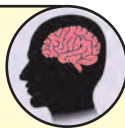


2. CATTLE BREEDS

Can you recall ?



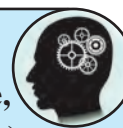
1. Terms - breed and species.
2. Different cattle breeds of India.
3. Indigenous cattle breeds used for draft, dual and milk purpose.
4. Exotic cattle breeds used for crossbreeding purpose.

India is gifted with large number of cattle breeds particularly draft purpose breeds. In all there are 43 well recognized cattle breeds in India. In addition, large cattle population comes under the 'non-descript' category. Majority of the Indian breeds are low milk producers and are reared primarily for the production of bullocks which are used for draft purpose.

2.1 CLASSIFICATION OF CATTLE BREEDS

Cattle breeds are broadly classified into three major types according to their utility.

Remember...



Cattle belongs to family Bovidae, genus *Bos* (ruminant, quadrupeds) and species *Bos indicus* (humped) and *Bos taurus* (without hump)

- Milch purpose breeds** - Sahiwal, Red Sindhi, Gir and Tharparkar.
- Dual purpose breeds** - Deoni, Ongole, Kankrej, Hariana and Rathi.
- Draft purpose breeds** - Amritmahal, Bachaur, Badri, Bargur, Belahi, Binjharपुरi, Dangi, Gangatiri, Gaolao, Ghumusari, Hallikar, Kangayam, Kenkatha, Khariar, Kherigarh, Khillar, Konkan Kapila, Kosali, Krishna Valley, Ladakhi, Lakhimi, Malnad Gidda, Malvi, Mewati, Motu, Nagori, Nimari, Ponwar, Pulikulam, Punganur, Red Kandhari, Siri, Umblachery and Vechur.

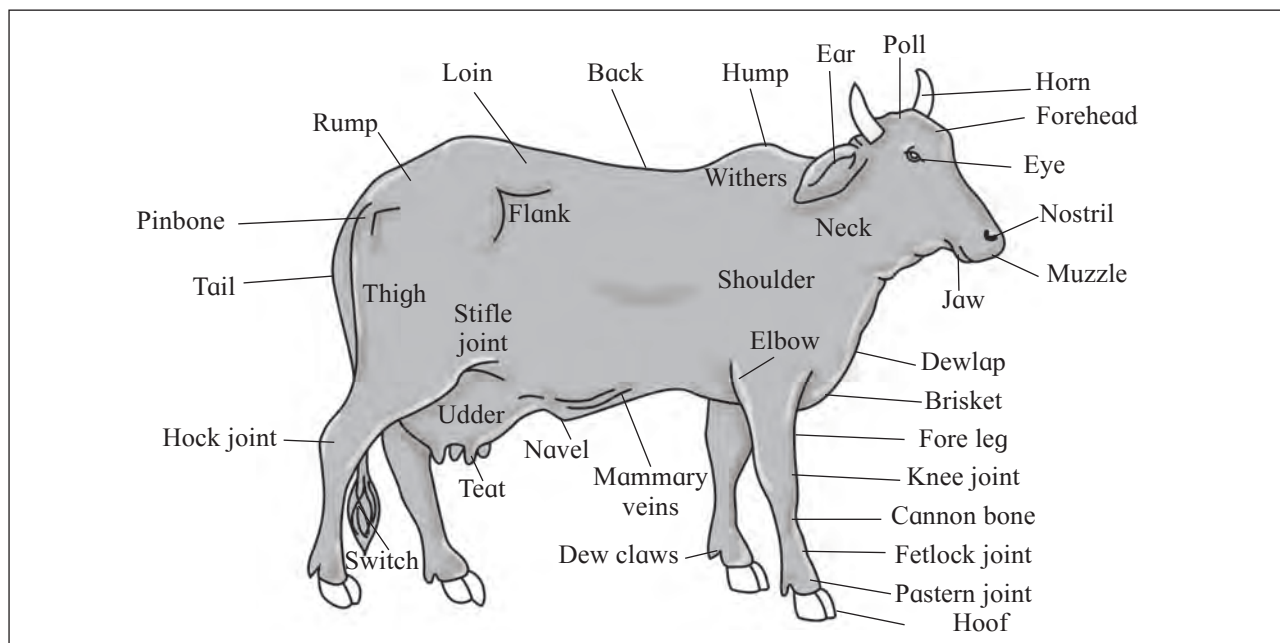


Fig. 2.1 External body parts of cow

Can you tell ?

Cattle breeds of Maharashtra.



2.2 MILCH PURPOSE

2.2.1 Sahiwal

Synonyms : *Lola, Montgomery, Lambi-Bar, Multani.*



Fig. 2.2 a Sahiwal : Male

Origin and Habitat : The Sahiwal breed was originated in the dry areas of the Punjab which lies along the India – Pakistan border and its breeding tract is Montgomery districts now named as Sahiwal district. Good animals are also seen in Punjab, Delhi, Uttar Pradesh, Bihar, Chattisgarh and Madhya Pradesh.

Do you know ?

Sahiwal is the best milk breed of Indian subcontinent and the highest milker of all the Zebu breeds.



Prominent characteristics

1. Deep body, loose skin (hence the Lola), short legs, stumpy horns, broad and lethargic posture are the typical characters of the breed.
2. Colour of Sahiwal is reddish brown to dun sometimes with white patches on the neck and the underline.

3. Horns are short and thick, not exceeding 3 inches in length. Loose horns are common in females.



Fig. 2.2 b Sahiwal : Female

4. Massive hump (in male), voluminous dewlap and pendulous sheath is prominent.
5. Tail is long whip like, almost reaching to the ground, tapering to a good black switch is observed.
6. Naval flap is prominent in female.
7. Average body weight : Male - 522 kg, Female - 340 kg.

Economic importance

1. Average lactational milk yield is 2200 kg.
2. Age at first calving is 40 months.
3. Inter calving period is 450 days.
4. The bullocks are generally docile and lethargic, making them more useful for slow work.

Do you know ?

The highest milk producer cattle breed in India.



2.2.2 Red Sindhi

Synonyms : *Scindh, Scindhi, Red Karachi, Sindhi, Malir (Baluchistan).*

Origin and Habitat : The native tract of Red Sindhi breed is Karachi and Hyderabad districts of Pakistan. The portion of Sind called “Kohistan” is the real breeding tract of this breed.



Fig. 2.3 a Red Sindhi : Male

Prominent characteristics

1. Body is medium sized and compact
2. Animals have well proportionate body and are of extremely docile in nature.
3. Horns are thick, emerging laterally and end in blunt points.
4. Colour is red with the shades varying from dark red to light. Males are darker than females, when matured, may be almost black on hump, head, feet and tail.



Fig 2.3 b Red Sindhi : Female

5. Heavy hump, dewlap and sheath are characteristics of the males.
6. Cows have capacious udder with a tendency to become pendulous in heavy milkers.
7. Average body weight : Male - 450 kg, Female - 295 kg.

Economic importance

1. Red Sindhi cows have good production potential and the average lactational milk yield is 1800 kg.
2. The average age at first calving is 46 months.
3. The inter calving period is 500 days.
4. Bullocks of this breed are suited for road and field work. They are hardy and resistant to various diseases.
5. Red Sindhi cattle have capacity to adopt to different climatic conditions, hence the bulls are being used to grade up the local stock.

In Australia, Red Sindhi have been successfully used in crossing with British breeds to produce tropical beef types.

Can you tell ?

Average lactational milk yield of Red Sindhi cow



2.3.3 Gir

Synonyms : *Kahtiawari, Surti, Decan.*

Origin and Habitat : Gir is originated in South-West region of Gujarat State and have spread to neighbouring Maharashtra and Rajasthan. The native tract of breed is Gir forest and hilly mounds of Kathiawar

Prominent characteristics

1. The body is robust and well proportionate.
2. Colour varies from shades of red and white to almost black and white or entirely red.
3. Forehead is prominent, convexly bulged out and broad like a bony shield. This overhangs eyes in such a way that they appear to be partially closed and it gives sleepy appearance to animal.
4. Ears are long, pendulous, drooping resembling like a curling leaf with a notch at the tip.



Fig. 2.4 a Gir : Male



Fig. 2.4 b Gir : Female

5. Horns are curved, turning back at the tip.
6. Animals have moderately developed dewlap.
7. Males have large and pendulous sheath.
8. The tail is long and whip like.
9. The udder is well developed, round in shape and teat tips are round.
10. Average body weight : Male - 544 kg, Female - 386 kg.

Economic importance

1. Gir cows are good milkers and average lactational milk yield is 1750 kg.
2. Average age at first calving is 50 months.
3. The inter calving period is 500 days.
4. Bullocks are heavy and powerful. They are efficient for farm operations for all types of soils.

5. The Gir animals are famous for their tolerance to stress conditions. They are resistant to various tropical diseases.

Remember...



- The Gir derives its name from the Gir Forest, which is the natural habitat of the breed.
- Gir females have been found as good female parent in crossbreeding programme with elite exotic breeds.

Can you recall ?



The powerful draft breed of cattle

2.2.4 Tharparkar

Synonyms : *Thari, White Sindhi, Grey Sindhi, Cutchi.*

Origin and Habitat : Thari cattle are found in the vicinity of Umarkot, Naukot, Dhoro, Naro, Chhor, Mithi, Islamkot and Khari Ghulam Shah of Rajasthan. Though the origin of Thari is from arid region but the breed is spread in tropical regions too.

Prominent characteristics

1. Tharparkar breed is deep, strongly built, medium sized, with straight limbs and well set feet, and with an alert and springy carriage.
2. Body colour is white or gray. In males, the gray color may deepen, particularly on the fore and hind quarters.
3. The head is of medium size, the forehead is broad and flat or slightly convex above the eyes.
4. The poll is broad, the front of the horns and face are practically on one plane.

5. The skin between the eyes is often wrinkled, the wrinkles running perpendicularly.
6. The eyes are full and bright. The eyelashes are black and there is a small ring of black skin on the eyelids.
7. The ears are somewhat long, broad and semi-pendulous and face forward.



Fig. 2.5 a Tharparkar : Male



Fig. 2.5 b Tharparkar : Female

8. Horns are set well apart curving gradually upwards and outwards in the same line as that of the poll with blunt points inclined inwards.
9. The hump in males is moderately well developed, firm and placed in front of the withers.
10. The dewlap is of medium size and the skin is fine and mellow.
11. The sheath in the males is of moderate length and is semi-pendulous.

12. The navel flap in the females is prominent.
13. The hooves are hard and black, of moderate size and have no tendency to turn out.
14. Udder is moderately developed with three to four inches long teats, with symmetrical placement.
15. Average body weight : Male - 550 kg, Female - 408 kg.

Economic importance

1. The average lactational milk yield is 1600 kg.
2. The average age at first calving is 42 months.
3. The inter calving period is 550 days.
4. Bullocks are suited for carting and ploughing.
5. They are efficient, sturdy, with a medium speed.

2.3 DUAL PURPOSE

2.3.1 Deoni

Synonyms : *Dongarpatti, Dongari*

Origin and Habitat : The origin of Deoni cattle is by way of breeding of local animals with Gir. The home tract of Deoni is Latur district of Maharashtra and adjoining area of Andhra Pradesh and Karnataka. The breeding tract of Deoni cattle lies in Balaghat range of the Sahyadri hills.

Prominent characteristics

1. Deoni is a medium heavy animal.
2. Body colour is clear white in *Wannera* and *Balankya* strain, whereas irregular black spots are seen all over the white body in *Shevera*.
3. Body is moderately developed symmetrical with clearly defined muscles.

4. Head is masculine, alert, broad, slightly convex and held high on the apex of the neck with a majestic look.
5. Fore head is prominent, broad and slightly bulging.
6. Ears are long, drooping with slightly curved tips.



Fig. 2.6 a Deoni : Male



Fig. 2.6 b Deoni : Female

7. Horns are medium, thick, apart, emerging from the sides of the poll behind and above the eyes in outward and again curving upward direction.
8. Eyes are prominent, bright and alert.
9. Hump is massive and well developed in males.
10. Chest is deep and wide, with well sprung ribs.
11. Skin is thick and loosely attached with the body.

12. Dewlap and sheath are medium and pendulous.
13. Tail is long whip like, reaching below the hock joint with black and white mixed coloured switch.
14. Udder is well attached and medium in size.
15. Average body weight : Male - 600 kg, Female - 400 kg.

Do you know ?



- Deoni is an admixture of Gir, Dangi and local cattle.
- *Wannera* (Black face with white body), *Balankya* (Complete White) and *Shevera* are the three strains of Deoni cattle according to their colour pattern
- Superior draft capacity, tolerant to diseases, adopted to tropical climate and tolerant to drought conditions are excellent qualities of Deoni breed.

Economic importance

1. The average lactational milk yield is 860 kg.
2. The average age at first calving is 43 months.
3. The inter calving period is 447 days.

Remember...



Deoni animals are used for cross breeding with Holstein Friesian breed to develop Holdeo crossbreds.

2.3.2 Ongole

Synonym : *Nellore*.

Origin and habitat : This breed is found in Ongole taluka of Nellore, Guntur and Prakasam districts of Andhra Pradesh.

Prominent characteristics

1. The Ongole cattle are large sized animals
2. Animals have long body and short neck.
3. They have glossy white coat colour called *padakateeru*. The male has dark gray markings on the head, neck and hump.



Fig. 2.7 a Ongole : Male



Fig. 2.7 b Ongole : Female

4. Face is short with greater breadth of forehead and muzzle.
5. Eyes are large, prominent and heavy looking, elliptical in shape.
6. Ears are moderately long and slightly in drooping position.
7. Horns are short and stumpy, growing outwards and backwards.
8. The hump in the males is well developed and erect.
9. Tail is long with black switch and touching to the ground.

10. Average body weight: Male - 600 kg, Female - 375 kg.

Economic importance

1. Cows are medium milkers and average lactational milk yield is 700 kg.
2. The average age at first calving is 50 months.
3. The intercalving period is 550 days.
4. Bullocks are heavy and medium workers.

2.3.3 Kankrej

Synonym : *Nandibail*

Origin and habitat : Kankrej breed is originated in Mehsana, Kutch, Ahmedabad, Kheda, Sabarkantha, Banaskantha districts of Gujarat and Rajasthan states. Good herds of Kankrej animals are also seen in areas of sugar factories in Maharashtra.

Prominent characteristics

1. Kankrej is one of the heaviest Indian breeds with broad chest.



Fig. 2.8 a Kankrej : Male

2. Body colour varies from silver grey to iron grey with thick skin.
3. Hump is large and dewlap is moderate.
4. Face is short with large ears and lyre-shaped horns.
5. The gait is particular to the breed known as $1\frac{1}{4}$ spaces (*Sawaichal*) with smooth movement of the body keeping the head noticeably high.



Fig.2.8 b Kankrej Female

6. Average body weight : Male - 530kg, Female - 375kg.

Economic importance

1. Cows are fairly good milkers and average lactational milk yield is 1000 kg.
2. The average age at first calving is 50 months.
3. The inter calving period is 550 days.
4. Bullocks are heavy to medium workers.

Do you know !

Kankrej breed is famous for particular walking type of gait known as *Sawaichal*.



2.3.4 Hariana

Synonym : Nil.

Origin and habitat : The breed is originated in east Punjab and is now extensively found in Rohtak, Hissar, Gurgaon, Karnal and Delhi regions.

Prominent characteristics

1. Proportionate body with compact graceful appearance.
2. Popular colour is white or light grey.
3. Head is carried high, horns are stumpy and short, curving upward and inward.
4. Face is long and narrow, flat forehead and a bony prominence in the centre of the poll. Ears are small and sharp.

5. Sheath is short and navel flap is rudimentary.
6. Legs are moderately long and lean. Pin bones are prominent and far apart in females but close in males.



Fig. 2.9 a Hariana : Male



Fig. 2.9 b Hariana : Female

7. Tail is short, thin and tapering with a black switch reaching just below the hocks.
8. The average body weight: Male - 430kg, Female - 310kg.

Economic importance

1. Average lactational milk yield is 800 kg.
2. Age at first calving is 47 months.
3. The inter calving period is 425 days.
4. The bullocks are good working animals for fast ploughing and road transport.

2.4 DRAFT PURPOSE

2.4.1 Khillar

Synonyms : *Hanam, Khillari.*

Origin and habitat : The breed originates from Solapur, Satara and Sangli districts of Maharashtra. The good animals are also seen in adjoining part of Karnataka.

Remember...

The variety Hanam Khillar or sometimes known as 'Atpadi Mahal' is prevalent in the southern Maharashtra. In Solapur and Satara districts and their adjoining areas the breed is known as 'Mhaswad Khillar' in the Khandesh, as Tapi Khillar or Thillari. A type of more recent origin is known as Nakali Khillar.



Prominent characteristics

1. The typical Khillar animal has compact body, tight skin, with clean cut features and the gait.
2. There is a slight rise in the level of the back towards the pelvis.
3. The ribs are well sprung and give the trunk a barrel shape.
4. The gait of the Khillar is quick and spirited.
5. Khillar of the Deccan plateau, the Mhaswad and the Atpadi Mahal types are greyish white in colour.
6. The colour in the males is deeper over the forequarters and hindquarters, with peculiar gray and white mottle marking on the face.
7. The Tapi Khillar is white with carotry nose and carotry hooves.
8. The *Nakali* Khillar is gray with tawny or brickdust colour over the forequarters.



Fig. 2.10 a Khillar : Male



Fig. 2.10 b Khillar : Female

9. Newly born calves have rust-red coloured polls, but this colour disappears within a couple of month.
10. Average body weight : Male - 362kg, Female - 294kg.

Economic importance

1. Average lactational milk yield is 400 kg.
2. Age at first calving is 1500 days.
3. The breed is highly valued as fast paced, powerful draft animals.
4. Khillar animals have hard red hooves and are extremely fit for draft purpose hence always fetch very good price.

Try this...

Get information about different cattle breeds reared in your area



5. They are mostly used for agricultural operations and transport of goods.
6. Males of Khillar often become furious and develop revenge taking attitude if ill-treated.

2.4.2 Dangi

Synonyms : *Kalkheri, Sonkheri.*

Origin and habitat : Dangi have taken their name from the home tract of its origin in the Dang in then Bombay State; it is a hilly tract with heavy rainfall. Best individuals are found in Ahmednagar and Nashik districts of Maharashtra and adjacent area of Gujarat State.

Prominent characteristics

1. The Dangi animals are broken red and white or black and white coloured.



Fig. 2.11 a Dangi : Male



Fig. 2.11 b Dangi : Female

2. The animals are of medium in size, with deep body and generally of ponderous built.
3. The head is usually small with a slightly protruding forehead. The muzzle is large.
4. The horns are generally short and thick. The ears are small.
5. The legs are short and stout. The hooves are exceptionally hardy, being black and flint-like.
6. The dewlap is slightly pendulous. The sheath, though loose, is not excessively pendulous.
7. The hump is of medium size and firm.
8. The skin is oily and of medium thickness and the coat is shiny. It facilitates fast movements of water from body surface during rainy-days.
9. Average body weight : Male - 550kg, Female - 375kg.

Economic importance

1. The cows are poor milkers. Average lactational milk yield is 700 kg.
2. Age at first calving is 1600 days.
3. Dangi bullocks are primarily medium-slow draft animals.
4. The breed is known for its excellence in working qualities under heavy rain and marshy fields in Konkan region of Maharashtra states and adjoining parts of Gujarat and also on the hilly tracts.
5. The cattle are extremely hardy and thrive well in hilly and heavy rainfall tract.

Remember...

Dangi animals exude an oily secretion which protects the skin and body from heavy rain.



2.4.3 Red Kandhari

Synonym : *Lal Kandhari*.

Origin and habitat : The Red Kandhari cattle are found in the purest form in Kandhar, Mukhed, Nanded, Biloli and Naigaon Tahsils of Nanded district and adjoining pockets of Ahmedpur, Chakur, Shirur Anantpal, Ausa and Udgir tahsils of Latur district, Parli tahsil of Beed and Hingoli tahsil of Hingoli district in Marathwada region.

Prominent characteristics

1. Red Kandhari is a medium sized, strong and robust animal.
2. The body is compact squarely built with well proportionate limbs
3. The bull has a majestic gait.
4. The colour of the breed is uniform deep dark-red, but variations from a dull red to almost dark brown are also found.



Fig. 2.12 a Red Kandhari : Male



Fig. 2.12 b Red Kandhari : Female

5. The head is moderate in size, well proportionate with clear cut outlines.
6. Forehead is broad between eyes and is slightly bulging.
7. Ears are long, slightly drooping sideways and have rounded tips.
8. Eyes are shining with a black colour around the eye. Muzzle is black.
9. Horns are evenly curved and are of medium size.
10. Coronet is black.
11. Dewlap is of medium size with few folds. Hump is tightly formed and large in males.
12. Tail is fairly broad, tapering and is moderately long with a good black switch which extends well below the hocks and reaching coronet.
13. Udder is small and tucked up above the belly line, teats are small but squarely placed.
14. Average body weight : Male - 430kg, Female - 350kg.

Do you know ?

Being highly efficient in farm operations and carting, Red Kandhari animals are sold at considerably high price in the cattle markets.



Economic importance

1. The cows are poor milkers. Average lactational milk yield is 600 kg.
2. Age at first calving is 1200 days.
3. The bullocks are used mainly for draft purpose. Different agricultural operations like ploughing and carting are efficiently done.

2.4.4 Gaolao

Synonym : *Gawali*

Origin and habitat : Good Gaolao animals are seen in Southern Madhya Pradesh and Vidarbha region of Maharashtra. The Gaolao is predominantly located in Arvi and Karanja tahsils and the adjoining villages of Wardha and Nagpur districts of Maharashtra and Chhindwara in Chhattisgarh.

Prominent characteristics

1. Gaolao animals are medium in height, lightly built and tend to be narrow and long.
2. Females are usually white and males are gray over the neck, hump and quarters.



Fig. 2.13 a Gaolao : Male



Fig. 2.13 b Gaolao : Female

3. The head is markedly long narrow with a straight profile.
4. Adult individuals show roman nose like appearance of the forehead. The forehead is usually flat, though it appears rigid at the top, giving a slightly convex appearance.
5. The eyes are almond-shaped and placed slightly at angles.
6. The ears are of medium size and are carried high.
7. The horns are short and stumpy, blunt at each points and commonly slope slightly backwards.
8. The neck is short, with a moderately well-developed hump, which is usually loose and hangs on one side.
9. Hooves are of medium size, hard and durable, and suited to hard road and hillside work.
10. The dewlap is large and voluminous but the sheath is moderately developed.
11. The skin is thin but loose.
12. The tail is comparatively short, reaching only a little below the hocks.
13. Average body weight: Male - 431kg, Female - 340kg.

Economic importance

1. Average lactational milk yield is 700 kg.
2. Age at first calving is 1300 days.
3. Bullocks are good for fast-trotting type draft work suitable for quick transport in the hilly areas.
4. The Gaolao are excellent for transportation and agriculture operations under hot and dry conditions of Vidarbha region.
5. It is a small and compact breed having good disease resistance capacity.

2.4.5 Konkan Kapila

Synonym: *Kali Kapila*

Origin and habitat : The breed is originated from Sindhudurg, Ratnagiri, Raigad, Thane and Palghar districts of Konkan region of Maharashtra and adjoining area of Goa state.

Prominent characteristics

1. Colour is generally black or reddish however, brown, white and mixed coloured animals are observed.



Fig. 2.14 a Konkan Kapila : Male



Fig. 2.14 b Konkan Kapila : Female

2. Body is small in size and compact.
3. Head is small and straight. Forehead is sometimes slightly concave.
4. Horns are grey in colour, cylindrical, straight, outward and backward.

5. Hump and dewlap is small and medium size.
6. Ears are short, erect and horizontal in orientation.
7. Udder is small in size and teats are cylindrical with pointed and rounded tips.
8. Tail is broad at base and tapering towards the end with large tuft of black hairs.

Economic importance

1. Average lactational milk yield is 500 kg.
2. Age at first calving is 1450 days.
3. The Konkan Kapila individuals are hardy and well survive in hot and humid conditions of coastal area of Maharashtra and Goa.

2.5 EXOTIC BREEDS

2.5.1 Holstein Friesian

Origin and habitat : Friesland, Holland, spread all over the world in different countries.

Remember...

Holstein Friesian is an excellent dairy breed.



Prominent characteristics

1. Animals of this breed are ruggedly built and possess large and capacious barrel.
2. Colour is black and white with irregular patches not blended.



Fig. 2.15 a Holstein Friesian : Male

3. The head is long narrow and straight.
4. Body is wedge shaped and voluminous.
5. Chest is big, wither is rounded and navel is loose.
6. Thighs are straight.
7. Udder is capacious and voluminous with prominent milk veins.



Fig. 2.15 b Holstein Friesian : Female

Remember...

Holdeo is cross between Holstein Friesian and Deoni cattle.



8. Tail is long with white switch.
9. Average body weight : Male -1000kg, Female - 675kg.

Economic importance

1. Average lactational milk yield is 6000 kg.
2. Age at first calving is 780 days.
3. They are excellent grazers.

2.5.2 Jersey

Origin and habitat: Island Jersey in English Channel.

Prominent characteristics

1. Body is compact with medium size.
2. The colour is fawn with or without white markings. The muzzle is black with light coloured encircling rings.
3. The wedges are having straight top line.



Fig. 2.16 a Jersey : Male



Fig. 2.16 b Jersey : Female

4. Head is comparatively tight. Forehead is double dished.
5. The back is straight and runs in level with sharp withers.
6. Animals are hardy and fine skinned.
7. The udder is large capacious with well placed teats.
8. The horns are small and tapering toward the tip and grow forward and curved inside at the tips.
9. The ears are small and the eyes are protruding.
10. Average body weight : Male - 675kg, Female - 450kg.

Do you know ?

Jersey is the small sized dairy breed.



Economic importance

1. Milk of this breed is in large demand in butter industries because milk is yellow in colour with fat globules large in size.
2. Average lactational milk yield is 4000 kg.
3. Age at first calving is 690 days.
4. The breed can withstand tropical humid climate more than other exotic breeds. Jersey survives on medium quality pasture.



Fig. 2.17 a Brown Swiss : Male

Remember...

Phule Triveni is a three breed cross developed from Holstein Friesian, Jersey and Gir breeds at Mahatma Phule Krishi Vidyapeeth, Rahuri, District Ahmednagar.



2.5.3 Brown Swiss

Origin and habitat : Switzerland

Remember...

Brown Swiss is a docile breed and tolerant to more heat.



Prominent characteristics

1. Body is large, wedge shaped. The head is broad and dished.
2. The skin is thick but loose.
3. The colour varies from silver to dark brown.
4. The horns are whitish in colour with black tips and medium in length. They grow forward, upward and outward.
5. The udder is large and capacious.
6. Average body weight : Male - 900kg, Female - 625kg.



Fig. 2.17 b Brown Swiss : Female

Economic importance

1. Average lactational milk yield is 5000 kg.
2. Age at first calving is 900 days.
3. Cattle are hardy and long living.
4. They are also used for beef production.

Internet my friend

- Collect information about NBAGR
- Collect information about newly recognized cattle breeds
- How many cattle breeds are recognised now in India?



EXERCISES

Q.1 Fill in the blanks.

- The best breed of cattle in Indian subcontinent is
- The area of Sind called is the real breeding tract of Red Sindhi.
- is the cattle breed originated in South West region of Gujarat State.
- The Kankrej breed is famous for particular walking type of gait known as
- is the small sized exotic dairy breed of cattle .
- breed of cattle is typical for quick draft quality and spirited.
-, and are the three strains of deoni cattle.
- is an excellent exotic dairy breed
- breed of cattle is found in Konkan region of Maharashtra.
- is synonym of Sahiwal cattle.

Q.2. Identify the odd one out

- Dangi, Khillar, Gaolao, Deoni
- Holdeo, Jersey, HF, Brown Swiss
- Tharparkar, Sahiwal, Gir, Khillar
- Jerdeo, Karanswiss, Holdeo, Sahiwal
- Gir, Sahiwal, Red Sindhi, Red Kandhari

Q.3. Match the pairs

Group A		Group B	
1.	Milch Purpose	a.	305 days
2.	Dual Purpose	b.	Sahiwal
3.	Draft Purpose	c.	Jersey
4.	Exotic Breed	d.	Deoni
5.	Lactation Period	e.	Khillar
6.	Dry Period	f.	Holdeo
		g.	60 days
		h.	420 days

Q.4 Answer the following questions in brief.

- Name crossbreds of Maharashtra.
- Write colour strains of Deoni.
- Give origin of Hariana.
- Name milch breeds of cattle.
- Give name of exotic cattle famous for high fat per cent with yellow colour of milk.
- Write origin and habitat of Khillar.
- Write prominent characteristics of Red Kandhari.
- Give economic importance of Gaolao.
- Write origin and habitat of Dangi.
- Write origin and habitat of Jersey.

Q.5 Answer the following in detail.

- Describe origin, prominent characteristics and economic importance of Deoni cattle.
- Write in detail origin, prominent characteristics and economic importance of Sahiwal cattle.
- Describe in detail Holstein Friesian breed of cattle.