

Dairy Hub Training Booklets

Titles

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| 2) Fodder | 10) Calf Rearing |
| 3) Wheat Straw Enrichment | 11) Diseases and Health |
| 4) Silage (Fodder Pickle) | 12) Mastitis |
| 5) Hay Making | 13) De - Worming |
| 6) Balanced Ration | 14) Mechanized Dairy Farming |
| 7) Dairy Farming as an Enterprise/Business | 15) Vaccination |
| 8) Heat Stress | |

Calf Rearing

“Today’s Calf – Tomorrow’s Cow”



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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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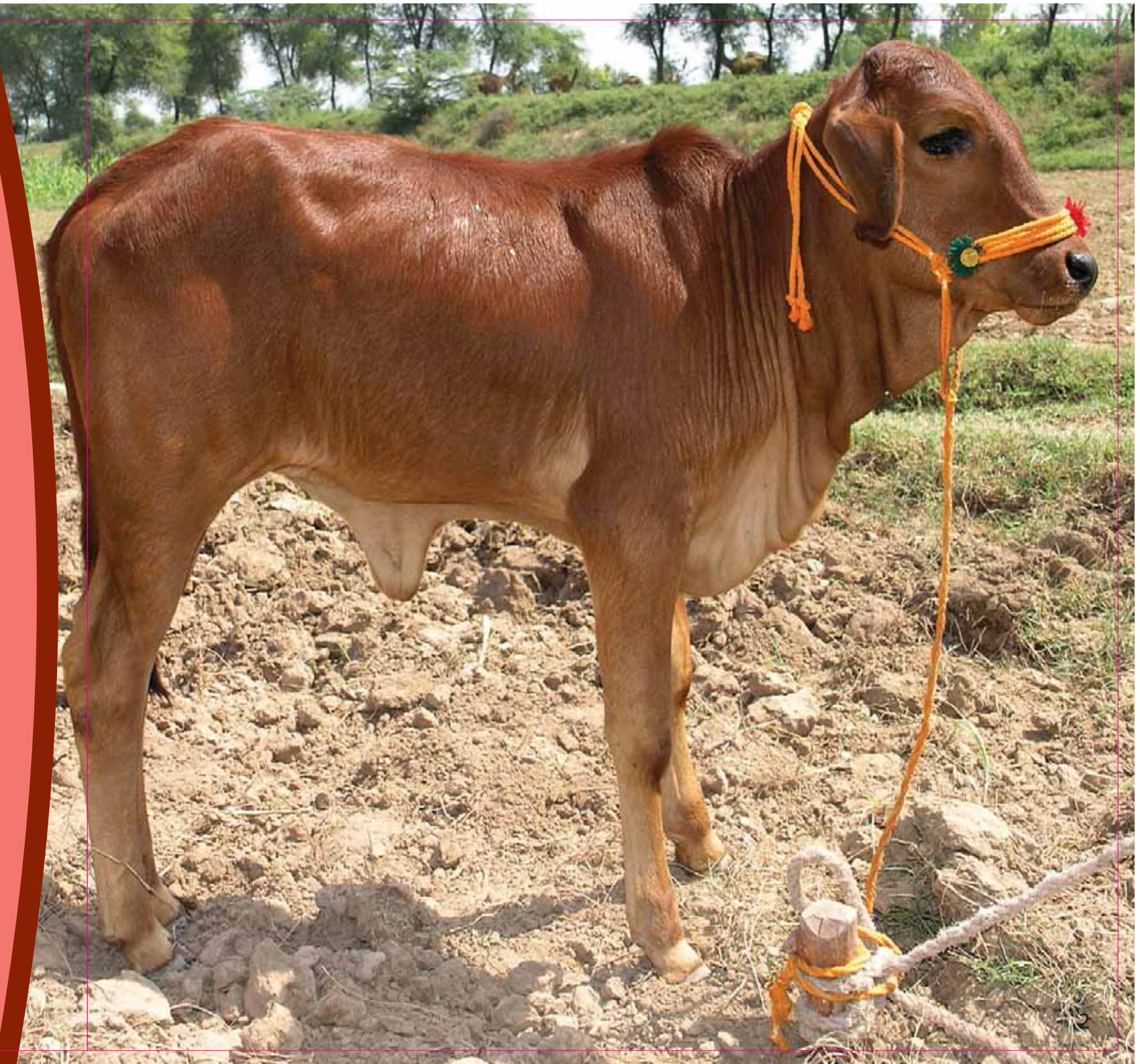
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There are approximately 15 million young animals in Pakistan presently. Calves are being reared according to centuries-old traditional methods. That is why we are getting a comparatively lesser yield of milk and meat from the animals. Moreover, the country is losing a big chunk of milk and meat because of an approximately 30 percent mortality in young calves. The basic reasons for their mortality are the traditional style of breeding, shortage of feed, lack of knowledge about modern dairy farming methods and lack of capital for investment, etc. If calves are reared according to modern methods, they are a potential source of income in farming.



The farmers who wish to progress in dairy farming must make arrangements for the best growth of their calves.

"Today's Calf is the Cow of Tomorrow"

But it is important to know how a female calf grows into a good milk-producing cow.

It is important to know for the best growth of calves

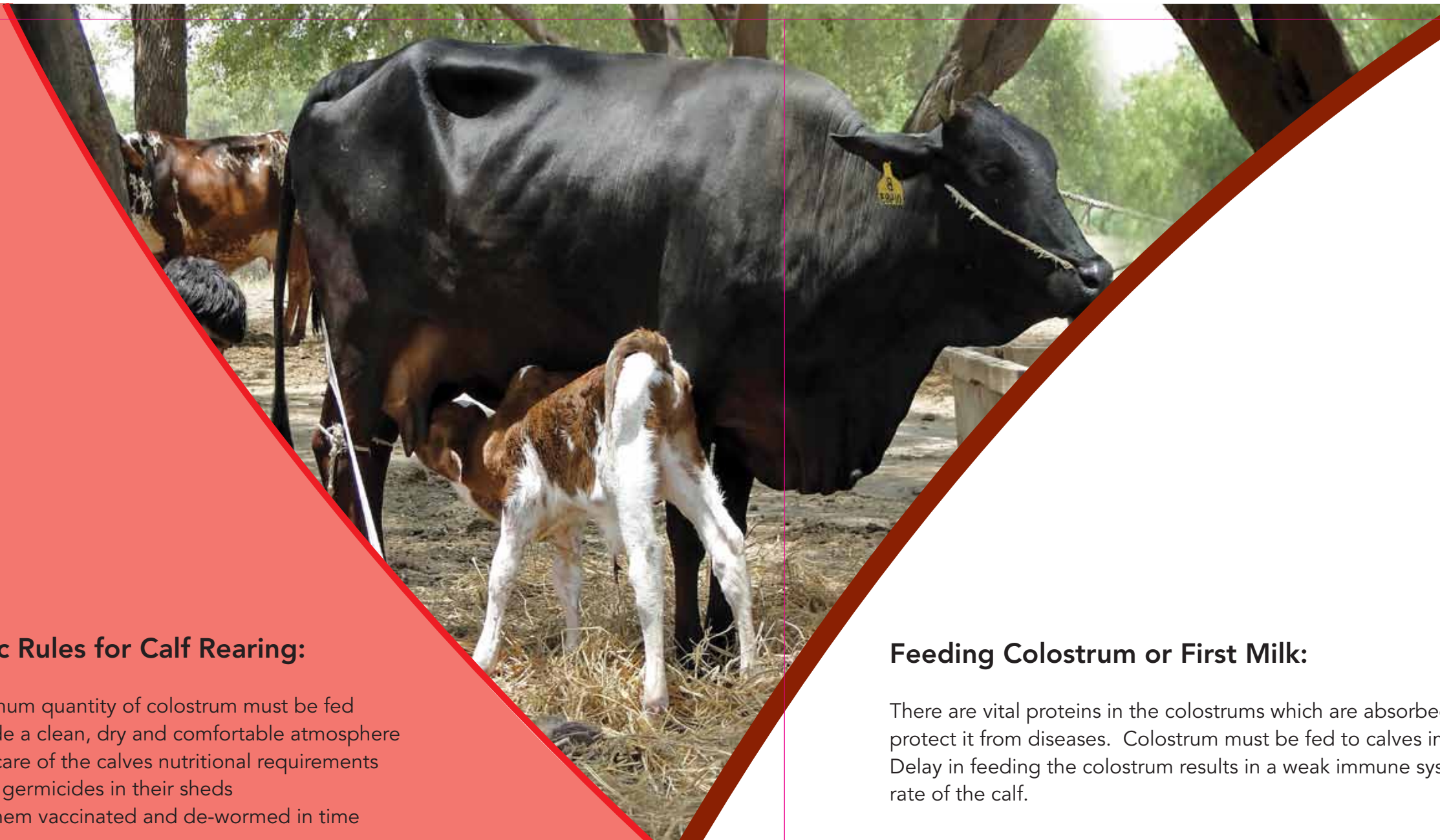
1. What to feed them ?
2. How to keep a record of their growth ?
3. How to solve their health problems ?
4. How to maintain a good shed for them ?



Birth of Calves:

New born calves have less immunity and they can be adversely affected by harmful microbes within minutes of their birth and before they get immunity through colostrum. The calving pen should be dry, comfortable, neat and clean. Protect it from unhygienic circumstances after its birth. If possible, change the shed for the birth of the calf to protect it from diseases. Clean its mouth and nostrils immediately after its birth, to help it breathe easily. Cut its navel cord and disinfect it with antiseptic solution.





Five Basic Rules for Calf Rearing:

1. Maximum quantity of colostrum must be fed
2. Provide a clean, dry and comfortable atmosphere
3. Take care of the calves nutritional requirements
4. Spray germicides in their sheds
5. Get them vaccinated and de-wormed in time

Feeding Colostrum or First Milk:

There are vital proteins in the colostrums which are absorbed in the intestine of a calf and protect it from diseases. Colostrum must be fed to calves immediately after their birth. Delay in feeding the colostrum results in a weak immune system and decreased growth rate of the calf.

The colostrum for the calf should be equivalent to one tenth of its weight. Two litres of colostrum must be fed within an hour after its birth and upto 4 litres within the first 24 hours.

Problems related to Calf Rearing :

1. High mortality rate of calves (30-40 percent)
2. Low growth rate
3. Expensive feed
4. Delayed puberty
5. Decrease productive age
6. Slaughtering of young calves

Causes of Problems in Calf Rearing :

1. Delay in feeding them colostrum
2. Lack of hygienic conditions
3. Shortage of milk and fodder
4. No balanced feed
5. Lack of knowledge about modern farming techniques
6. Poor financial condition of farmers

The pores of calves' intestine close after 24 hours and their ability to absorb important proteins (anti-bodies) stops. Give the calf clean water when it is of 2-3 days age. Provide a separate pot for feed and water to each calf, and they must be cleaned daily.

Feed calf starter to calves when they are 4 days old, because calf starter starts growth and activity of the rumen, decreases loose motions and makes weaning easy.

Formula for Calf Starter / Solid Feed

No.	Ingredients	%
1	Maize meal	46
2	Soybean, meal	17
3	Canola, meal	11
4	Oil	3.5
5	Rice polish	13
6	Molasses	6.5
7	Mineral mixture	1
8	Vitamins powder	1
9	DCP powder	1
	Total	100

It is important to encourage or train the calf for calf starter consumption. Bring the feed near its mouth and put some feed in its mouth manually. Continue until it starts eating on its own.

Feeding Chart:

Age	Milk	Calf starter	Water	Fodder
Soon after birth	2-4 kg colostrum	-	-	-
1-2 days	2-4 kg colostrum	-	-	-
2-4 days	2-4 liter milk	-	Yes	-
4-7 days	3-5 liter milk	50-100 gram	Yes	-
7-14 days	3-5 liter milk	100-150 gram	Yes	-
2-8 weeks	decrease quantity of milk gradually	1-1.5 kilo	Yes	Soft fodder
9 weeks	0	1-1.5 kilo	Yes	Soft fodder/ concentrate

Basic Health Problems of Calves:

The mortality rate of calves is higher in Pakistan as compared to developed countries. 30-40 percent calves die at an early age.

These are its important reasons:

1. White loose motions/diarrhea/calf score
2. Pneumonia
3. Blood in feces
4. Inflammation of umbilical cord/ navel
5. Hunterbal, tympany, intestinal parasites



Diseases of the Calves and how to avoid them:

If the skin of the calf feels dry and seems tight and it is changing colour and the joints of its legs are swollen, it means it is not getting enough minerals and vitamins and less air and sunshine. Feed it mineral mixture and vitamins and keep it in open air.



Eighty percent causes of calf scours is due to excessive milk feeding, unsuitable temperature or imbalanced feed. In this situation, the body temperature is normal or sub-normal. There would be water deficiency and the calf would drink more water and it would be quite active. Twenty percent causes of scours may be infection, in which the body temperature is high and the calf would drink less water and would be lethargic.

Treatment:

Stop giving milk and calf starter to the calf. Mix half a spoon salt and 6 spoons sugar or glucose in 1 litre boiled water and give it to the calf 3 times a day. Make the same solution the next day and mix it with milk and give it 3 times.

If the diarrhea does not stop, consult the doctor. If the calf also has fever with diarrhea and it refuses to drink milk, consult the doctor immediately. Any delay may be dangerous to its life.



If there is no infection and the fodder is good, but still the diarrhea does not stop, it means it is infested with worms. In such a case, administer de-worming medicine.

If the calf is kept at a dirty place and if there is no arrangement for air and light, it means the calf may have omphalitis, which may cause loose motions.

Vaccination Schedule:

For FMD and HS:

First vaccination: at the age of 1 month

Second vaccination: at the age of 1.5 to 2 months

Then vaccinate every 6 months

Brucellosis vaccination at the age of 4 to 7 months

De-horning:

When the horn buds are visible at the age of 2-3 weeks, remove them.

Appropriate Arrangement for the Shed of the Calves:

Make a shed for calves so that there is:

1. Proper arrangement for fresh air and light
2. Protection against rain and sunlight
3. Availability of rice straw for calf to sit comfortably
4. Separate pots of water and fodder
5. Enough space for the calves to walk
6. Daily cleaning

Calves remain immune to disease if they are kept in isolated pens for seven weeks

Summary:

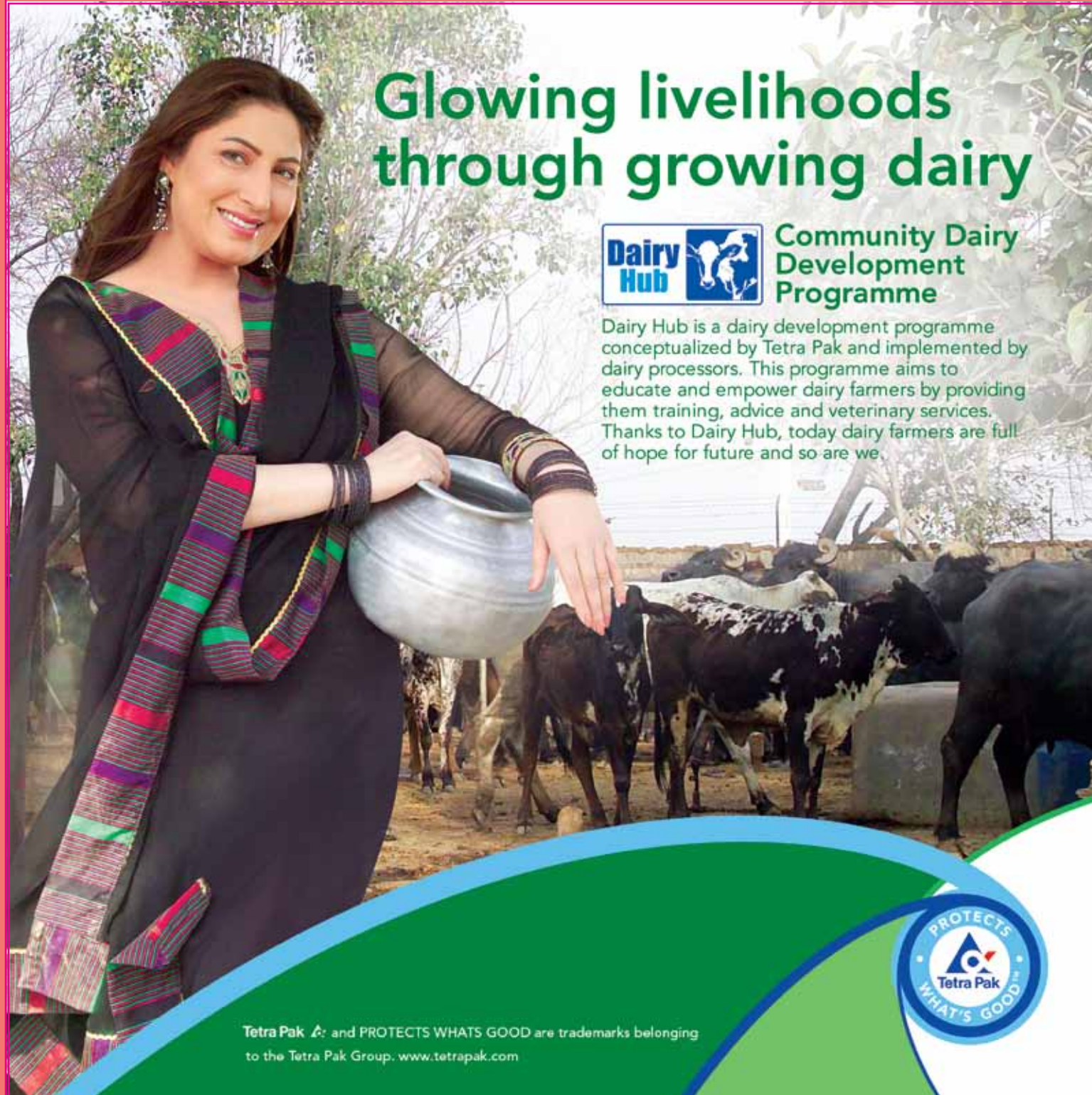
1. Give enough colostrum to the calf without any delay
2. Start giving water to the calf after third day
3. Give calf starter or concentrate feed on third day and train it to eat it
4. Give milk, concentrate and water with calf starter at the age of 2 weeks
5. Keep a record to see how the calf is growing. Measure its weight and height every month.
6. Its daily weight increase should be from 500 grams to 1000 grams.

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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