

## Dairy Hub Training Booklets

### Titles

- |  |                              |
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| 1) Importance of Water                     | 9) Breeding                  |
| 2) Fodder                                  | 10) Calf Rearing             |
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## Mastitis

“Hygienic environment & better care of animals ensures protection from mastitis”



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Dairy Hub is a Community Dairy Development Programme, which has been initiated for the development of small farmers. The aim of this programme is to keep farmers informed about modern ways of dairy farming, to provide practical help for improving their skills and to increase production of their animals. This programme will increase not only the average production of animals but also the income of farmers, and thus decrease considerably the rate of poverty in rural areas. This booklet is a part of this programme.



Yours truly,

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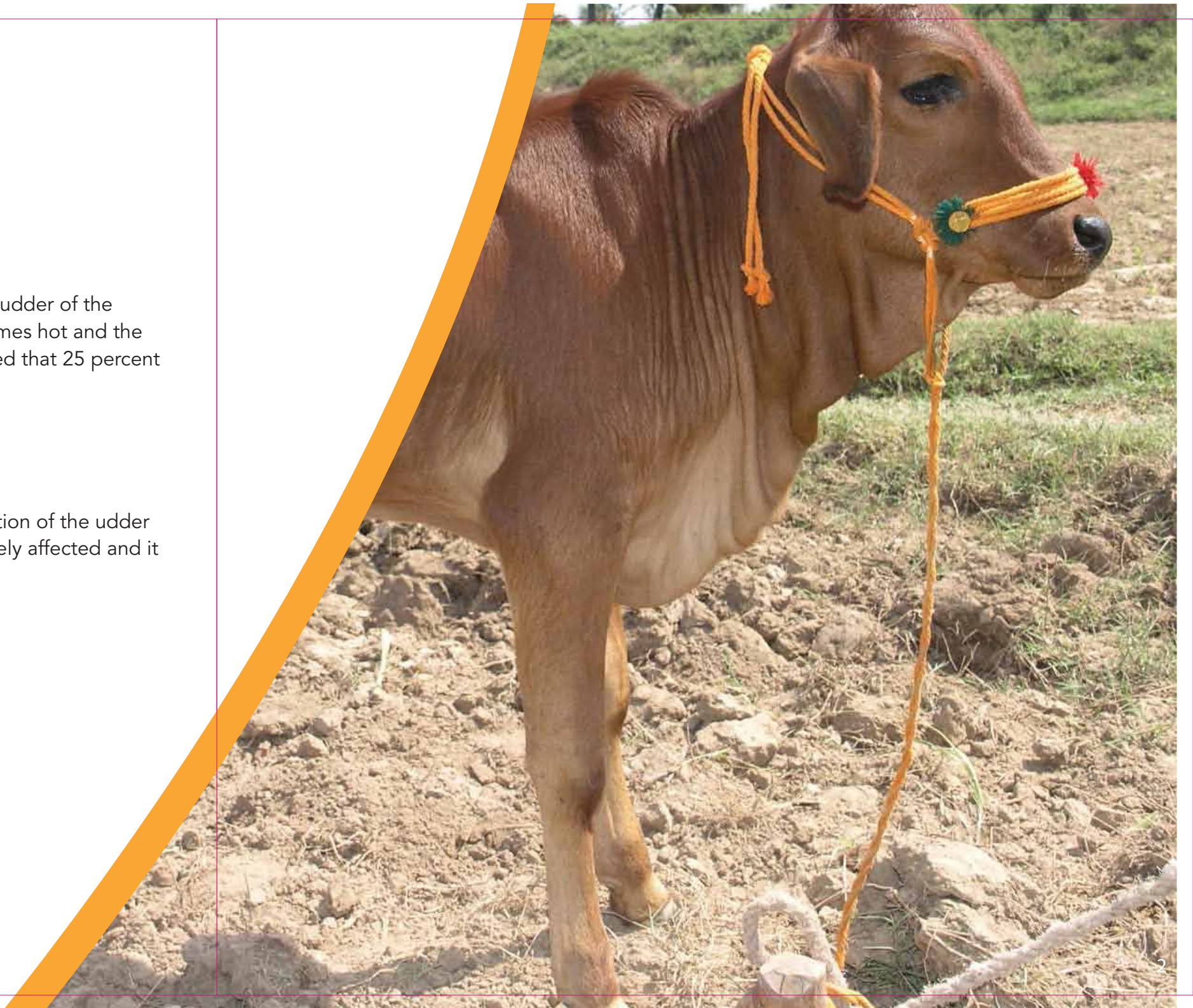
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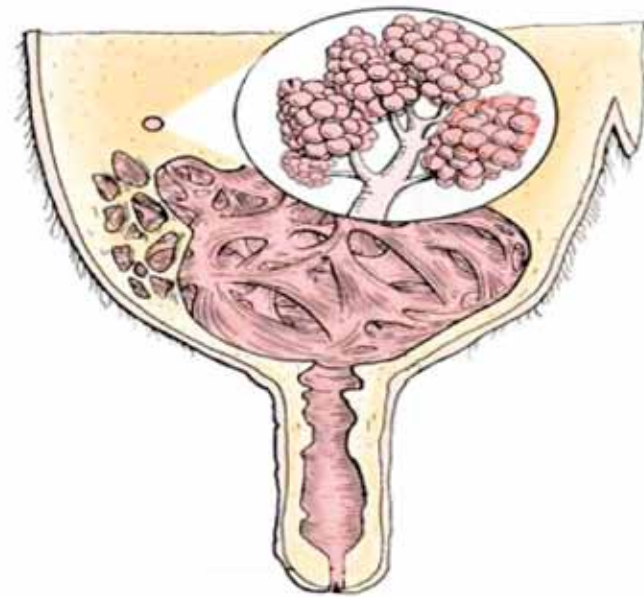
## **Mastitis:**

This is one of the most dangerous contagious disease of dairy animals. The udder of the animal inflames and one or more than one teat is affected. The udder becomes hot and the animal may suffer from fever and milk production is decreased. It is estimated that 25 percent milking animals suffer from Mastitis.

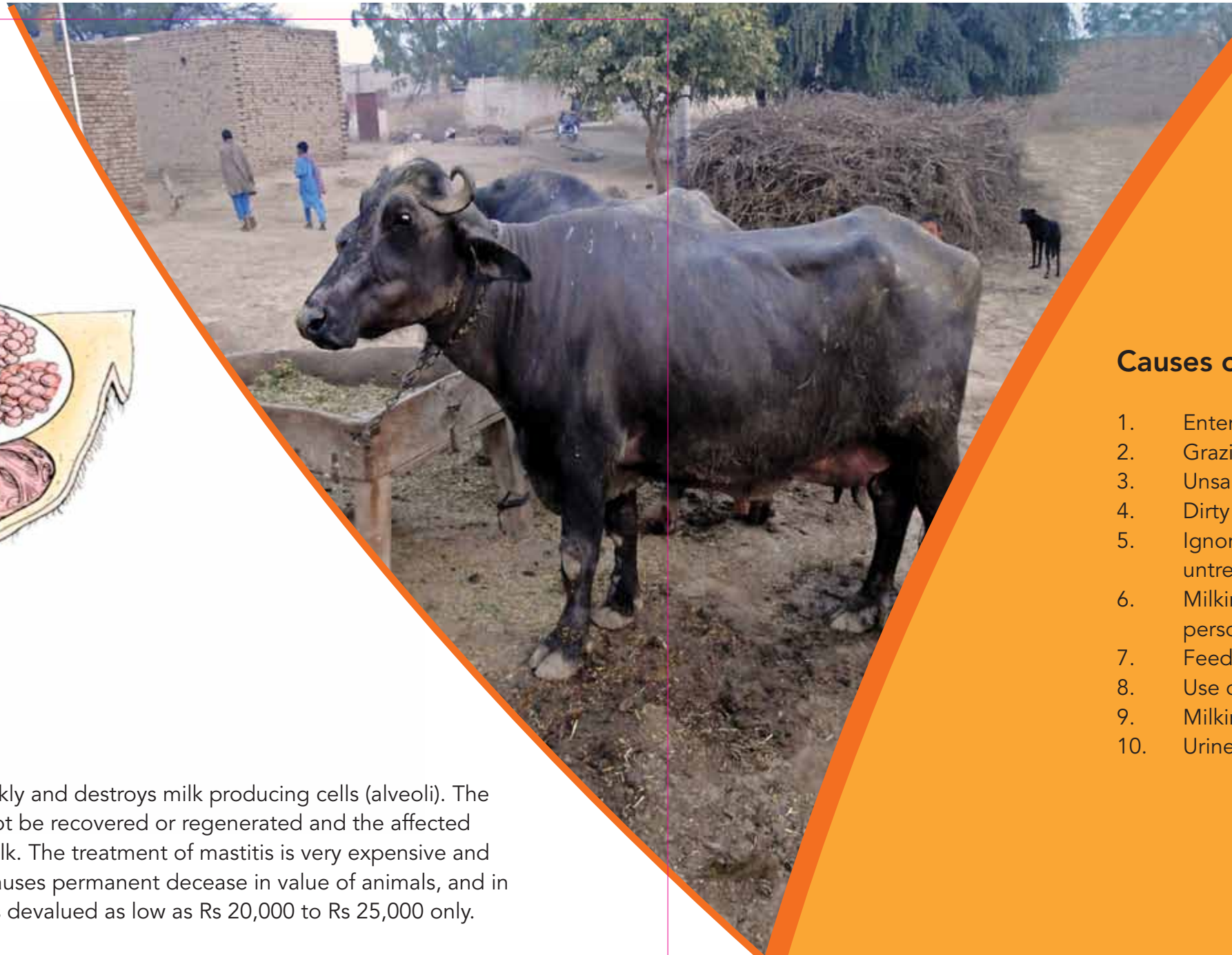
## **Economic losses due to Mastitis:**

The daily milk production of the animals suffering from mastitis or inflammation of the udder decreases considerably – up to 50 percent. The quality of the milk is adversely affected and it cannot be used or sold.





This disease spreads very quickly and destroys milk producing cells (alveoli). The cells which are lost once cannot be recovered or regenerated and the affected animal will always yield less milk. The treatment of mastitis is very expensive and potential delay in treatment causes permanent decrease in value of animals, and in the end even an elite animal is devalued as low as Rs 20,000 to Rs 25,000 only.



### Causes of Mastitis Spread:

1. Entering of microbes into the teat.
2. Grazing at unhygienic places.
3. Unsanitary shed internally and externally.
4. Dirty utensils, pieces of cloth and rough floor.
5. Ignoring teat injuries and leaving them untreated.
6. Milking of the animal by inexperienced persons.
7. Feeding calves after milking the animals.
8. Use of fodder with fungal growth.
9. Milking the animals with dirty hands.
10. Urine and dung in the shed.

## Pathogenesis of Mastitis:

### How infection occurs?

- The teat opening remains open for about 25 minutes after milking.
- Microbes enter the udder through the teat canal.
- Microbes grow in the udder in the form of a colony.
- After growth, these microbes excrete a poisonous material which destroys milk-producing cells, which adversely affects the production and quality of milk.
- The udder inflames due to the microbes and their excretions, and the animal may suffer from fever.

### Places where microbes grow:

#### These microbes grow rapidly in the following conditions:

1. Affected udder
2. Unhygienic environment
3. Heaps of dung in or around the shed
4. A dirty, dusty or muddy place
5. Unhygienic sitting place of animals



## Types of Mastitis:

There are basically two kinds of Mastitis:

1. Clinical Mastitis
2. Sub-clinical Mastitis

### 1. Clinical Mastitis

1. One or more than one teat or udder is inflamed in this kind of Mastitis.
2. Udder turns reddish and the animal feels pain.
3. Milk production decreases considerably, flakes in milk are visible and the animal suffers from high fever.
4. Sometimes no milk production.
5. If not treated on time, one or more teat becomes fibrosed and the udder shrinks.
6. The milk becomes saline.

**Note:** In such conditions, consult the doctor immediately.

### 3. Sub-clinical Mastitis:

1. This kind of Mastitis is more dangerous than Clinical Mastitis because no signs are visible. There is no inflammation on udder and milk-production does not stop.
2. The animal does not even suffer from fever in Sub-clinical Mastitis. But it becomes sluggish and lethargic and milk-production decreases considerably.
3. The quality of milk is not affected but it tastes saline.
4. The farmer does not know the presence and intensity of this disease. But its diagnosis is very easy. The best diagnosis can be done with the CMT (California Mastitis Test).

### California Mastitis Test (CMT):

- Remove the plastic tray consisting of four cups from the CMT kit.
- Mark the plastic tray according to the four teats so that the affected teat can be recognized later on.
- Pour some milk in the plastic tray from each teat before milking the animal.
- Take about 2 ml milk from each teat into each cup. Do not mix the milk from different teats.
- Remove the lid from the bottle of the solution and pour it into each cup.
- Mix the milk in the tray with the CMT solution.
- The change in colour and the condition of the milk show the presence of Mastitis.
- Compare the colour of the milk with the given chart to determine the intensity of Mastitis



## Use of Depal Solution:

Depal is a solution of iodine. The teat is dipped into it to stop the entrance of microbes.

- Iodine is useful for killing microbes.
- Depal is applied to each teat after milking it, to protect it from disease.
- Fill the dip cup up to the mark of 50 ml with the Depal solution.
- Add 250 ml water in the dip cup. Mix it well. Now the solution is ready for use.
- A sort of membrane appears on the teat when Depal is applied, after milking. It remains in place for 45 minutes, preventing microbes from entering the teats.

## Prevention of Mastitis

The disease of Mastitis usually spreads due to carelessness of farmer in taking care of animals. It can be eradicated if:

- Shed and the utensils of daily use are cleaned and washed regularly.
- Keep heaps of dung away from the shed.
- Animals are not milked at a dirty and dusty place.
- The animal is milked completely, with a closed fist.
- Wash and dry the udder and teats well after milking the cow.
- Do not allow the animal to sit on the ground soon after milking.
- Remove rings from your fingers before milking the animal.
- Feed calves before milking.
- Time span between two milkings should be about 12 hours.



- The person milking the animal should have clean clothes, hands and short clipped nails.
- Apply Depal solution to teats each time the animal is milked.
- Separate the affected animals from the healthy ones. Milk it after the other animals are milked, and do not mix its milk with milk from healthy animals.
- Take special care of the teats of pregnant animals. Insert antibiotics which have long-lasting effects because this would protect the animals from mastitis in future milking.
- Consult the doctor immediately in case of injury on teats.
- Do not let the milk fall on your hands during milking the animal. Also do not apply the milk of any other teat or milk from the bucket or cream to any teat. In case of a cut on the teat, apply Vaseline ointment on it.
- For adequate immunity against Mastitis and other microbial diseases, provide balanced feed to all animals.



# Glowing livelihoods through growing dairy



Community Dairy Development Programme

Dairy Hub is a dairy development programme conceptualized by Tetra Pak and implemented by dairy processors. This programme aims to educate and empower dairy farmers by providing them training, advice and veterinary services. Thanks to Dairy Hub, today dairy farmers are full of hope for future and so are we.



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Dairy Hub is an important step by Tetra Pak towards the well-being of dairy-farmers. It will certainly open new vistas of progress for dairy farmers. I congratulate Tetra Pak on the opening of a new era for the prosperity of dairy farmers. All these training booklets are a part of this developmental programme and they have been written specially for the help and guidance of dairy farmers.

Based on various topics, these training booklets contain important pieces of information and suggestions which will help the farmers in better rearing of their animals, protecting them from different diseases and to increase their milk production.

I do hope that this effort by Tetra Pak will be useful for the prosperity of the farmers and help them solve their problems regarding health of their animals.

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