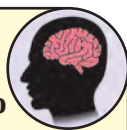


3. BUFFALO BREEDS

Can you recall ?

1. Different types of buffalo breeds in India.
2. Famous buffalo breed in India.
3. Black gold of Indian economy.



The buffaloes were domesticated about 5000 years ago from the wild buffaloes still found in India in the Assam forests (*Bubalus arni*). There are two types of buffaloes, namely, riverine and swamp. The riverine buffaloes (2n=50) have been primarily developed for milk and secondarily for meat and draft whereas the swamp buffaloes (2n=48) have been primarily developed for draft and secondarily for meat and milk. Water buffalo (*Bubalus bubalis*) is being raised as an economic animal in about 50 countries of the world. Thus buffalo species is spread in tropical as well as temperate regions of the world. In recent years, the buffalo

commonly known as an 'Asian animal' has attracted global attention. The buffalo is the dairy, draft and meat animal of Asia. The Indian sub-continent is the home tract of the world's best dairy buffaloes. Today the water buffalo (*Bubalus bubalis*) is recognized as the 'milking machine' of India. It accounts for nearly half of India's total milk production (49.2 percent).

3.1 CLASSIFICATION OF BREEDS

There are 16 recognized breeds of buffaloes in India. There are few well defined breeds with standard qualities and with specific physical characteristics that differentiate them unmistakably from other types as may be found in various states of the country. These are all milch breeds, but number of animals belonging to these breeds is in small fraction of the total buffalo population of the country. On the basis of regions the well defined buffalo breeds are as follows :

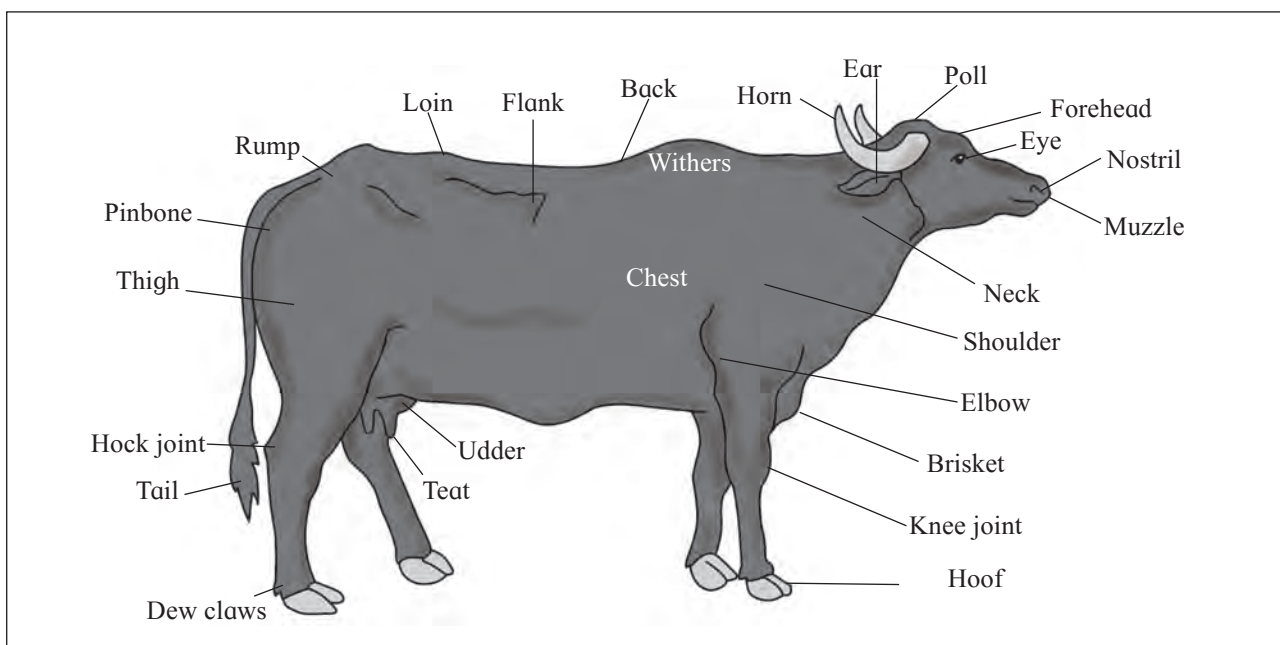


Fig. 3.1 External body parts of buffalo

Table 3.1 : Classification of buffalo breeds

North and North-Western	Central Indian	South Indian	Western Indian
1. Bhadawari	1. Chhattisgarhi	1. Bargur	1. Banni
2. Murrah	2. Kalahandi	2. Chilika	2. Jaffarabadi
3. Nili-Ravi	3. Luit (Swamp)	3. Toda	3. Mehsana
	4. Marathwadi		4. Surti
	5. Nagpuri		
	6. Pandharpuri		

Internet my friend

- Total number of recognized breeds in India.



Can you tell ?

- Buffalo breeds of Maharashtra
- Black Gold of Maharashtra



3.2 BUFFALO BREEDS

3.2.1 Murrah

Synonym : *Delhi*

Origin and habitat: The home tract of Murrah is Rohtak in Haryana state. Rohtak, Hissar and Gurgaon districts of Haryana and Delhi have a large population of Murrah animals. High yielding Murrah animals are also found in the adjoining areas of Uttar Pradesh and Punjab. It has now been spread in almost all the milk producing states.

Prominent characteristics

1. The colour is jet black and large in size with long and deep body.



Fig. 3.2 a Murrah : Male



Fig. 3.2 b Murrah : Female

2. The front portion of body in females is light and narrow, and the rear portion is heavy presenting a wedge shaped appearance. Females have short, fine and clear cut head.
3. Horns are short turning backward and upward and finally tightly curled inward in the spiral form.
4. Bulls are heavy and broad with prominent cushion of short and dense hair.
5. The forehead is broad and prominent.
6. The nostrils are wide apart. Eyes are bright, active and prominent in females but slightly shrunk in males.
7. Ears are short, thin and alert.

8. The udder is well developed, capacious with prominent milk veins and squarely placed large teats. Teats are long and placed uniformly wide apart. Rear teats are generally longer than fore teats.
9. The hocks are nearly straight in males but somewhat bent in females. Hips are broad.
10. The tail is generally long and flexible reaching up to the fetlocks. Tail switch is white.
11. Average body weight is 552 Kg.

Economic importance

1. The average age at first calving is 46 months.
2. Average lactational milk yield is 1914 kg.
3. Average milk fat per cent is 7.66.
4. The average inter calving period is 454 days.

Remember...

Murrah is among the elite dairy breeds of buffaloes and is used for grading up of local non-descript buffaloes.



3.2.2 Surti

Synonyms :Decani, Deshi, Gujarat, Nadiad and Talabda

Origin and habitat :The home tract is in the South-Western parts of Gujarat. Best animals are found in Anand, Nadiad, Khaira and Baroda districts covering a vast area between Mahai and Sabarmati rivers.

Prominent characteristics

1. Surti animals are of medium size with straight back and low legs. The buffaloes are brown (*bhurra*) or rarely black in appearance.
2. The hair in several specimens appears greyish brown.

3. A characteristic feature is the presence of two white collars (chevrons); one around jaw from ear to ear and the other on brisket. There may be a streak of white hair above the eyes. The region below the knees and hocks has a whitish or grey tuft of hair.

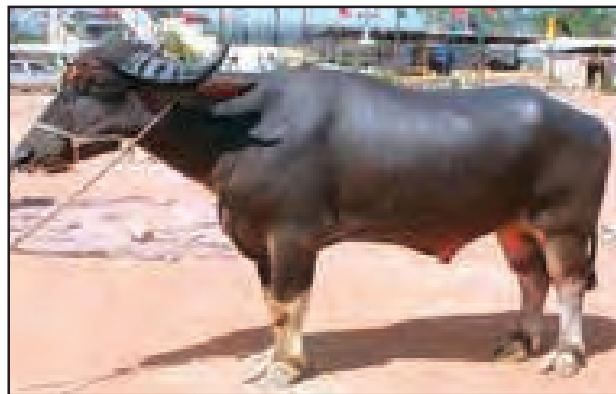


Fig. 3.3 a Surti : Male



Fig. 3.3 b Surti : Female

4. The horns are sickle shaped, curling downward and backward and then inward in terminal portion. The tip of the horn forms a characteristic hook.
5. Tail is fairly long, thin and flexible ending in a white tuft.
6. The hips of Surti females are broad and flat.
7. The udder is well developed; it is pinkish in appearance, finely shaped and squarely placed between the hind legs.
8. The average body weight is 462 Kg.

Economic importance

1. Age at first calving is 53 months.
2. Average lactational milk yield is 1547 kg.
3. The average milk fat is 8.10%.
4. The average inter calving period is 510 days.
5. Animals consume less feed.

Do you know ?

The Surti buffalo is a economic feeder and thrives well on both limited and without green and produces milk with higher fat and SNF content.



3.2.3 Mehsana

Origin and habitat : The home tract is in areas around Mehsana and Ahmedabad districts of Gujarat. The rural areas of Patan, Sidhpur, Kadi Radhanpur, Banaskantha and Sabarkantha have large herds of Mehsana buffaloes.

Prominent characteristics

1. Mehsana animals are intermediate between Murrah and Surti.



Fig. 3.4 a Mehsana : Male

2. The body colour is mostly black. A few animals are black-brown or brown.
3. The forehead is wide with slight depression in the middle, sloping towards root of horns.

4. The horns are generally sickle-shaped with the curve more upward than the Surti and less curved than in Murrah.
5. The Mehsana animals are longer than local Murrah with lighter limbs but slightly longer and heavier head.



Fig. 3.4 b Mehsana : Female

6. The muzzle is wide with widely open nostrils.
7. The eyes appear prominent, bulging from the sockets with folds of skin on upper eyelid.
8. The udder is attached high in the back and carried well. Milk veins are prominent.
9. The average body weight is 595 kg.

Remember...

- It is believed that Mehsana breed arose from interbreeding between Murrah and Surti breeds.
- Mehsana breed is reputed for regular breeding and persistent milking



Economic importance

1. Age at first calving is 42 months.
2. Average lactational milk yield is 1988 kg.
3. The average milk fat is 7.60 percent.
4. The average inter calving period is 490 days.

3.2.4 Jaffarabadi

Synonyms : *Jaffari, Gir, Bhavnagari*

Do you know ?

Jaffarabadi breed is the heaviest among buffalo breeds of India.



Origin and habitat : This breed is originated from Gir forests of Kathiawar. The breed is found mainly in Saurashtra region of Gujrat spread over Junagarh, Bhavnagar, Amreli and Rajkot districts. It derives its name from the town of Jaffarabad.

Prominent characteristics

1. The animals are characterized by relatively long body, a loose frame and have a large built.
2. The head and neck are massive and dewlap is prominent.



Fig. 3.5 a Jaffarabadi : Male



Fig. 3.5 b Jaffarabadi : Female

3. The bone of forehead widens and covers the eyes to give 'sleepy eye appearance' especially in males.
4. The horns are heavy and broad inclined to drop on each side of the neck and slightly adjacent close to tip. Horns form an incomplete curl which is not so tight like Murrah.
5. A typical Jaffarabadi specimen is black in colour, but animals of grey and copper are also available.
6. The average body weight is 545 kg.

Economic importance

1. Age at first calving is 65 months.
2. Average lactational milk yield is 2031 kg.
3. The average milk fat is 7 to 8.50%.
4. The average inter calving period is 509 days.

3.2.5 Nagpuri

Synonyms : *Purnathadi, Berari, Ellichpuri and Gaulani.*

Do you know ?

Nagpuri buffalo breed has four distinct strains, viz. Purnathadi (Akola district), Ellichpuri (Amravati District), Gaulani and Nagpuri (Nagpur District)



Origin and habitat : The home tract of Nagpuri breed lies in Vidarbha Region of Maharashtra extending from Nagpur to Western parts of Amravati district. Akola, Chandrapur, Bhandara, Buldhana, Wardha and Yavatmal district have sizeable population of Nagpuri buffaloes.

Prominent characteristics

1. Nagpuri buffaloes are of light built with a long narrow head and neck.
2. A characteristic features of Nagpuri buffalo is long flat curved horns which extend on the either side of neck reaching up to the shoulders



Fig. 3.6 a Nagpuri : Male



Fig. 3.6 b Nagpuri : Female

3. The face is long and thin, cone shaped with straight nasal bone.
4. The ears are medium in size with pointed tips.
5. The colour is usually black with white patches on face, legs and tips of the tail. Purnathadi strain is slightly brownish with a predominant white patch on forehead.
6. The limbs are somewhat long, light and slender. Tail reaches a little below hocks and has white switch.
7. The average body weight is 450 kg.

Economic importance

1. Age at first calving is 55 months.
2. Average lactational milk yield is 1036 kg.
3. The average milk fat is 7.90%.
4. The average inter calving period is 510 days.

Remember...



Nagpuri buffaloes are used for heavy draft purpose in paddy fields of Bhandara, Chandrapur and Gadchiroli districts.

3.1.6 Pandharpuri

Origin and habitat : Pandharpuri buffaloes are found in Solapur, Kolhapur, Satara and Sangli districts of Western Maharashtra.

Prominent characteristics

1. The animals are medium sized and having long and compact body.
2. The animals have long and narrow face with prominent nasal bone.
3. The neck is comparatively longer and thin.
4. The body colour varies from light black to dark black.
5. The horns are very long, sword shaped almost up to the back and twisted outwards.
7. The udder is medium sized, compact and somewhat hidden in between hind quarters with well placed teats.
8. The average body weight is 420 kg.

Economic importance

1. Age at first calving is 43 months.
2. Average lactational milk yield is 1475 kg.
3. The average milk fat is 7.80%.
4. The average inter calving period is 452 days.



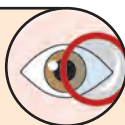
Fig. 3.7 a Pandharpuri : Male



Fig. 3.7 b Pandharpuri : Female

Observe that...

- The Pandharpuri buffaloes are mild in temperament and hardy.
- The Pandharpuri buffaloes are consumer friendly by way of allowing door to door milking for milk quality satisfaction of consumers.



3.1.7 Marathwadi

Origin and habitat : Marathwadi buffalo breed is located in the districts of Beed, Parbhani, Jalna and parts of Nanded and Latur districts of Marathwada region.

Prominent characteristics

1. The animal is light medium sized with compact stature.

2. Skin and coat colour varies from greyish black to jet black. White markings on the face, legs and switch are also sometimes found (*Chandri*).
3. The horns are medium long, parallel to neck, reaching up to the shoulder but never beyond shoulder blade and usually not flat.
4. The forehead is moderately broad and eyes are generally red tinged.
5. The ears are drooping. Neck is longer with heavy brisket.
6. Limbs are long and light. Tail is moderately long running below the hock with white switch.
7. The average body weight is 350 kg.



Fig. 3.8 a Marathwadi : Male



Fig. 3.8 b Marathwadi: Female

Economic importance

1. Age at first calving is 52 months.
2. Average lactational milk yield is 1100 kg.
3. The average milk fat is 7.60 percent.
4. The average inter calving period is 530 days.

Do you know !

- Marathwadi buffaloes are of short stature and can tolerate drought.
- Males are used for draft and transportation in hilly tract.



Observe and identify following breed.



EXERCISES

Q.1 Fill in the blanks.

1. is the heaviest breed of buffalo.
2. The home tract ofbuffalo breed is Haryana state of India.
3. buffalo breed is developed through the cross between Murrah and Surti.
4. In the Vidarbha region breed is used for heavy draft purpose in paddy fields.
5. The horns ofbuffalo breed are parallel to neck and reaching upto the shoulder point.

Q.2 True or False.

1. Marathwadi male used for transportation in hilly region

2. In Bhandara, Chandrapur and Gadchiroli districts, Nagpuri buffaloes are used in paddy fields
3. Mehsana breed is developed from interbreeding between Murrah and Surti breed
4. Delhi buffalo is also known as Murrah buffalo

Q.3 Make the Pairs.

Group A		Group B	
1.	Mehsana	a)	Deccani
2.	Murrah	b)	Crossbred buffalo
3.	Surti	c)	Tightly curled horns
4.	Jaffarabadi	d)	Ellichpuri
5.	Nagpuri	e)	Bhavnagari
		f)	Marathwada
		g)	Sword shaped horns

Q.4 Answer the following questions in brief.

1. Mention the shape of horns in Nagpuri buffalo.
2. Name the buffalo breeds of Maharashtra.
3. Give age at first calving in Murrah breed.
4. Write the lactational milk yield of Mehsana buffaloes.
5. Mention the shape of horn of Pandharpuri buffaloes.
6. Write origin and habitat of Mehsana buffaloes.
7. Give economic importance of Marathwadi buffaloes.
8. Write the typical characteristics of Nagpuri.
9. Give prominent characteristics of Surti.
10. Write origin and habitat of Jaffarabadi.

Q.5 Complete the following table.

North and North-Western	Central Indian	South Indian	Western Indian
	Nagpuri		
Murrah			Mehsana
		Toda	

Q.6 Answer the following in detail.

1. Explain prominent characteristics and economic importance of Jaffarabadi buffaloes.
2. Enlist breeds of buffalo. Explain prominent characteristics and economic importance of Murrah buffaloes.
3. Describe origin, prominent characteristics and economic importance of Pandharpuri buffaloes.