

STUDY OF GOAT

7.1 INTRODUCTION

Goat is a small multipurpose animal. In our country goat is raised by the small farmers and poor landless labourers for milk, meat, fibre, skin and manure. Many farmers raise one or two goats to subsidize their family income in suburban or rural conditions. While others keep a band of 30-50 as professional goat keepers, on whose income a family of 3-5 people survive. Goat keeping can serve as a constraint source of income to small farmers and landless labourers. It is now well recognized as a small scale cottage industry. Under modern management of stall feeding and hygienic milking off flavour in milk is no more a problem. It's milk and milk products are highly digestible and nutritious and should be encouraged for use. The goat meat (chevon) is delicious health, gives protein and probably one of the best priced meat in rural areas.

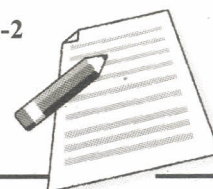
7.2 OBJECTIVES

After reading this lesson, you will be able to understand:

- Important breeds of goats, their home, characters and utility.
- Feeding of goats, kids, finisher ration, feeding of pregnant, lactating Goats and breeding bucks.
- Routine management practices in Goat.
- Housing of Goats.
- Health control in Goats.

7.3 IMPORTANT BREEDS OF GOATS:

Sr.no.	Breeds	Home	Characters	Utility
A]	Exotic Breeds of Goats			
1	Alpine	France	White to black with spots. Horn/hornless, pointed ears. Adult wt. 60 to 65 kg.	1 - 3 kg. milk/day
2	Nubian	Nubia (Upper Egypt) Sudan	Black dark brown with white spots, body covered with white. Silky hair, developed udder	1 - 2 kg. milk/day.



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3	Saanen	Switzerland	Colour dull white, male horned but female homeless, upright erect ears, straight nose, large udder	Milk yield 2 - 3 kg/ day
4	Toggenberg	Toggenberg	Brown with white colour on legs, polled	Milk yield 1 kg/ day
5	Angora	Middle China	Short statured, small head, white coloured, long loped ears, flat pointed horns, small udder, body covered with Mohair	Reared for meat & Angora fur, yield 1- 1.5 kg/ year.
B] Indigenous breeds of Goats				
I) Himalayan Region				
1	Kashmiri	Himachal, Kashmir, Punjab	Large size, Grey but white brown colour, white silky hair, 10 to 12 cm beneath fur coat	Pashmina grows in Oct. & Feb. 60 g. Pashmia / goat for shawl, Rug making, Meat & draft breed.
2	Gaddi	Himachal (Kangra, Kullu Valley, Shimla, Punjab)	White horns pointed at apex. Tough skin. Long and coarse hair 20 to 25 cm, firm footed.	Yield ½ kg to 1 Kg. Transport hair and meat
II) Dry Northern Region				
1)	Jamunapari	Jammu & Chambal Etawah	Dual purpose colour white with tan marking long, long pendulous ears of 25 cm, Roman nose short flat horn. large udder	Milk 2.5 kg. - 3 kg. Good for milk & meat
2)	Beetal	Sialkot, Jhelum, Amritsar	Resembles, Jamunapari Male beard, Red or black, tan spotted with white	Milk yield 1.5 - 2 kg. Twins / Kidding
III Central Region				
1)	Marwari	Marwar area of Rajasthan	Jet black colour with white/ speckled ears. Lustrous long hair (10-12cm). Male have thick beard, small ears, long cork screw horns.	Triple purpose hair, meat, milk. Daily milk yield is 0.9 kg.
2)	Berari	Nagpur, Wardha	Tall breed with dark colour	Milk yield is 0.6 kg/ day.
	Other breeds are Sirohi, Mehsana, Zalawadi, Kutchi			
IV Southern Region				
1)	Osmanabadi	Osmanabad	Black colour, mixture of red, white and black is also found longhorns, large size goat	Twinning is common, Milk yield 1 to 2 kg / day.
2)	Malabari	North Malbar Tellicherry and Mangalore of Kerala	Black/ brown / white or mixture of colour, Medium size, flat head, Roman nose, long ears	Average milk yield is 0.750 kg/ day it is also used for meat purpose.

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V	Eastern Region			
1	Bengal	W. Bengal	Small legged, excellent meat, chest wide ears, upright, short & soft hair twins/ multiples	No milk but meat is excellent.
2	Ganjan	Puri (Orissa) coastal A.P. South M.P.	Black/white/grey colour. Males beard, Horns parallel, curved backward and downward compact goat.	Kids twice a year poor milker yield 0.4 kg / day. Good for meat

Goats – Some Important Breeds

Alpine



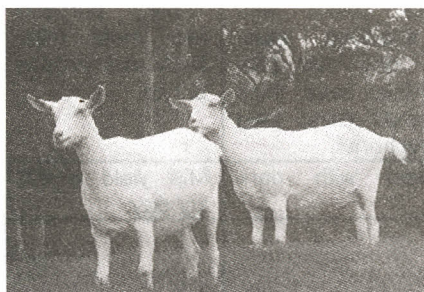
Toggenberg



Angora



Sanhen



Gaddi



Jammunapari



Beetal



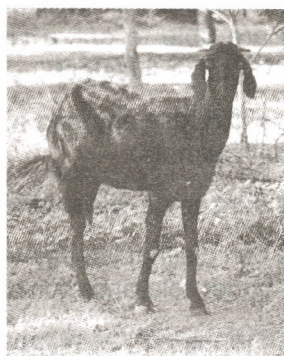
Marawari



Berari



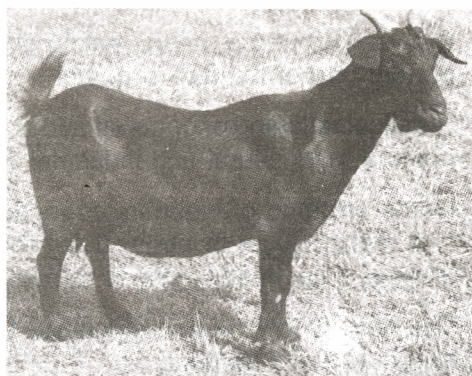
Osmanabadi



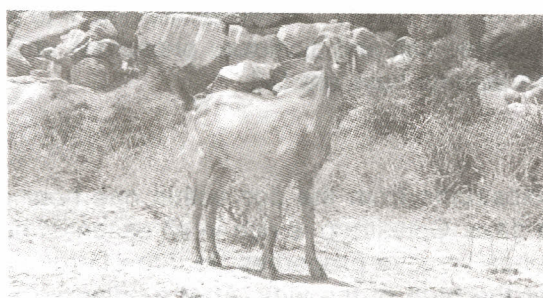
Malabari



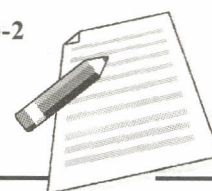
Bengal



Ganjan



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Notes



INTEXT QUESTIONS 7.1

Match the followings:

- | | |
|--------------|----------------|
| i) Alpine | a) Sialkot |
| ii) Beetal | b) Rajasthan |
| iii) Marwari | c) Nagpur |
| iv) Berari | d) Switzerland |
| v) Saanen | e) France |

7.4 FEED HABITS

1. Goats by means of their mobile upper lips and very prehensile tongues, goats are able to graze on very short grass and browse on foliage not eaten by other livestock.
2. Goats will refuse any kind of feed which has been soiled either by himself or by other animals.
3. Goats consumes wide varieties of feeds and vegetation.
4. Goats can distinguish between bitter, sweet, salty and sour tastes and they have higher tolerance for bitter tastes.
5. The rumen is not developed at birth, but young kids start picking a hay or grass at 2-3 weeks of age and by 3-4 months the rumen is fully functional.
6. Goats relish eating aromatic herbs in areas of sparse food supply.
7. Browse (Browsing means eating of leaves of bush & trees) forms and important part of the diet of goats.
8. Practical rationing of goats should be based on cheap foods such as browse pasture, agricultural and industrial waste.
9. Goats are fond of leguminous fodders. They dislike fodders like sorghum and maize silage or straw. They reluctantly eat hay prepared from forest grasses if cut in early stages or relish hay prepared from leguminous crop.
10. The nutrient conversion efficiency for milk production in goat ranges between 45 to 71 percent.
11. Goat has also an outstanding mineral requirement. Usually mineral mixture is added to the concentrate @ 2 percent. Calcium & Phosphorus are the minerals needed in largest supply. It is recommended to feed a mixture of equal parts of iodized salt and dicalcium phosphate at free choice particularly, when non-legume hays are fed.

Feeding Kids

Kids must receive colostrums from the doe within one hour after birth and should continue for 3 days. Colostrum is rich in all essential nutrients, It provides antibodies and has laxative properties. In large herds weaning should be practiced just after the birth of the kids. After feeding colostrums for 2-3



days change to whole milk or milk replacer. Milk replacers are used to save goat milk for human consumption and also to get an faster gain in kids up to 4 months age. Number of feeding should be thrice daily for one week after birth followed by twice daily. Provided good legume hay (or fresh green grass) and calf starter along with fresh water at 3 to 4 weeks of age. Equal parts of cracked maize, crushed oats, wheat bran and 10% linseed meal may be fed as the concentrate mixture from 4 months to breeding. Kids may be fed roughages that will provide enough nutrients for normal growth. Always provide clean, fresh water and minerals to kids as they grow commercial mineral mixture may be used.

Finisher ration

Goats are slaughtered mostly for lean meat. The ration should be planned to include 30-40% of the dry matter from roughage source and remaining amount from concentrate portion having 12 – 14 percent protein and 60-65% TDN. In general goats attaining slaughtering age by 10-12 months having variable body weights (20 to 30 kg) as specific for various breeds.

Feeding of Pregnant Goats

High quality roughages provide the basic nutrients needed during the last 6 to 8 weeks of gestation when 70 to 80 percent gain in foetal mass is made. Liberal feeding of quality leguminous fodder and concentrate having 25 percent should be offered between 400 to 500 gram depending upon the condition of doe. A free choice lick of mineral mixture will take care for the calcium and phosphorus requirement of doe and foetus. Allow good grazing if available and make sure that does get plenty of exercise.

Several days before the does freshen (Kidding) reduce the quantity of concentrate mixture to one half and add bran to provide more bulk. After kidding, feed a bran mash for a few days. Gradually, bringing the doe to the full feed for milk production.

Feeding of Lactating Goat

Nutrient requirements are higher during lactation. The ration for lactating doe should contain high quality roughages.

A feeding Guide for Goat

Age and Stages of Production	Feed Ingredients	Daily Amount to be fed
Birth to 3 days	Colostrum	Ad libitum
3 days to 3 weeks	Whole milk or replacer Water, Salt	450 ml. Ad libitum
3 weeks to 4 months (Start minimizing milk & completely stop it when kids attain age of 4 months)	Whole milk Creep feed Lucerne hay Water	450 ml. upto 8 weeks 450 g daily Ad libitum Ad libitum Salt
4 months to freshening Dry / pregnant	Concentrate Mixture Concentrate Mixture Lucerne hay Water salt	15-16% C.P. @ 450g. 15% C.P. @ 400-500g. Ad libitum Ad libitum
Milking doe	Concentrate Mixture Trace mineralized Salt, Molasses	@ 350g. for each litre of milk 5-7% of Concentrate Mixture.
Buck	Only pasture Concentrate Mixture	Non-breeding season @ 400g daily at breeding season.

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Feeding Schedule for Kids

Body Weight (Kg)	Milk (ml/day) Morning & Evening		Greenfodder (kg/day)	Concentrate (g/day)	Composition of kid starter	
2.5	200	200	-	-	Gram	20.0
3.0	250	250	-	-	Maize	22.0
3.5	300	300	-	-	GN Cake	35.0
4.0	300	300	-	-	Min Mix	2.5
5.0	300	300	Ad-lib	50	Wheat Bran	20.0
6.0	350	350	Ad-lib	100	Common	
7.0	350	350	Ad-lib	150	Salt	0.5
8.0	300	300	Ad-lib	200		100.0
9.0	250	250	Ad-lib	250		
10.0	100	150	Ad-lib	350		
15.0	100	100	Ad-lib	350		
20.0	-	-	1.5	350		
25.0	-	-	2.0	350		
30.0	-	-	2.5	350		

GN Cake – ground-nut-cake

Min mix – mineral mixture

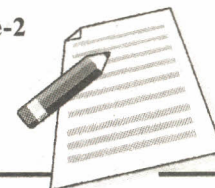
Composition of kid starter (kg)	%
Gram	20.0
Maize	22.0
Ground-nut-Cake	35.0
Wheat bran	20.0
Mineral Mix	2.5
Common Salt	0.5
	100.0

Composition of concentrate mixture (kg)	%
Gram	15.0
Maize	37.0
Ground-nut-Cake	25.0
Wheat bran	20.0
Mineral Mix	2.5
Common Salt	0.5
	100.0

Green Lucerne and berseem are normally preferred for stall fed goats.

Like Lucerne, berseem and other cereal grains through which it will receive not only fresh nutrients particularly of minerals, vitamins and proteins but also the bulk needed for volatile fatty acids viz. acetic, propionic and butyric needed for high milk production. To supplement more nutrients particularly of energy, cereal grains @ 350 grams for each litre of milk must be provided.

The protein percent may vary from 14 to 16%, the feed may be fed in two lots, i.e. at the time of morning and evening milking. Add 1% trace mineralized salt and 1% calcium phosphorus mineral mixture to concentrate mixture. Molasses (5 to 7% of concentrate mixture) may be used to increase palatability and reduce dustiness of feed. Keep a clean, fresh supply of water available at all times. After two weeks gradually increase the concentrate level to that suggested by milk yield.



Notes

Feeding Breeding Bucks

Ingredient	(Approx. Crude protein content)		
	14%	16%	18%
	 of mixture		
Ground maize	37.0	35.0	32.0
Crushed oats	37.0	35.0	32.0
Wheat bran	16.0	14.0	15.0
Soyabean Oil meal (45% CP)	9.0	15.0	20.0
Iodized Salt	1.0	1.0	1.0

During the non-breeding season, the buck does not require additional grain if he is on good pasture. During the breeding season, the same concentrate mixture fed to the does may be fed at the rate of 450-900 grams (Depending on the body weight) daily. Provide roughage free choice along with clean fresh water and minerals. Care must be taken not to allow the buck to get too fat. Reduce the intake of energy feeds as needed to prevent this. Make sure the buck gets plenty of exercise.



INTEXT QUESTIONS 7.2

Match the followings:

A

1. Kids
2. Pregnant Goats
3. Breeding bucks
4. Lactating Goats
5. Finisher Ration

B

- a) Exercise
- b) 350 grams/ litre of milk
- c) 30 to 40% Dry matter.
- d) Mineral Mixture
- e) Colostrum

7.5 ROUTINE MANAGEMENT PRACTICES

Handling of Goats

Goats are seldom difficult and frequently learn to come for food and milking when called. They dislike being held by horns and ears and care should be taken not to disturb their nostrils for an ideal handling. It is preferable to hold them with neck or head collars.

Castration

It is done at the age of 2 to 4 weeks although castration at later stage is successful. For this purpose burdizzo's castrator is used. Care should be taken to pass the spermatic chord of each testis in two places, $\frac{1}{2}$ " apart. At that time testis should be held by hand in such a way that it never reaches the hinge of the castrator. After castration, there may be swelling of the testis which soon becomes normal within 2 or 3 days.

Advantages:

- i) Palatability of meat increases.
- ii) Increase in body weight at a rapid rate.

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- iii) Quality of skin becomes superior.
- iv) Profit from castrated goat is always more.

Dehorning

Dehorning is done to avoid horned and polled goats together. It is practiced within one week of birth by using caustic potash.

Care of the feet

Goats frequently suffer from over grown feet, a condition which causes much unnecessary discomfort and even deformity and arthritis in old age. These conditions can be prevented by pairing the hooves when they become overgrown.

Exercise paddock for stall fed Goats

When goats are reared in stall under constant confinement, it is of utmost importance to provide the exercise paddock. An enclosure measuring 12m x 18m is adequate for 100 to 125 goats. Some shade trees may be planted to provide adequate comfort in summer. The animals should be allowed to roam about in enclosed area for some fixed period to have sufficient fresh air and exercise.

Regular Breeding: - Most of the goats attain sexual maturity at one year of age, but this could be easily reduced by 3-5 months. The cyclic ovarian activity and uterine involution resume normalcy within 30 to 35 days after. Kidding and they could be inseminated easily after 45 days of normal kidding. It must be ensured that animal receives services between 45-60 days after kidding. A normal goat comes in heat every 19-21 hours if not conceived. The duration of heat is 18 to 36 hours. During this period, the goat should be mated 10-12 hours after the onset of heat.

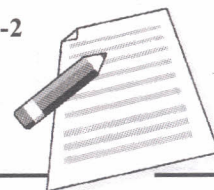


INTEXT QUESTIONS 7.3

- A) Fill in the blanks
- i) _____ is done at the age of 2 to 4 weeks.
 - ii) _____ one week of birth by using caustic potash.
 - iii) Pairing of hooves is done for _____ feet in sheep.
 - iv) In _____ year goats attain sexual maturity.

7.6 HOUSING

Under farm and city conditions, it is economical to provide special housing for goats. Each pen may be 5' in length, 2 ½' wide and 6' height. This is enough for a pair of goats. Several pens may be made according to the number of goats. In case of milch goats, separate pens for lambs should be constructed at very adjacent of the dam's pen. The partition between the mother and kids pen should be such that both can see each other. The buck should be housed away from the milking goats. The house should have plenty of fresh air, sunshine and well drained. The materials for constructing goats house may be any thing like bamboo, wooden or pukka. High roof shed covered with fire-proof material has

*Notes*

been found to be cooler than housing made using conventional needs, hay thatches and asbestos sheet.

The height of the shelter in the hot region should be between 3 and 5 metres and height less than this will result in poor ventilation. The shape of the roof can be either flat, sloped or 'A' shaped. The 'A' type roof has definite advantages over the rest in the hot region, as one side of the roof will save the other half from direct solar radiation by casting its shadow of the different materials used for the roof. The fire proof tar-coated has been found effective. Shelter surroundings should be kept as green as possible to avoid heating up of the shed. For good ventilation and to protect the animals from the direct heat of hot winds, the eastern and western sides of the sheds should be covered up to a metre height. The roof and walls should be white outside and coloured inside. Painting the side walls white outside reduces the surface temperature inside by 12 to 22°C, when compared to unpainted walls in places where temperatures remain above 37°C.

Goats in an advanced stage of pregnancy at least 4 to 7 days before kidding must be housed separately. Kids from one week after birth to sub-adult stage should be kept @ 20 to 25 per shed. By making suitable partitions in larger shed, unweaned, weaned but immature and near matured kids can be housed separately. Small rooms to house 15 to 20 newly born kids are essential to raise a good breeding stock. The bucks should be kept away from the milking goats, in small groups of 10 or 15. Isolation sheds must be provided to keep sick and diseased animal far away from the rest of the sheds.

Besides housing other facilities to store concentrate feed, medicine, dipping tanks should be provided. Feeding and water troughs should be included within the housing shelters.

**INTEXT QUESTIONS 7.4**

Fill in the blanks:

- i) _____ should be housed away from milking goats.
- ii) _____ height of roof in hot region.
- iii) Roofs and walls should be _____ washed outside.
- iv) _____ shed is used to keep sick or diseased animal.

7.7 HEALTH CONTROL

General measures for prevention of contagious diseases are as follows:

- i) Identification and isolation of infected animals.
- ii) Treatment of affected animals.
- iii) Disposal of dead animals either by burning or deep burial.
- iv) Destroy contaminated fodder by burning.
- v) Proper disposal of contaminated water.
- vi) Regular disinfection of sheds and premises.
- vii) Don't allow grazing in affected area.



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- viii) Don't allow animals to drink water from ponds, rivers etc. during out break of disease.
- ix) Regular spraying of insecticides to control external parasites.
- x) Provide adequate ventilation and sunlight.
- xi) Provide ample fresh clean water.
- xii) Provide sufficient quantity of balanced ration.

Vaccination:

Goats should be vaccinated against all diseases like: Rinderpest, Haemorrhagic Septicaemia, Black. Quarter, Caprine pleuropneumonia, Enterotoxaemia.

Control of Ectoparasites :

Application of drugs like folidol, Malathion controls the ticks and lice. Malathion dip or bath (Weak Solution 1.5 to 2%) is found quite effective against goat lice. folidol is used in proportion of 1:5 with ash. The walls should be white washed with lime and copper sulphate in case of tick/ lice infestation. General Cleanliness of pens by phenyl and occasional dettol / Malathion 2% bath.



INTEXT QUESTIONS 7.5

Match the followings:

- | A | B |
|---------------------------------|-----------------|
| i) Dead animals | a) Vaccination |
| ii) Rinderpest | b) phenyl |
| iii) Ticks and lice | c) folidol |
| iv) General cleanliness of pens | d) Deep burial. |

7.8 WHAT YOU HAVE LEARNT

Goat is a small multipurpose animal raised by small farmers and poor landless labourers for milk, meat, fibre, skin and manure throughout the country. Off flavour in milk is no problem. Its milk and milk products are highly digestible and nutritious. The goat meat (Chevon) is delicious and health giving protein. Goats are able to graze on very short grass and browse on foliage not eaten by other livestock. Goats are fond of leguminous fodders. They dislike fodders like sorghum and maize silage or straw. Castration, Dehorning, care of feet, exercise for stall fed goats are routine management practices in goats. Under farm and city condition it is economical to provide special housing for goats. Vaccination and control of ectoparasites is essential for health care in goats.



7.9 TERMINAL QUESTIONS

- i) Write the exotic breeds of goats with their characters and utility.



- ii) Write the feeding habits of Goats.
- iii) Give the feeding schedule of Goats.
- iv) Explain the routine management practices in Goats.
- v) Write the general measures for prevention of contagious diseases in Goats.

7.10 ANSWER TO INTEXT QUESTIONS**7.1**

- i) France
- ii) Sialkot
- iii) Rajasthan
- iv) Nagpur
- v) Switzerland

7.2

- 1. Colostrum
- 2. Mineral mixture
- 3. Exercise
- 4. 350 grams/ litre of milk
- 5. 30 to 40% Dry matter

7.3

- i) Castration
- ii) Dehorning
- iii) Overgrown
- iv) 1 year

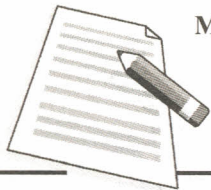
7.4

- i) Bucks
- ii) 3 to 5 metre
- iii) White
- iv) Isolation

7.5

- i) Deep burial

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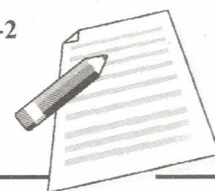


Notes

- ii) Vaccination
- iii) Folidol
- iv) Phenyl

SUGGESTED ACTIVITY

Visit a goat farm to study the managerial practices.



STUDY OF SHEEP

8.1 INTRODUCTION

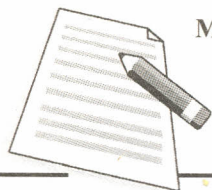
Sheep is an important species of live stock in India contributing to food, fibre, rural employment and gross product. This has special importance in arid, semi-arid and hilly areas where dairy farming is not so economical. Sheep contributes through mutton, skin and wool. The export of wool and west hand knotted carpets exceeds Rs. 120 crores. Our country has vast genetic resources of sheep comprising about 40 breeds. Most of wool producing sheep breeds produces carpet type wool. Nearly 50 percent of sheep in southern peninsular region produce extremely coarse wool and this is also true with sheep in eastern region which produce hairy fleece.

Sheep do not need expensive buildings to house them. They require less labour than any other kinds of livestock. The foundation stocks are relatively cheap and the flock can be multiplied rapidly. Sheep possess a special ability to thrive on natural grasses. Sheep are of economical converter of grass into meat & wool. The structure of their lips helps them to clean grains lost at harvest time, and thus convert waste feed into profitable products. Sheep dung is valuable fertilizer, and since they are grazed on, sub-margined lands their droppings are the only means of improving the growth of plants in such areas. Mutton is one kind of meat towards which there is no prejudice by any community in India and further development of superior breeds for mutton production will have a great scope in the developing economy of India.

8.2 OBJECTIVES

After reading this lesson, you will be able to understand:

- Important indigenous and exotic breeds of sheep and their characteristics and utility.
- Feeding of pre-weaning lambs, growing & finishing lambs, finishing ration, feeding Adult sheep etc.
- Different structures for housing sheep.
- Essential managerial practices round the year.



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8.3 IMPORTANT BREEDS OF SHEEP

I) Temperate Himalayan Breeds of Sheep:

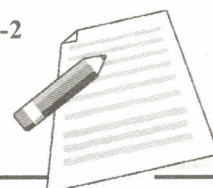
Breeds	Habitat	Characteristics	Utility
1. Gurez	Kashmir, H.P., Garhwal (Uttaranchal)	Polled, white in colour, coarse wool	Wool fibre 6 ½" long Wool yield: 1.5 kg/yr.
2. Bhakarwal	Kashmir, H.P., Garhwal (Uttaranchal)	Generally white, ewes hornless, but rams horned, long ears and drooping, long sized, straight back.	Wool yield 1.5 kg/yr Coarse wool, mutton superior

II) Dry Western Region Breeds of Sheep:

1) Marwari	Southern Rajasthan	Black face, short ears & tail, small sized body, body, white in colour	Coarse white wool 1 to 1.5 kg/yr.
2) Lohi	Montgomery (Pakistan)	White in colour, polled, Roman nose, Black/ brown face, long ears, short & thick tail.	Good quality mutton. Carpet type coarse wool. Yield 2 kg.
3) Kathiawari	Parts of Kutch & Kathiawar dist. (Gujarat)	White in colour tan / black face, medium size, well built.	Good quality carpet wool. Yield 1.5 kg/yr.
Other breeds are	Chokla, Nali, Magra, Malpura, Muzzaffarnagari, Jalauni, Sonadi and Pugal		

III) Southern Region breeds of Sheep:

Hasan	Hasan dist. Of Karnataka	Small sized, white body with black spots, ear medium & drooping	Fleece white coarse, No wool on belly. Yield – 0.7 Kg/yr. Commonly for meat.
Deccan	Maharashtra & border area of A.P.	Black, grey colour, Ram – horned, ewes polled. Roman nose, short tail, top ear	Rough, Hairy type coat for blanket, Meat purpose breed.
Nellore	Nellore (A.P.)	Deep red/ fawn colour Tallest breed of sheep in India with spirally twisted horns, short thin tail.	Hairy type wool. Yield: 1 kg/yr.
Other breeds are: Macheri, Mandya, Bellary, Kenguri, Timchy, Ramnad, Madras Red & Coimbatore			



Notes

IV) Exotic Breeds of Sheep:

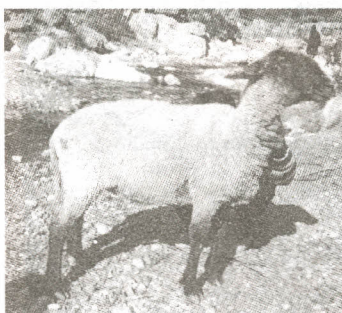
Merino	Spain	White in colour, rams with spirally twisted horns, Ewes polled, folds in the skin. Small sized, hardy in nature	Fine quality wool, yield: 2.5 kg. / yr.
Rambouillet	France	Large size head, white in colour prolific.	Dual purpose wool & mutton.
Southdown	England	Small sized, black in appearance, grey in colour, short round ears.	Fine quality wool yield: 2 kg /yr.
Corriedale	New Zealand	Dual purpose for wool & mutton	Average quality wool 4 to 5 kg/yr.
Lincoln	England	Large sized, prolific breeder	Coarse wool. Yield: 4.5 to 5 kg/ yr.
Leciester	England	Moderate size, stylish in feature	Average quality wool. Yield: 3 to 4 kg. yr.

Sheeps – Important Breeds

Gurez



Bhakarwal



Marwari



Hasan



Deccan



Nellore

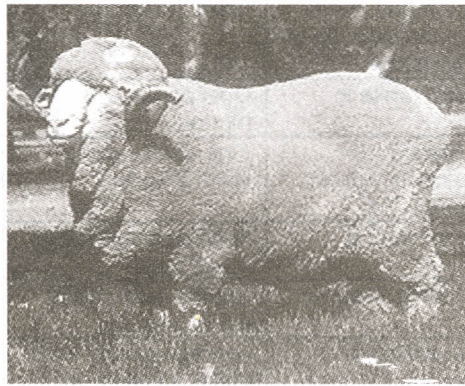


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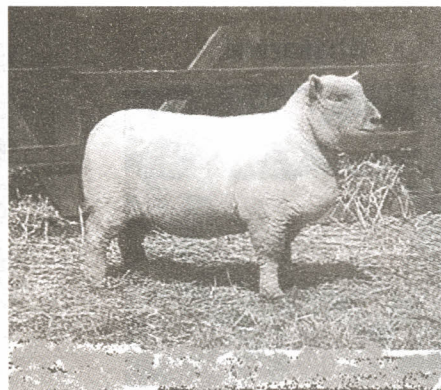
Merino



Rambouillet



South Down



Corriedale



Lincoln





INTEXT QUESTIONS 8.1

Match the following:

A

- i) Gurez
- ii) Merino
- iii) Hasan
- iv) Rambouillet
- v) Lohi

B

- a) Montgomery
- b) France
- c) Kashmir
- d) Spain
- e) Karnataka

8.3 FEEDING OF SHEEP

Sheep are dependent on natural pastures for maintenance and production. Sheep generally live on grazing wild grasses, herbs and farm waste products. Young, tender grasses are relished by sheep. Over ripe grasses are not relished by them. The common leguminous green feeds like cowpea, berseem, lucerne are all relished by sheep, matki, urid, mung, kulthi and sesbania are also good fodder for the sheep. When fed in stall they can easily consume 2.5 to 3.0 kg. of Dry matter per head per day from good quality roughages. Sheep need comparatively greater proportion of protein because of wool fibres which are composed almost entirely of protein. The minerals in feeding sheep are common salt, calcium and phosphorus. Inclusion of bone meal in the ration will take care of phosphorus. Concentrate mixture containing barley, oil cake and wheat bran along with roughage like legume hay is very effective.

FEEDING OF PRE-WEANED LAMBS

Up to 12 weeks of age lambs lactating should be supplemented with creep mixture. Feeding of this creep mixture has given a growth rate of 110-130 grams per head per day up to 90 days of age.

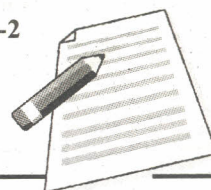
Creep Mixture:

Ingredients	Proportion
Maize flour	67%
Groundnut cake	10%
Wheat bran	10%
Fish meal	10%
Common salt	1%
Mineral mixture	2%

GROWING AND FINISHING LAMBS (INDIGENOUS)

- a) When good quality fodders namely green oats, cowpea, maize, dub or hays are available, then following quantities of concentrate mixture may be fed.

Body weight (kg)	Concentrate mix (g /day)
10 – 15	50
16 – 25	100
26 – 35	150



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- b) When good quality fodders are not available and animals are kept on mature grasses like straws, stovers etc. then following quantities of concentrate may be fed.

Body weight (kg)	Concentrate mix (g /day)
10 – 15	300
16 – 25	400
26 – 35	600

Finishing Ration

- a) Intensively rearing condition

Supply 700 to 900 gram ration having 70 percent concentrate and 30 percent roughage. The composite ration will have 10 – 13 percent proteins.

- b) Semi-range condition

The roughage part will be taken by the usual grazing. During lean period 150 gram concentrate mixture may be fed. Free choice mineral mixture, common salt and adequate vitamin A should be supplied.

Adult Sheep :-

Free choice maintenance quality fodders like oat, hay, dub grass, maize etc. plus 100 gram concentrate mixture may be fed. Absence of good quality fodder along with straws & stovers fed 400 gram concentrate mixture.

Breeding ram and Breeding ewes during last six weeks of Gestation.

Feed adlib green feeds like maize, cowpea, dub grass in green or hay form without supplementary concentrate mixture. In absence of green feed, 400 gram concentrates mixture can be used.

Lactating Sheep

- a) First 10 days: - Legume hay and curtail concentrates.
b) 10th day to weaning: - Feed 250 gram concentrate mixture in addition to adlib legume hay up to 2 ½ months after maintenance allowance is sufficient.

Flushing: - About 2 weeks before the rams are let loose with sheep, 200g of concentrate mixture with good quality roughage (oat, dub, cowpea etc.) are given.



INTEXT QUESTIONS 8.2

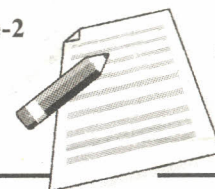
Match the following:

A

B

- | | |
|----------------------|---------------------------------|
| i) Pre-weaned lambs | a) 200 gram concentrate mixture |
| ii) Finishing Ration | b) 100 gram concentrate mixture |

- | | |
|------------------|----------------------------|
| iii) Adult sheep | c) 10 – 13 percent protein |
| iv) Flushing | d) Creep mixture. |



8.4 HOUSING OF SHEEP

General Flock Shed: - Adult breeding ewes or nannies are housed in this shed. Each shed should accommodate about 60 ewes or nannies. The shed should be three metre high and should have moorum or brick on edge floor. In low lying and heavy rainfall areas the floors should be elevated and in temperate Himalayan region they may be made of strong wood.

Shed for Ram: - Rams are housed individually in these sheds. Alternatively, wooden partitions can be raised in a bigger shed to partition it into stalls.

Lambing Shed: - These are the maternity pens. Pregnant ewes or nannies are housed individually in the sheds. These sheds shall be made draught free. In northern parts of the country some warming device, like a room heater. Shall be fixed in maternity pens so that new-horn kids or lambs are protected from cold during winter season.

Lamb Shed: - Lambs from weaning up to attaining maturity are housed in these sheds at the rate of about 75 animals per shed. By making suitable partitions in a larger shed, un-weaned, weaned but immature and nearing maturity lambs can be housed separately. On larger farms however, three separate sheds may be constructed to house three categories of kids or lambs.

Sick animal shed: - Away from the other sheds one or more (depending on flock size) sick animal sheds of about 3m x 2m x 3m m size may be constructed.

Shearing Room: - This is the place where sheep are shorn and hence, a shearing room is required only on farms where sheeps are kept for all wool. This room should be well-lit by having large glass windows all around. The floors should be cement paved and surface made smooth. On either side of the shearing room there shall be two simple fenced lots. Where sheep can be collected before and after shearing these lots should lead into the shearing room through 1.5m wide passage.

Accessory Building :- Wool store should be located next to the Shearing Room for storing wool and shearing equipments. This room should have clean smooth floors and walls lined with glazed tiles upto a height of one and a half metre. The room should be made dust and damp proof. There shall be three windows on three sides.



INTEXT QUESTIONS 8.3

Match the following:

- | A | B |
|-----------------------|----------------------------------|
| 1. Lambing shed | i) Adult breeding ewes |
| 2. Shearing Room | ii) Maternity pens |
| 3. Shed for Ram | iii) Sheep are shorn |
| 4. General flock shed | iv) Individual pen |
| 5. Lamb Shed | v) Shed from weaning to maturity |

8.5 ESSENTIAL MANAGERIAL PRACTICES ROUND THE YEAR

A) Winter Season (Dec. – Jan. & Feb.)

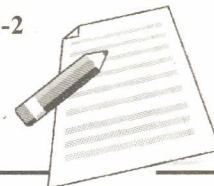
It is the time of extremely cold temperate and moderately cold temperate in N.W. Region and eastern and southern region. Grazing condition deteriorates due to poor growth of grass. During this period take preventive measures as follows:

- i) Provide supplementary feeding to ewes and rams.
- ii) Mature animals are now to be prepared to face the coming mating season.
- iii) Protection against cold in temperate region.

B) Spring Season (March & April)

i) In Dry northern, Southern and Eastern Region:-

- i) Ewes are planned for mating. Estrous in ewes range from 20-42 hours with an average of 30 hours. Ovulation occurs about 24-30 hours after the onset of estrous. If the ewe is not bred or if she fails to conceive, estrous recurs after an interval of about 17 days.
- ii) Just prior to breeding season shearing of the flocks make them more active and in many cases, will improve their fertility. Sheep are shorn at the end of winter season when warm weather commences and sufficient grazing in the field is available.
- iii) Dipping at this time of the season is another essential provision for safeguarding sheep for the following reasons:
 - a) To remove excess of faulty materials and dung from the fleece prior to clipping.
 - b) To cleanse the skin from the products of sweat, shed epithelial scales and other waste materials.
 - c) To eradicate the common parasitic agents such as lice, ticks etc.
 - d) To prevent attack by the sheep blowflies and consequent infestation with maggots.

*Notes*

The following is a list of the dips classified according to disease to be treated:-

Maggots	Any sulphur dip
Lice	Folidol, Dieldrin
Ticks	Folidol, arsenic
Scab	Lime sulphur solution.

The dip must be carefully made up according to instructions, and fresh dipping powder and fluid added to make up the loss that occurs from the removal of a small amount upon the fleece of each sheep. In hand bath type of dip, each sheep is lifted individually into the dipping bath, which is usually of wood or concrete about 4 ft long, 3ft 6 inches deep and 1ft 9 inches to 2ft wide, and turned over on to its back. They are held in the bath for about 2 minutes, their heads being immersed at least once. They are lifted on to a draining board when the excess dip is squeezed from the fleeces and runs back into the bath. Two men are required at the bath and one man is usually engaged catching from the collecting pen.

PRECAUTIONS

1. For 4 to 5 weeks after service ewes should not be dipped.
2. Sheep should be offered a drink of water before being dipped in hot weather, as there is some risk of thirsty animals drinking the dip.
3. The dip will be repeated at suitable intervals.
4. Due to Enterotoxaemia 5-10 percent sheep may die in any season. A vaccine is available for preventive purposes and it is advisable to give two doses at an interval of at least 14 days preferably during spring season.

C) Hot Season (May and June)

Due to scarcity of green grasses, supplementary feeding either as a silage or grain mix is necessary. In temperate region, grasses will continue to grow. In Northern, Southern and Eastern region following operations are suitable:-

- 1) Proper care of pregnant ewes: - When the flock is large, separate the ewes those are close to lambing. Check the feet for any infection.
- 2) Steaming up: - As the ewes become heavy in lamb, they will require more nutrients to feed the developing lambs. The feeding of supplementary concentrates during the last two months of pregnancy is strongly recommended. This will lead to stronger and heavier lamb at birth, the ewes will milk better and the risk of pregnancy toxaemia will be considerably reduced.

Steaming up feed before lambing:-

8-6 weeks before lambing: - 100g concentrate + usual grazing head/day

6-4 weeks before lambing: - 200g concentrate + usual grazing head/day

4-2 weeks before lambing: - 300g concentrate + usual grazing head/day

2-0 weeks before lambing: - 450g concentrate + usual grazing head/day

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Notes

Suitable mixture would be:-

- | | |
|--------------------------------|-------------------------------------|
| 1. Cereal grain – 40 parts | 2. Barley, Dal or maize – 46 parts. |
| Wheat bran – 30 parts | Sorghum grain – 34 parts |
| GNC or Linseed cake – 30 parts | Oil cakes – 20 parts |

The feeding supplemental concentrate mixture can be gradually diminished after 8 to 10 weeks of lambing.

MARKING

Marking may be done at the same time the lambs are docked and castrated. Pure breed lambs are marked so that the sires and dams of any lamb could be known. Marking may be done by Ear notching, Plastic tags and Paint brands.

CASTRATION

The three methods of castrating lambs are 1) Elastrator and rubber ring. 2) Burdizzo and 3) Surgical removal.

D) Rainy Season (July, Aug & September)

During this season, there is abundant growth of pastures. The sheep gains maximum body weight. During this period Managerial practices are as follows:

Northern, Southern and Eastern Region

- 1) Lambing time, so require special care
- 2) Care of newly born lambs
- 3) Deworming of all sheep by feeding Anthelmintics
- 4) Reseeding of pasture lands

Temperate region

- 1) Preparation of ewes for breeding
- 2) Deworming of sheep
- 3) Pairing of overgrown hoofs
- 4) Crutching of sheep

E) Autumn Season (October & November)

The condition of grazing land continues to be good. In addition sheep will stubble grazing after harvest of the Kharif crop. Weaning, castration, shearing, dipping and deworming are important aspects of sheep farming at this season.

Control of Parasites

The important parasites of sheep include stomach worms, nodular worms, lung worms, liver flukes, ticks and lice. Phenothiazine, thiabendazole and tramisol are dewormer used to control stomach and nodular worms. Worming medicine is given two weeks before breeding season to ewe flock and rams. Ticks can be controlled by dipping or spraying malathion.

Handling Sheep

A sheep should be caught by the nose, flank or by the hind leg. Never catch or hold a sheep by the wool. Since this will bruise the flesh just under the skin. If the left hand is under the Jaw and the right hand on the sheep's rump, the animal can easily be controlled or nosed over at will.



INTEXT QUESTIONS 8.4

Match the followings:

A

B

- | | |
|-------------------|--------------------------|
| 1) Stomach worms | a) Any sulphur dip |
| 2) Ticks and lice | b) Furadol. |
| 3) Maggots | c) Lime sulphur solution |
| 4) Scab | d) Phenothiazine |

8.7 WHAT YOU HAVE LEARNT

Sheep is an important species of livestock in India contributing to food, fibre, rural employment and gross product. Sheep are dependent on natural pastures for maintenance and production. Young tender grasses and leguminous green feeds are relished by sheep. General flock, shed for ram, lambing, sick animal shed, shearing room are essential for housing sheep. The essential managerial practices round the year will help in better management of sheep for food & wool production.



8.8 TERMINAL QUESTIONS

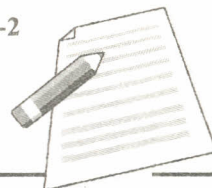
- i) Write the important exotic breeds of sheep with reference to habitat, characteristics and utility.
- ii) Write the various structures for housing sheep.
- iii) Explain the managerial practices round the year in winter, spring and hot season in sheep.
- iv) Write short notes on:
 - (a) Control of parasites in sheep
 - (b) Handling of sheep

8.9 ANSWER TO INTEXT QUESTIONS

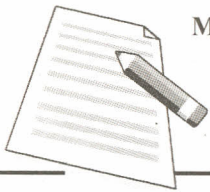
8.1

- i) Kashmir
- ii) Spain
- iii) Karnatak
- iv) France

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Notes



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Notes

v) Montgomery

8.2

- i) Creep mixture
- ii) 10-13 % protein
- iii) 100 gram concentrate mixture
- iv) 200 gram concentrate mixture

8.3

- 1. Maternity pen
- 2. Sheep are shorn
- 3. Individual pen
- 4. Adult breeding ewes
- 5. Shed from weaning to maturity.

8.4

- 1) Phenothiazine
- 2) Folidol
- 3) Any sulphur dip
- 4) Lime sulphur solution

SUGGESTED ACTIVITY

Visit a sheep farm and study the managerial practices.