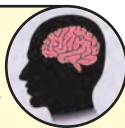


4. SHEEP AND GOAT BREEDS

Can you recall ?

- Important small livestock species
- Importance of Sheep and Goat in Indian economy
- Importance of Goat and Sheep Milk, Skin, Wool, Meat etc



4.1 CLASSIFICATION OF SHEEP BREEDS

All the sheep have several characteristics in common. Sheep belongs to family *Bovidae* (ruminants), genus *Ovis* and species *aries*. Within this species many different breeds exist.

Internet my friend

Difference between Sheep and Goats.



Classification of Indigenous sheep breeds on the basis of agro-ecological regions in India

North Temperate	North-Western Arid and Semi Arid	Southern Peninsular	Eastern
1. Bhakarwal (CW)	1. Chokla (CW)	1. Bellary (MCW)	1. Balangir (MCW)
2. Changthangi (CW)	2. Hissardale (AW)	2. Coimbatore (MCW)	2. Bonpala (MCW)
3. Gaddi (CW)	3. Jaisalmeri (MCW)	3. Deccani (M)	3. Chottanagpuri (MCW)
4. Gurez (CW)	4. Jalauni (MCW)	4. Hassan (M)	4. Ganjam (MCW)
5. Karnah (AW)	5. Kheri (MCW)	5. Kanguri (M)	5. Garole (M)
6. Kashmir Merino (AW)	6. Magra (CW)	6. Kilakarsal (M)	6. Tibetan (CW)
7. Poonchi (CW)	7. Malpura (MCW)	7. Madras Red (M)	7. Kendrapada (MCW)
8. Rampur\Bushair (CW)	8. Marwari (MCW)	8. Mandya (M)	
	9. Muzaffarnagari (MCW)	9. Mecheri (M)	
	10. Nali (CW)	10. Nellore (M)	
	11. Patanwadi (CW)	11. Nilgiri (AW)	
	12. Pugal (MCW)	12. Rammand White (M)	
	13. Sonadi (MCW)	13. Tiruchy Black (M)	
	14. Munjal (M)	14. Vembur (M)	
	15. Panchali (M)		

Within parenthesis is the major product of the breed.

- AW: Apparel wool;
- CW: Carpet wool;
- MCW: Mutton and Carpet wool;
- M: Mutton.

Internet my friend

- Total number of recognized sheep breeds in India.



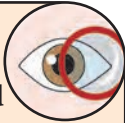
4.2 SHEEP BREEDS

4.2.1 Indian Sheep Breeds

1. Deccani

Observe and Discuss

- Observe the sheep breed found in your locality.
- Discuss with the farmers about routine management of their sheep.



Habitat: This breed is mostly found in the South-Eastern part of Maharashtra and in the neighbouring areas of Telangana and Karnataka. The breed is widely distributed in several districts which includes Nashik, Pune, Ahmadnagar, Kolhapur, Solapur and Aurangabad districts of Maharashtra state.

Prominent characteristics

1. The sheep are strong and hardy.
2. The colour is dominantly black, with some grey and roan strain.
3. The breed has thin neck, a narrow chest, prominent spinal processes, raised withers, flat ribs, drooping croup and poor leg of mutton.



Fig. 4.1 a Deccani : Male



Fig. 4.1 b Deccani : Female

4. The rams are usually horned and the ewes are polled.
5. The animals have roman nose, lop ears and short tail.
6. The average live weight of ram and ewes is 38 and 28 kg, respectively.

Do you know !

According to colour Deccani is classified as Black Deccani and White Deccani.



Economic importance

1. This breed is mostly reared for mutton production.
2. The fleece is coarse and consists of a mixture of wool fibers and hairs in varying proportions.
3. The average annual wool yield is 700g.
4. The wool is usually black, white and grey in colour. Wool is of inferior quality and used for making rough blankets and carpets.

Do you know ?

“Madgyal” is one of the unexplored sheep breed of Maharashtra found in and around Madgyal village in Sangli district from which the breed name is derived.





Fig. 4.2 Madgyal



Fig. 4.3 b Merino : Female

4.2.2 Exotic sheep breeds

Can you tell ?

Which is the most popular fine wool breed of the World?



1. Merino

Habitat: The breed is a native of Spain and is spread all over the world.

Prominent characteristics

1. Colour of wool is white and skin is pink.
2. Wrinkles or folds in the skin are the qualities of Merino breed.
3. The head is medium sized and fairly well covered with wool.



Fig. 4.3 a Merino : Male

4. Females are polled.
5. Rams have rather large, heavy, spirally turned horns.
6. The breed is small in size, somewhat upstanding angular.
7. Merino rams and ewes weigh about 75 kg and 65 kg, respectively at the time of maturity.
8. Merinos are extremely hardy, being able to survive under adverse weather and poor grazing conditions.

Economic importance

1. It is the most popular fine wool breed of the world.
2. Average fine quality wool yield varies from 4 to 7 kg in rams and 3 to 4 kg in ewes.
3. Wool fiber diameter is 17 to 24 microns and length is 5 to 10 cm

Remember...

Merino rams of Australian and German origins have been used in large numbers to produce new breeds of superior quality.



2. Rambouillet

Habitat: The breed is originated from France and is a descendant of old Spanish Merino.

Prominent characteristics

1. The colour is white and skin is pink in colour.
2. The breed is hardy and excellent grazer on poor pasture.
3. The breed is the largest one among the fine wool breeds.



Fig. 4.4 a Rambouillet : Male

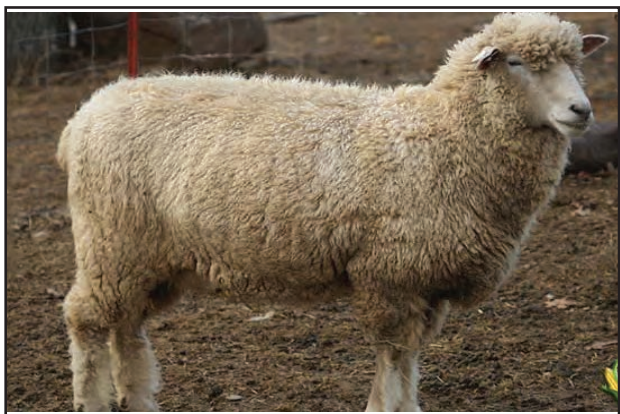


Fig. 4.4 b Rambouillet : Female

4. Body is heavy, head is carried high and ears are small.
5. Rams have large head and are horned, whereas the ewes are polled.
6. Heavy dense wool extends over the face below eyes and over entire body of the animals.

7. Average body weight of matured ram and ewe is 110 kg and 80 kg, respectively.

Economic importance

1. The breed is reared for wool and mutton purpose.
2. The breed has the best mutton conformation among all fine wool breeds.
3. Annual wool yield per animal is 4.5 - 5.5 kg.
4. The wool has long staple (5.5 – 7.5 cm), fair density, uniformity and moderate shrinkage.

Do you know ?



Sheep crossbreeds developed in India

1. Avikalin = Rambouillet × Malpura (Carpet Wool)
2. Avivastra = Rambouillet × Chokla (Fine Wool)
3. Bharat = Chokla / Nali × Merino / merino Rambouillet (Fine Wool)
4. NARI Suwarna = Garole × Deccani (Twinning)

4.3 CLASSIFICATION OF GOAT BREEDS

The goat is the earliest ruminant domesticated around 9000-7000 B.C. The goat belongs to the family *Bovidae* (hollow horned ruminants) and sub family *Caprini*, the member of genus *Capra* and species *hircus*. It is estimated that there are about 102 descriptive breeds of goats in the World. Today, India ranks first for its genetic resources and numerical superiority of goat in the World.

CLASSIFICATION OF INDIGENOUS GOAT BREEDS ON THE BASIS OF REGION

Temperate Himalayan region	Dry Northern Region	Central region	Southern region	Eastern region
1. Changthangi / Pashmina/ Kashmiri	1. Jamunapari	1. Marwari	1. Surti	1. Ganjam
2. Gaddi (Chamba)	2. Barbari	2. Sirohi	2. Osmanabadi	2. Assam hill
3. Chegu	3. Beetal	3. Mehsana	3. Malbari	3. Black Bengal
4. Bhakarwali	4. Pantaja	4. Zalawadi	4. Kanni Adu	4. Sumi - Ne
	5. Rohilkhandi	5. Kathiwari (Kutchi)	5. Sangamneri	
		6. Jakhrana	6. Kokan kanyal	
		7. Gohilwadi	7. Berari	
		8. Kahmi	8. Attapadi	
			9. Teressa	
			10. Kodi Adu	
			11. Salem Black	
			12. Bidri	
			13. Nandi durga	

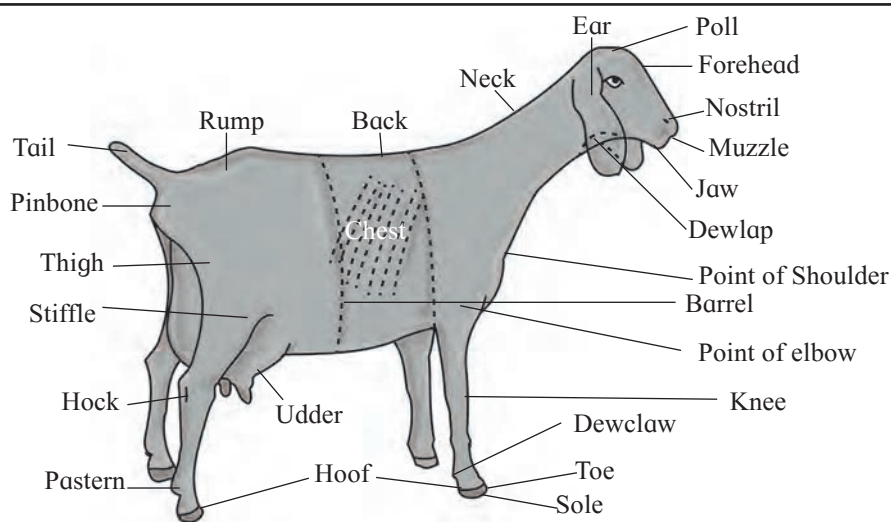


Fig. 4.5 External body parts of the goat

Can you tell ?

- Goat is known as 'Poor man's cow.'
- The Goat is ATM for 21st century.

Try this...

- Study the goat breeds found in your locality and collect their photographs.
- Name the goat breeds of Maharashtra.

4.4 GOAT BREEDS

Internet my friend

- Total number of recognized breeds of goats in India.



4.4.1 Indian breeds

1. Osmanabadi

Habitat: This breed is originated in Tuljapur and Udgir Taluka of old Osmanabad district of Maharashtra state. The breed is distributed in Latur, Beed, Nanded, Parbhani, Aurangabad, Ahmednagar and Solapur districts of Maharashtra.

Prominent characteristics

1. The breed is medium in size and prominently black in colour. Sometimes white and brown colour spotted goats are also found.



Fig 4.6 a Osmanabadi : Male



Fig 4.6 b Osmanabadi : Female

2. Males are generally horned, but females may be horned or polled.
3. Long and pendulous ears with or without spots.
4. Average body weight of adult buck and doe is 34 and 32 kg respectively.
5. Age at first kidding is 19 – 20 months.
6. The average birth weight of kid is 2.4 kg.

Economic importance

1. The breed is considered useful both for meat and milk.
2. The breed is mostly used for meat and quality of meat is good with a dressing percentage of 45-50.
3. Milk yield ranges from 0.5 to 1.5 kg per day.
4. The average lactation period is 120 days.
5. Under good management practices kidding is thrice in a two years and twinning is common.

2. Sangamneri

Habitat: The breed is commonly found in Ahmednagar, Pune and Nashik districts of Maharashtra.

Prominent characteristics

1. Sangamneri is medium sized goat breed with long hair.
2. Coat colour of the breed is highly variable i.e. white, black or brown. Some goats with mixed patches are also found.
3. Ears are medium sized and drooping.
4. Horns are medium sized and directed backward and upward in both sexes. .
5. Average live weight of buck and doe are 38 and 29 kg, respectively.

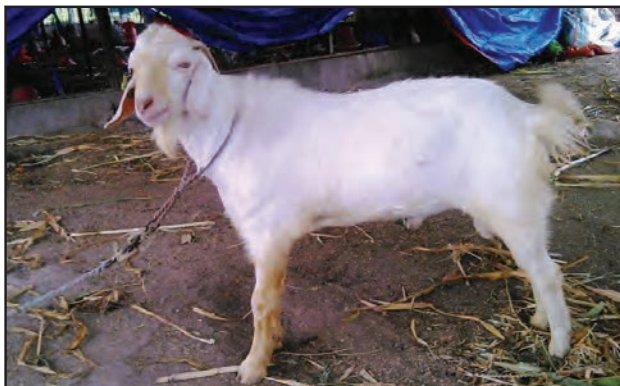


Fig 4.7 a Sangamneri : Male



Fig 4.7 b Sangamneri : Female

6. The average birth weight of kid is 1.9 kg.
7. Average age at first kidding is 18 months

Economic importance

1. Sangamneri is useful for both meat and milk.
2. Quality of meat is good with a dressing percentage of 41-46.
3. The breed produces 165 kg of milk in a lactation period of 150 days.
4. Kidding occurs thrice in two year. Doe produces single or twins

3. Konkan Kanyal

Habitat: The breed is predominantly found in Sindhudurg district of Maharashtra.

Prominent characteristics

1. Colour is black, with white markings on collar and lower jaw, ventral surface white.

2. Ears are black with white margin, flat open, long drooping.
3. Horns are backward, straight and pointed.
4. Forehead is flat and broad, black in colour.



Fig 4.8 a Kokan Kanyal : Male



Fig 4.8 b Kokan Kanyal : Female

Economic importance:

1. Birth weight ranges from 1.5 to 2.5 Kg.
2. Adult body weight ranges from 32 to 35 Kg in male while 25 to 30 Kg in female.
3. Goats are regular breeders and breed round the year.
4. Twinning percentage is 66.00.

4. Berari

Habitat: Originated from Berar region of Central Province which is recently known as Vidarbha region of Maharashtra state. Goats are found in Vidarbha region particularly in Nagpur, Wardha, Amravati and Akola districts.

Prominent characteristics

1. Coat colour varies from dark tan to light tan, Light to dark strip on lateral sides from base of horn to nostrils, black colour ring around neck in adult male.
2. Black hair line along with the vertebral column extending up to tail in both sexes was observed as unique characteristic in Berari goat.



Fig 4.9 a Berari : Male



Fig 4.9 b Berari : Female

3. Forehead is convex.
4. Ears are pendulous (drooping), flat and leafy

Economic importance

1. Adult body weight is 34 kg in male and adult female weighed around 28 kg.
2. Age at first kidding is 14 to 15 months.
3. Twinning is around 35 percent.

4. Daily milk production is 530 g and milk yield per lactation is 78 kg with lactation length of 130 days.

5. Jamunapari

Do you know ?

Jamunapari is known as milk Queen of India



Habitat: The breed is originated in between the region of Jamuna, Ganges and Chambal rivers. The breed is mostly found in Etawah, Agra, Mathura, Chakar nagar and Batpura districts of Uttar Pradesh.

Prominent characteristics

1. Jamunapari is the biggest and majestic goat breed of India.
2. The colour of the breed is generally white or light yellowish tan with light brown spots on the neck and face. Sometimes black or tan coloured spots are found on body.



Fig 4.10 a Jamunapari : Male



Fig 4.10 b Jamunapari : Female

3. The typical character of the breed is highly convex nose with a tuft of hair known as “*Roman nose*” or “*Parrot mouth*” appearance.
4. Ears are too long (20 to 25 cm), pendulous and tubular.
5. Horns are present in both sexes and are short and flat.
6. Tail is short and thin.
7. Thick hairy portion is found on buttocks as like feathers, hence known as ‘*Pari*’.
8. Udder is well developed with conical teats.
9. Average live weight of buck and does are 75 and 55 kg, respectively.
10. The average birth weight of kid is up to 4kg.

Economic importance

1. The breed is most famous dual purpose breed of India.
2. The breed produces 1.5-2.0 kg of milk per day and the average milk fat is 4-5 percent.
3. Average lactational milk yield is 200 kg.
4. Dressing percentage is 45-48.
5. Usually kidding is once in year. Does give birth to 57 percent single and 43 percent twins.

Remember...

Jamunapari breed is extensively used to upgrade indigenous breeds for milk and meat purpose.



6. Black Bengal

Habitat: The breed is originated from South Bengal and found in West Bengal, Assam and its adjoining areas.

Prominent characteristics

1. The colour of breed is predominantly black, sometimes brown and white strains also noticed.
2. The breed is dwarf in size. Legs are short and straight back.
3. Both sexes are beard.
4. Breed is having soft, glossy and short hairs.
5. Ears are short and neatly upright.



Fig 4.11 a Black Bengal : Male



Fig 4.11 b Black Bengal : Female

6. Horns are 5 – 8 cm long in both sexes and slightly tilted upward or straight.
7. Udder is well set and nicely developed.
8. Average live weight of buck and doe is 15 and 12 kg, respectively.
9. The average age at first kidding is 13 – 15 months.

Remember...

Black Bengal is famous for fine skin (shoe leather), quality meat and prolificacy



Economic importance

1. Breed is reared for meat. Meat of this breed is excellent and palatable.
2. Average lactational yield is 53 kg with 4 – 5 percent fat.
3. Average lactation length is 90 – 120 days.
4. The breed is most prolific and kidding twice in a year.
5. The leather is very fine used to prepare shoes.

7. Barbari

Habitat: The breed is originated in the city of Barbera of East Africa. In India Barberi is distributed at Etawah, Agra, Mathura, Aligarh district of UP and Bharatpur district of Rajasthan.

Remember...

Barbari is a dwarf breed, highly suited for stall feeding and hence generally found in cities.



Fig 4.12 a Barbari : Male



Fig 4.12 b Barbari : Female

Prominent characteristics

1. The colour of the breed varies but white with red or tan spots is most common.
2. Barberi is small size goat, legs short, bones fine and wedge shaped body.
3. Ears are small-tubular, erect, cricked, upward and outwards.
4. Horns are medium, slightly twisted, directed upward and backward.
5. Average body weight of buck and doe is 38 and 23 kg respectively.
6. The average birth weight of kid is 1.0 kg
7. The average age of first kidding is 15 - 16 months.

Economic importance

1. Barbari is a good milker and highly prolific.
2. Average lactational yield is 112 kg with percent milk fat and average lactation length is 152 days.
3. Barbari is a prolific breeder. Kidding occurs twice in 12 – 15 months with 65 percent twins and 10 percent triplets.
4. Meat quality is very good.

8. Changthangi

Synonyms : *Pashmina or Kashmiri*

Habitat: The breed is predominantly found in Ladakh, Lahul and Spiti valleys and neighbouring area of Himachal Pradesh.

Prominent characteristics

1. Changthangi breed is also known as Pashmina due to its ability to produce longer and finer hairs i.e. 'pashmina' on the sides and shoulders.
2. Pashmina is a medium sized goat breed predominantly white in colour (50%) and sometimes brown, grey or black.
3. Ears are small, pricked and pointed outwards.



Fig 4.13 a Changthangi : Male



Fig 4.13 b Changthangi : Female

4. Both sexes have large horns, turning outward, upward and inward to form a semicircle but wide variation exists in both shape and size.

5. The breed looks pretty with long coarse hair. Body of the breed is strong with powerful legs.
6. Average body weight of buck and doe is 20 kg.
7. Average age at first kidding is 20 months.
8. The average birth weight of kid is 2.1 kg.

Economic importance

1. The breed is highly valued for its warm fine delicate fiber (hair) called Pashmina. Pashmina is harvested once in a year in the month of June or July.
2. Average production of Pashmina is 215 gm with a range of 70-500 gm per animal.
3. Kidding occurs once in a year and does generally produce single kid.
4. Does produce enough milk for kid.
5. Meat of the breed is of good quality.

Do you know ?

- Pashmina is used for making high quality Kashmiri 'Rug or Shawl', known as Ring Shawl.



9. Sirohi

Habitat: Sirohi goat is found in Sirohi, Bhilwara, Tonk and Jaipur districts of Rajasthan and Palampur district of Gujarat.

Remember...

Sirohi is used for upgradation of goats for meat purpose.



Prominent characteristics

1. Sirohi goats have a predominantly brown coat, with light or dark brown patches.
2. The coat colour of some goats is completely white, which are found in Ajmer region, hence known as Ajmeri.

3. Some goats are wattled and have medium-sized flat leaf-like drooping ears.
4. Both sexes have small horns, curved upward and backward



Fig 4.14 a Sirohi Male



Fig 4.14 b Sirohi Female

Economic importance

1. Sirohi is mainly reared for meat production.
2. Twinning is around 10 percent.
3. Birth weight is 2.5 to 3 Kg
4. Average lactational milk yield is 65 Kg
5. Average lactation length is 120 days

Can you tell ?

Which is the best milch purpose goat breed of the World?



4.4.2 Exotic goat breeds

1. Saanen

Habitat: The breed is originated in West and North-West Switzerland.

Prominent characteristics

1. The breed is white to biscuit coloured with black spots on the nose, ears and udder.
2. The goats are large in size with straight nose and erect ears pointed forward and upward.
3. Bucks are horned whereas does are hornless (Polled).



Fig 4.15 a Saanen Male



Fig 4.15 b Saanen Female

Remember...

The breed is sensitive to strong sunlight and therefore indoor management is necessary.



4. The body has good dairy conformation and the udder is well developed.
5. Body weight varies from 55-70 kg.

Economic importance

1. The breed is persistent in milking hence known as 'Milk Queen' of the goat World.
2. Daily milk production is 1.0 – 3.0 kg with 3.5 per cent milk fat.

2. Boer

Habitat: The Boer goat was developed in South Africa in the early 1900s for meat production. Their name is derived from the Afrikaans (Dutch) word *boer*, meaning farmer. The breed is brought in India in year 1993 by Maharashtra *Sheli Va Mendhi Sanshodhan va Vikas Sanstha* Phaltan, Dist. Satara in the form of embryo and frozen semen.

Prominent characteristics

1. Boer goats commonly have white bodies and distinctive brown heads.
2. Some Boer goats can be completely brown or white or paint, which means large spots of a different color are on their bodies.
3. Both the sexes have long and pendulous ears.
4. Horns are curved and backward.



Fig 4.16 a Boer Male



Fig 4.16 b Boer Female

Economic importance

1. This breed is popular for meat.
2. The adult body weight ranges from 80 to 120 Kg, hence the breed is mostly reared for *quorbani* (Sacrifice) *Eid* purpose.
3. Kidding is possible every eight months.
4. Milk production during the first 12 week of lactation ranged from 1.8 to 2.5 kg/day.
5. Dressing percentage is 45.

Do you know ?

- Central Institute for Research on Goat is located at Makhdoom, District Mathura, Uttar Pradesh.
- Central Sheep and Wool Research Institute is located at Avikanagar, District Tonk, Rajasthan.



EXERCISES

Q.1 Fill in the blanks

1. The sheep belongs to species.
2. The goat breed of Vidarbha region of Maharashtra is.....
3. The unexplored sheep breed found in Sangli district is
4.breed of goat found in Ahmednagar district is white in colour
5. goat breed is famous for shoe leather.
6.breed is known as 'Pari'.
7.breed is recognized as 'milk queen' of goat world.

Q.2 Make the pairs

A		B	
1	Osmanabadi	1	Carpet wool
2	Pashmina	2	Black Coloured
3	Garole	3	NARI Suwarna
4	Deccani	4	Shawl/Fine wool
5	Jamunapari	5	Gujarat
		6	Majestic goat
		7	Fine leather

Q.3 State true or false

- 1) Changthangi breed is found in Ladakh.
- 2) The habitat of Sangamneri goat is located in Sangameshwar district.
- 3) Sirohi is good milker and highly prolific.
- 4) Jamunapari is dwarf breed suited for stall feeding.
- 5) Merino is known as milk queen of the Goat world.

Q.4 Answer in brief.

1. Write short note on Osmanabadi goat.
2. Give the prominent characteristics of Konkan Kanyal goat.
3. Why Jamunapari is known as 'Pari'?
4. Enlist the crossbreds of sheep developed in India.
5. Give economic importance of Sangamneri goat.

Q.5 Answer the following questions

1. Explain the characteristics of Konkan kanyal breed .
2. Write in brief characteristics of Deccani breed of sheep.
3. Complete the following chart.

Sr. No	Name of Breed	Habitat/ Origin	Characteristics
1.	Sangamneri	Sangamner	
2.	Shoe leather
3.	Osmanabadi		
4.	Merino		Fine wool

4. Give the typical characteristics of Changthangi Goat.
5. Which exotic breeds are used for cross breeding in sheep, give two typical characteristics.

Q.6 Answer the following questions in detail

1. Give agro-ecological classification of Indian Goat/Sheep breeds.
2. Describe in detail the habitat prominent characteristics and economic importance of Deccani/ Merino sheep/Osmanabadi goat/ Jamunapari goat.