my income has reduced. To raise my income, it is necessary that I sell you and buy a new cow. I am sad at the thought of selling you, but God knows what disease you have contracted that your milk has reduced and its quality deteriorated."



On the way, Ganga talks to Banwari

***Bhaiya - Hindi for brother*

"But is that my fault ?" asked Ganga.

Taking a deep breath Banwari said, "Well Ganga, that's destiny."

Ganga said, "This is not destiny. Sorry to say so, but you and Radha Bhabhi*** are at fault. You do not know how to take care of milch animals."

Banwari asked in astonishment, "What are you saying Ganga! We have been rearing cattle for generations."

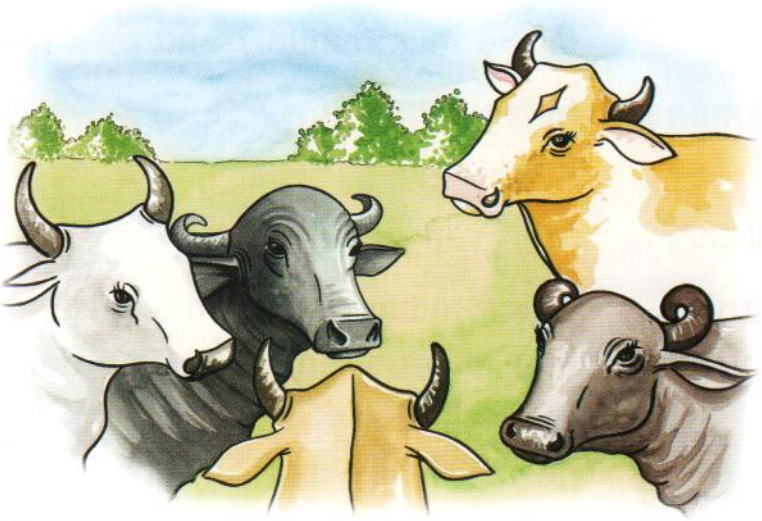
Ganga said, "To help you understand animal care, I will narrate the Story of Milk to you."

Banwari was puzzled, he asked, "Story of Milk?"

"Yes, the Story of Milk is about animal care so as to produce clean and fresh milk and how to maintain its quality."

"Who told you this story?" asked an astonished Banwari.

Ganga said, "One day Jamuna and I were grazing in the green fields, when we met two cows - Gauri and Paro and Champa the buffalo - who never fell sick and gave milk which was never inferior in quality."



Gauri, Champa and Paro narrate the Story of Milk to Ganga and Jamuna

"Oh! I see."

"Their owner has studied dairy science. Gauri, Paro and Champa told us about how he took care of them and what he did to keep the milk clean. I will narrate the same story to you."

"OK, go ahead" said Banwari.

****Bhabhi - Hindi for sister-in-law*

Paro : Sisters, I am sad at your plight. My sisters Gauri & Champa and I will tell you how your owner should take care of you and your milk.

Champa : Listen to us carefully and then tell your owner what we narrate. If the tips we give are followed, you will never fall sick.

Gauri : And you would be able to give better quality milk, which will raise the income of your owner, even more than before.

Ganga : Please tell us sister, we also desire the same.

Gauri : First let me tell you something about milk. If the cow or buffalo is healthy, the milk flowing out of its udder is of excellent quality.

Champa : To maintain the quality of milk, it is necessary to pay attention to the cleanliness and hygiene of the animal, animal shed, the animal owner, the milk vessels and related aspects. Also, the milk should be taken to the Society soon after milking. If these aspects are not taken care of, the micro-organisms in the milk multiply and milk quality deteriorates.

Jamuna : Micro-organisms? But I have never seen micro-organisms in the milk.

All Others : Yes, even we have not seen them.

Paro : Since micro-organisms are too tiny to be seen with the naked eye, they are also known as germs. They can only be seen through a microscope. Such micro-organisms deteriorate the quality of the milk.

Microscope to see micro-organisms

Ganga : Which means that if the tips on cleanliness you gave are followed, the quality of milk will remain good ?

Paro : You are right, sister. If a clean and healthy cow or buffalo is milked by a clean person using a clean vessel, and if the surroundings are clean, the milk will have fewer germs. The milk will also not have flies, dust and other impurities.

Champa : And if such milk is poured at the Society at the earliest, the quality of milk can be maintained for a longer time.

Paro : You will be surprised to know that if these aspects are not taken care of, then, by the time the milk is transported to the dairy dock, each drop of milk would have thousands of micro-organisms .

Jamuna : Oh God !

Gauri : Yes, and these micro-organisms double every 15-20 minutes which hastens the deterioration of milk quality.

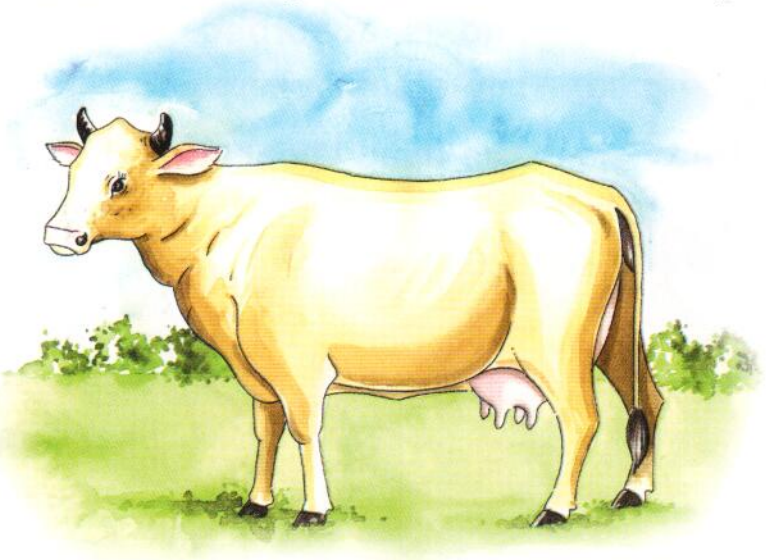
Jamuna : But how would our owner benefit from good quality milk?

Gauri : If the milk is pure and fresh, then those who consume it will remain healthy and patronise the same dairy.

Champa : Food products made from such milk will be of superior quality as well as tasty. These products will also last longer. This way the animal owner as well as the dairy would earn more money.

Ganga : Sister, please tell us the ways to keep milk clean.

Paro : First of all, the cow or buffalo must be maintained in good health. The animal shed should be clean. By the way, where are you kept?

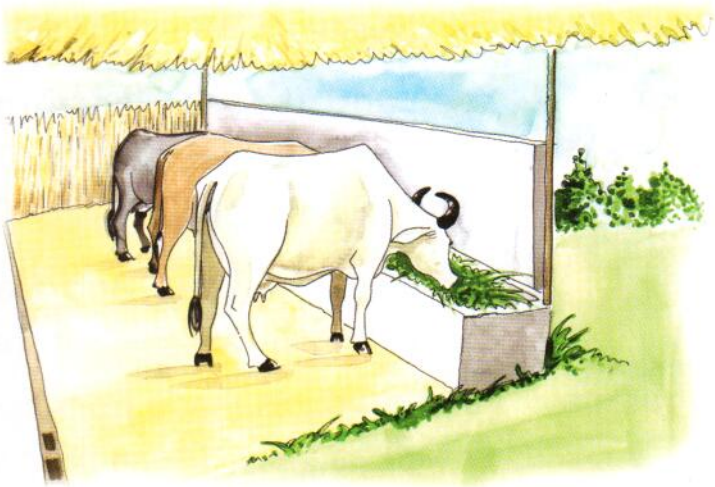


Clean and healthy animal

Jamuna : We are tied to a tree in front of the house. But the place where we sit becomes dirty due to accumulation of urine and dung. Nobody cleans it and we lie in our own waste.

Champa : The shed should have a roof and should be well ventilated and comfortable. It should have provision for potable drinking water.

Gauri : The shed as well as the surroundings must be kept clean. At the place of milking, fodder should not be accumulated. The place where cow or buffalo is kept should have minimum dust and clean floor. If the floor is tiled, it is still better.

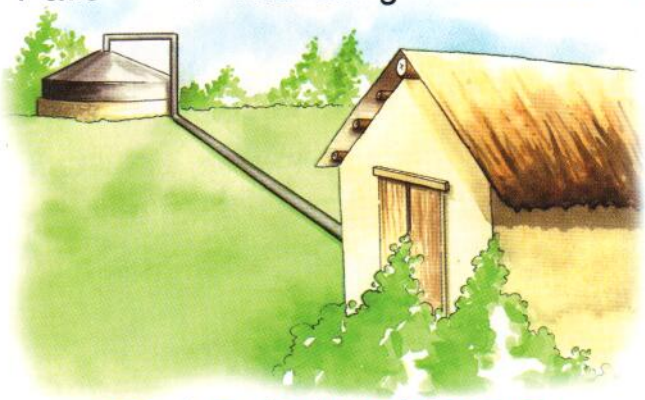


The cow or buffalo should be kept in a clean place and the floor should be pucca and comfortable

Ganga : What else should be done?

Gauri : The place where the animal is kept should be such that water or urine drains into a gutter and is absorbed into a soak pit.

Paro : The dung should be removed from the shed and put into a compost pit or gobar**** gas plant.

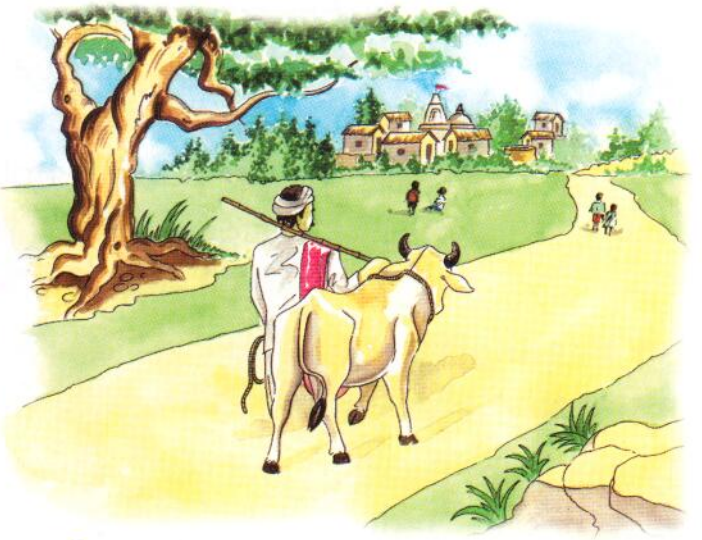


The dung should be taken away from the animal into a compost pit or gobar gas plant

Ganga was quiet after telling this part of the story. Banwari was listening to her attentively and was keen to know further. He asked Ganga, "Please tell me the whole story. What else did Paro, Gauri and Champa explain to you?"

*****gobar - Hindi for dung*

Ganga said, "They told me a lot of things and if we keep sitting here it will be evening. At home, Radha Bhabhi and the children will be worrying. Let's go home. I will tell you the rest of the story on the way."



Banwari walks back home with Ganga

Banwari agreed. He untied Ganga and started walking back home with her. After walking some distance, he stopped and recalled, "But we were going to the fair."

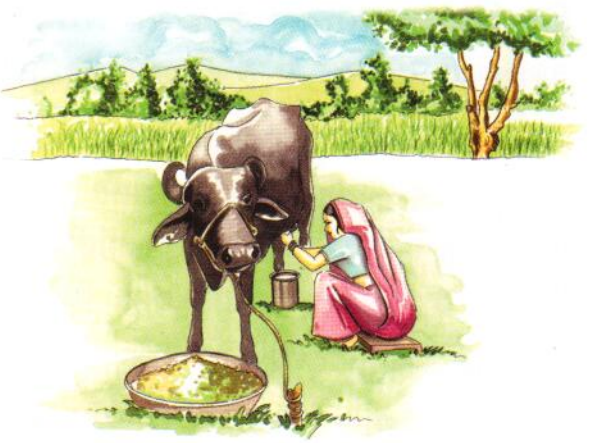
Ganga who was joyous at the prospect of going back home turned sad on hearing this and said, "Bhaiya, I was narrating this story to you so that if you take good care of me, I would never fall ill. This way I could give more, pure and nutritious milk and you would earn more money. Do you still want to sell me at the fair?"

Banwari thought for a while and said, "OK, let us try and take care of you the way you have explained. If you get well, you will stay with us forever. Come on now, tell me the rest of the story."

Ganga once again was happy and resumed the story, "After this, Champa and Paro told me about the milker."

Paro : If the milker is sick, it affects the milk.

Champa : Therefore if one has a cold, cough, diarrhoea, tuberculosis, skin disease or any other contagious disease or its symptoms, such a person should not milk the animals.



The milker should maintain good personal hygiene

Paro : If a wound, boil or rash is exposed or hand is bruised/cut, milking should not be done unless it is covered with a proper bandage.

Champa : The milker should be neat and tidy. The clothes should be properly washed and clean. While milking, the person or those around should not cough or sneeze. During this time they should neither smoke nor chew pan, tobacco, pan masala***** etc.

On hearing this, Banwari said "Really Ganga, we do make such mistakes. Henceforth, while milking we will carefully follow this advice."

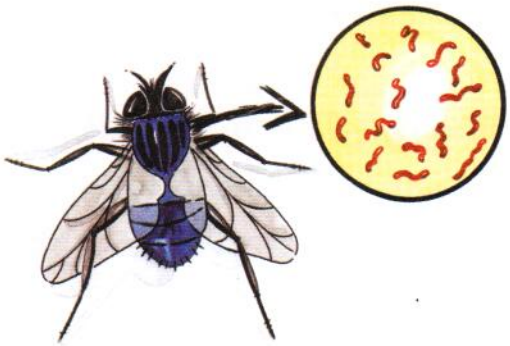
By this time, Banwari and Ganga had reached home. On seeing Ganga back home, Radha and children were very happy. Radha exclaimed "Oh! You got Ganga back?" After dinner when everyone had gone to bed, Banwari narrated to Radha the Story of Milk as told by Ganga. Radha was both astonished and happy. Next day, when Banwari and Radha went to Ganga, Radha said, "Ganga, your Bhaiya narrated the Story of Milk to me. Do not worry, we will take good care of you just the way your friends have advised."

Ganga's eyes were filled with tears of joy. She said "Bhabhi, I want to serve you for the rest of my life, but there are other aspects that have to be taken care of, so that Jamuna and I remain healthy and give pure, nutritious and good quantity of milk."

Radha said, "Ganga, what other aspects do we have to take care of?"

Ganga explained, "The housefly is our enemy. The fly carries thousands of germs on its body which transmit many diseases and spoil the milk."

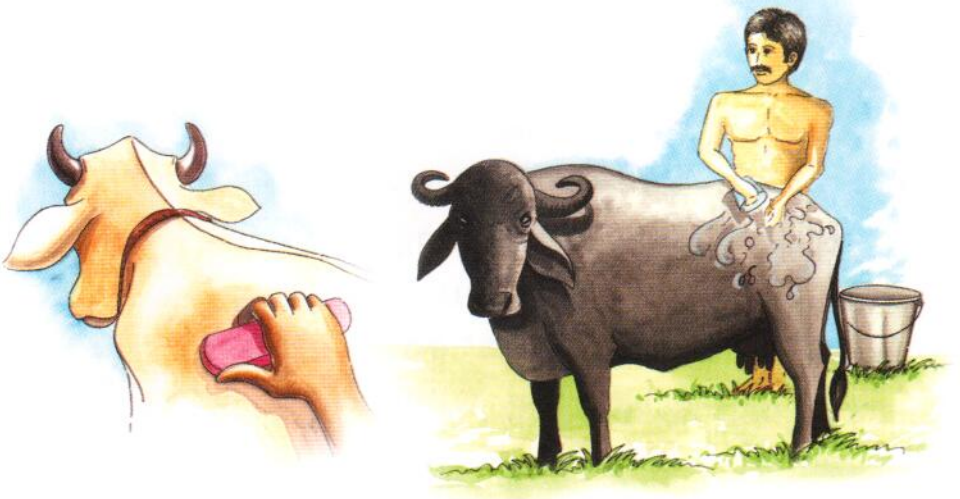
Radha asked, "Is that so! That means guarding milk from flies will keep the milk clean?"



About 11 lakh micro-organisms can be found on the body of a housefly

******pan masala - Hindi for flavoured betel nut mix*

Ganga : Yes, we have to guard the milk against both flies and dirt. If the body of a cow or buffalo is dirty, millions of micro-organisms can be found on it.



Before milking, use a soft brush to keep the animal clean during winter and during summer months use water

Hence it is necessary to clean the animal before milking. During summer months, clean the animal with water and during winter, use a soft brush to scrub off micro-organisms from the hair and body.

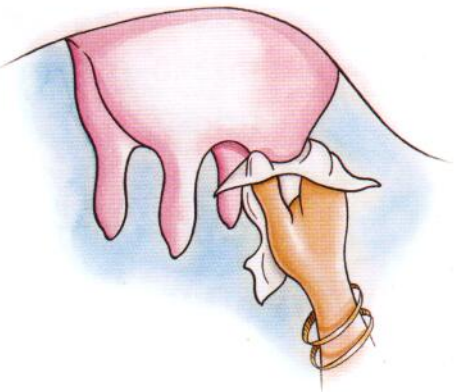
Radha : Ok! I will take care of it.

Ganga : For clean milk, the milking vessel should be cleaned and washed with soap. It must be ensured that no dirt/deposit remains inside. After cleaning it must be immediately placed upside down on a clean surface to dry.

Radha : Fine.

Ganga : Before milking, the udder of the cow and buffalo should be washed with potable water and wiped with a clean cloth.

Radha : But, I do it the same way.

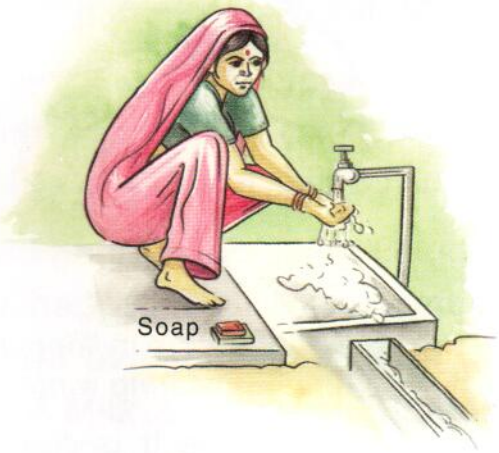


Before milking, the udder of the cow and buffalo should be washed with potable water and wiped with a clean cloth

Ganga : You wipe our udder with your saree, which could be dirty, whereas it is necessary to use a clean cloth. While milking, one or two streams of foremilk from each teat should be discarded. This way, the germs collected in the teats are removed.

Before milking, one-two streams of foremilk from each teat should be discarded

Before milking, hands should be washed clean with soap.



Before milking, hands should be cleaned with soap

The milker should never dip fingers into milk nor apply oil to the udder.

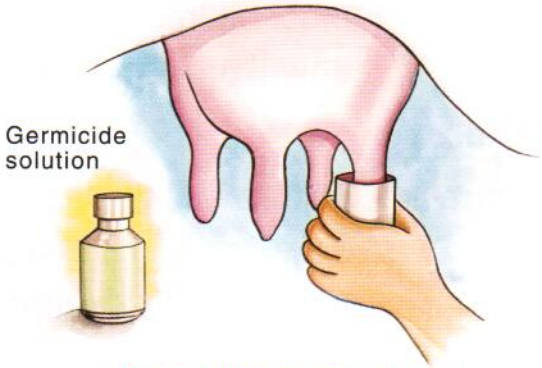
Fingers should not be dipped in milk

While milking, no parts of the body or cloth should touch or come in contact with the milk or milk vessel.

Banwari : OK!

Ganga : Ensure that not even a drop of milk remains in the udder as residual milk accelerates the growth of micro-organisms in the udder. This increases the possibility of the animal contracting diseases.

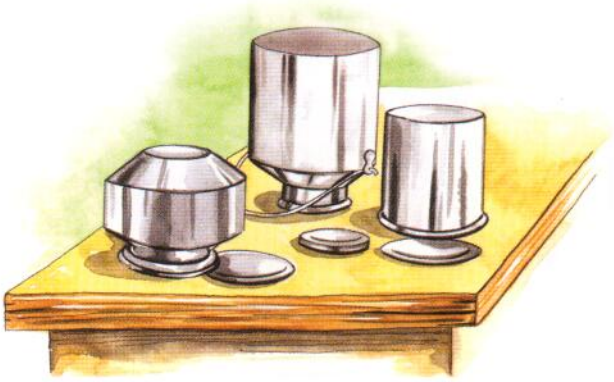
After milking, each teat should be cleaned with water and dipped in germicide (Iodophor) solution.



After milking, each teat should be cleaned with water and dipped in germicide solution

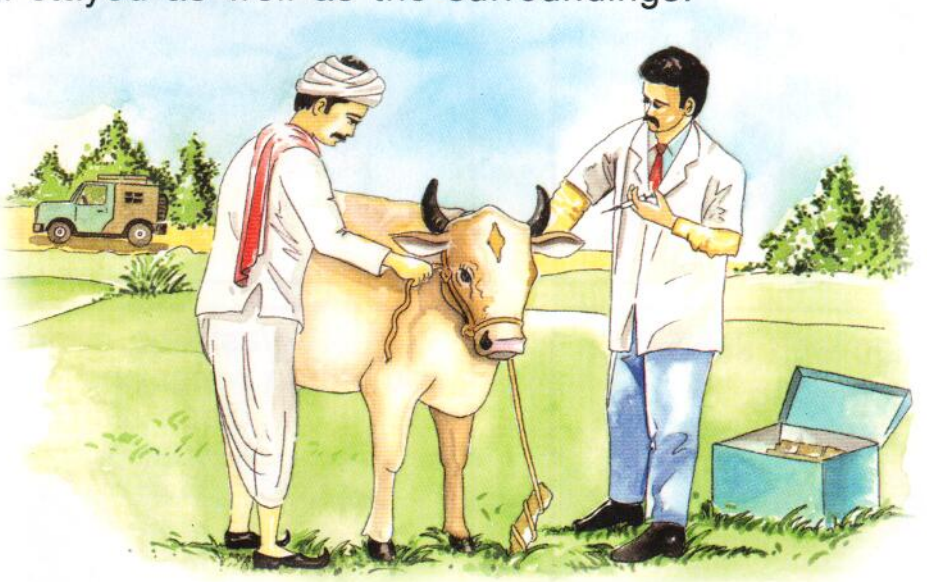
Banwari : OK, I will take care of this too.

Ganga : The milking pail and the vessel in which milk is taken to the Society should be of stainless steel. Its lid should be tight fitting so that flies, dirt and other impurities do not fall into the vessel. Only if the milk is delivered to the Society at the earliest, it remains good.



After cleaning, invert utensils on a clean surface to dry them

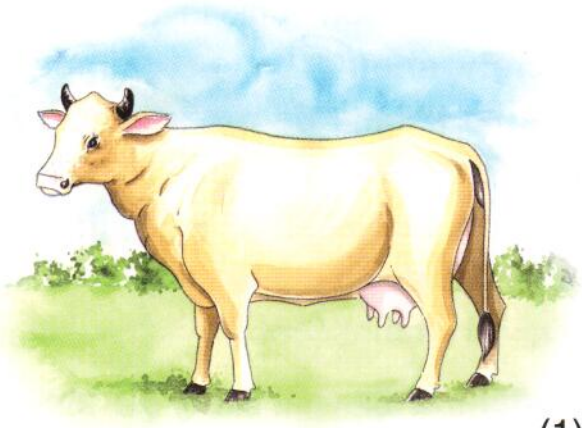
After listening to the Story of Milk, Banwari and Radha followed all that Ganga had told them. First, they got Ganga treated by a veterinary doctor. On receiving proper treatment, Ganga soon recovered. Radha strictly followed all the tips Ganga had given. Radha and the children cleaned up the shed where Ganga and Jamuna stayed as well as the surroundings.



Ganga was treated and Banwari's family was happy again

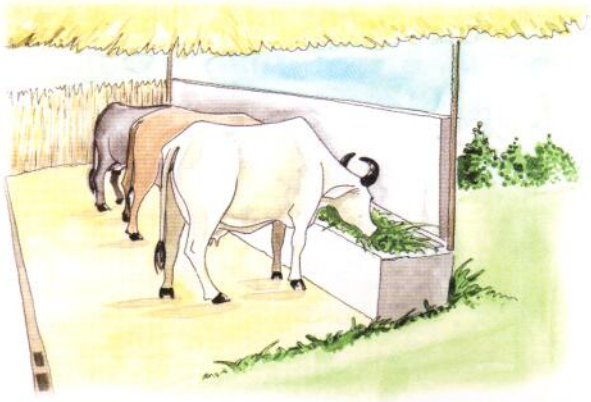
With this, Ganga produced better quality and larger amount of milk. Banwari's family started earning more money and like earlier days, there was happiness all around. Now Banwari and Radha began thinking of buying more milch animals.

Clean and healthy animal



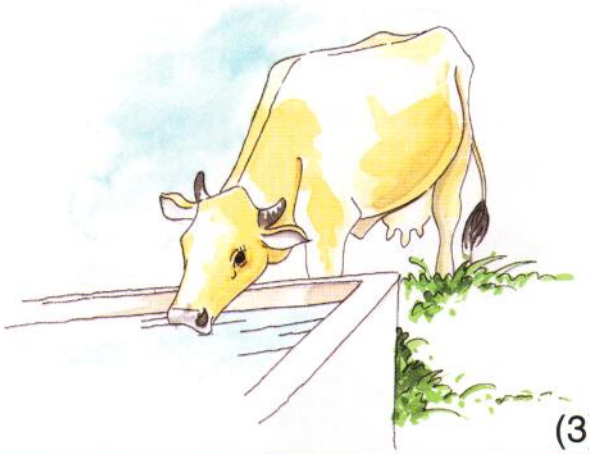
(1)

Neat and clean place to keep the animals



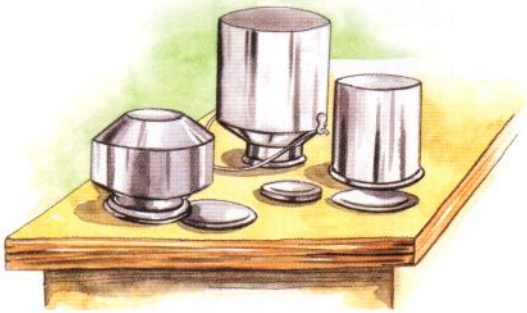
(2)

Potable drinking water



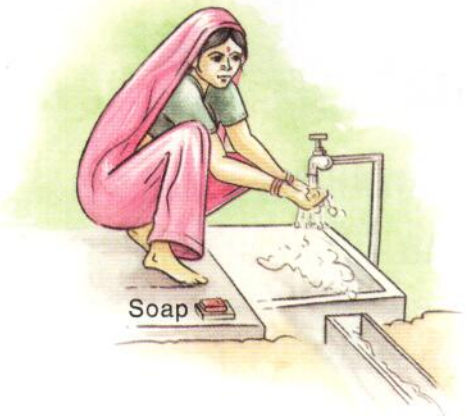
(3)

Clean stainless steel milk vessels



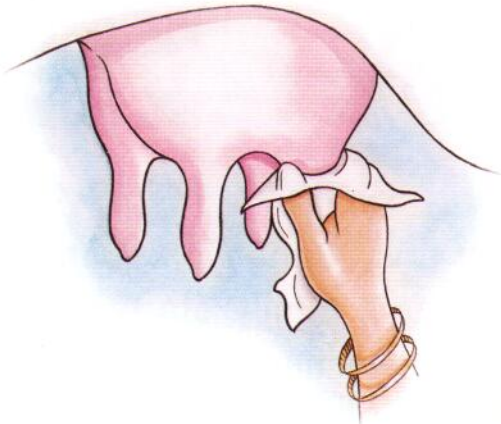
(4)

Clean hands with soap before milking



(5)

Wash the udder with clean water and wipe with a clean cloth

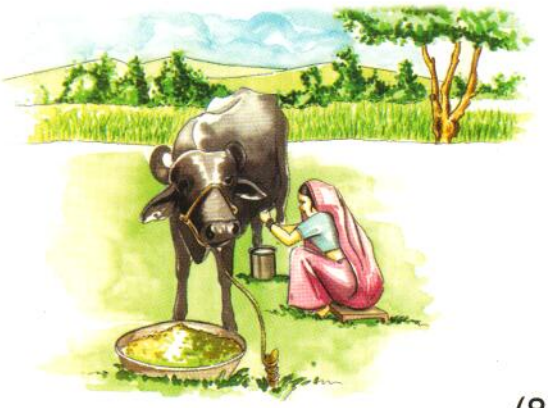


(6)

Discard one or two streams of foremilk from each teat before milking

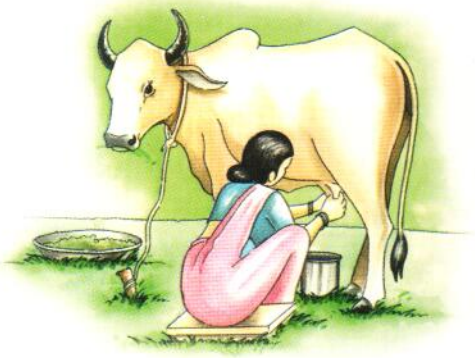
(7)

Clean and healthy milker



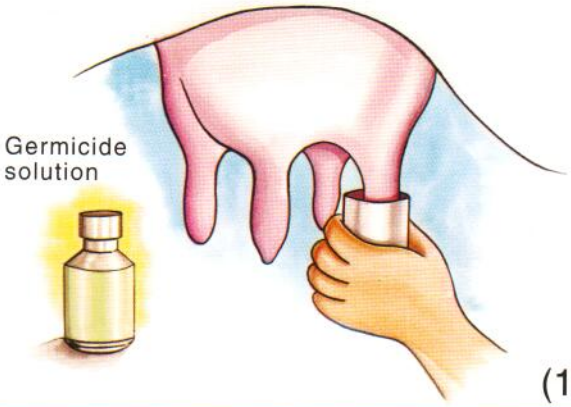
(8)

Feed green fodder to the animal during milking



(9)

Clean udder with water and dip each teat in germicide solution after milking

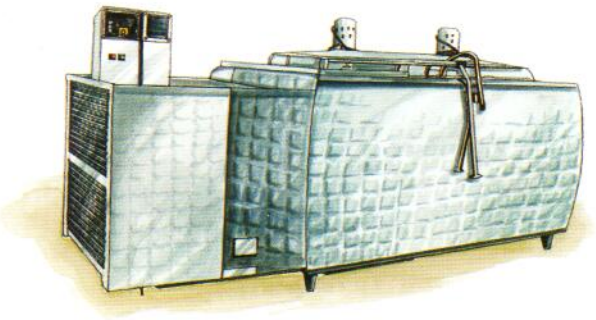


(10)

Take milk to Society in a covered vessel at the earliest

(11)

Milk cooling machine



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Can Melody Mean More Milk !

Puranas extol music as divine
The Ayurveda sees music
as a sublime therapy for even
the severest disease
Research shows that animals
respond to music
Harmonious environment makes the
cow/buffalo relaxed and peaceful
Play serene music during
milking and discover the
results for yourself !

English version of the original Hindi book **Doodh Ki Kahani, Gai Ki Zabani**
published by NDDB, Anand, India.