

Characteristic features of registered Indigenous Buffalo Breeds of India: A Review

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ABSTRACT

The buffalo species originated in India. The present day domesticated buffaloes are the descendants of Bos arni found in wild state even today in north-eastern parts of India specially Assam and the surrounding areas. The buffaloes are normally classified into river and swamp types though both are called Bubalus bubalis. Most of the animals in India are river type though swamp type are also found in certain parts of the country specially in eastern parts of India. India is considered as the home tract of some of the best buffalo breeds. Because of preference of buffaloes for milk, many she buffaloes from the breeding tract are moved to the thickly populated urban and industrial centre for meeting the milk requirements of this population. Here generally they are slaughtered after completion of one or two lactation. Their progenies allowed to die due to neglect and thus no replacement of superior germplasm is possible. Indian buffaloes are an important source of milk supply today and yield nearly three times as much milk as cows. More than half of the total milk produced (55%) in the country was contributed by the 47.22 million milch buffaloes, whereas the 57.0 million cows contribute only 45% of the total milk yield. Indian Buffaloes are water buffaloes. There are about 10 indigenous standard breeds of buffaloes, which are well known for their milking qualities.

Key words: Indigenous Buffalo, Biodiversity, Characteristics features, Conservation.

INTRODUCTION

The domestic or water buffalo (*Bubalus bubalis*) belong to the family *bovidae*, sub-family *bovinae*, genus *bubalis* and species *arni* or wild Indian buffalo. Buffalo are believed to have been domesticated around

5000 years ago in the Indus Valley. The water buffalo can mainly be classified as River (Chromosome no., 2n=50) and swamp type (Chromosome no., 2n=48). The domestication of swamp buffalo took place independently in China about 1000 years later.

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The movement of buffalo to other countries both east and westwards has occurred from these two countries. Some of the well-known dairy breeds of buffalo found in India and Pakistan are Murrah, Nili-Ravi, Kundi, Surti, Jaffarabadi, Bhadawari, Mehsana, Godawari and Pandharpuri. The swamp buffalo are concentrated mainly in south east China, Myanmar, Malaysia, Laos, Cambodia, Thailand, Indonesia, Philippine, and Vietnam. The skin colour is gray, dark gray to slate blue. White animals occur frequently. Animals have swept back horns and are similar in appearance across the countries except the size. The horns grow laterally and horizontally in young animals and curve round in a semi circle as the animals gets older. Animals are massively built, heavy bodied with large belly. The forehead is flat; orbits are prominent with a short face and wide muzzle. They weight from 300 to 400 kg when fully grown. Swamp buffalo are primarily used as work animal in paddy cultivation, for pulling carts and hauling timber in jungles. Milk yield is 1-2 kg per day.

BREEDS: On the basis of regions the well defined buffalo breeds are:

(A) MURRAH GROUP:

1. Murrah:



Most important breed of buffaloes whose home is Rohtak, Hisar and Sind of Haryana, Nabha and Patiala districts of Punjab and southern parts of Delhi state. Otherwise called as Delhi, Kundi and Kali. The colour is usually jet black with white markings on tail and face and extremities sometimes found. Tightly curved horn is an important character of this breed. Most efficient milk and butter fat producers in India. Butter fat content is 7.83%. Average lactation yield is varying from 1500 to 2500 kgs per lactation. Also used for the grading up of inferior local buffaloes. The

intercalving period is 450 to 500 days. The age at first calving is 45 to 50 months in villages but in good herds it is 36 to 40 months.

2. Nili Ravi:



Originated around the river Ravi. This breed is found in Sutlej valley in Ferozpur district of Punjab and in the Sahiwal (Pakistan) of undivided India. The peculiarity of the breed is the wall eyes. Head is small, elongated, bulging at top and depressed between eyes. Horns are very small and tightly coiled. Bullocks are good for heavy trotting work. The milk yield is 1500-1850 kgs per lactation. The intercalving period is 500 to 550 days. The age at first calving is 45 to 50 months. The bullocks are good for heavy trotting work.

3. Kundi:



Kundhi Female

Kundhi Male

The word kundi means fish-hook in sindhi language. The Kundi breed is of the milk type. It is found in Dadu, Hyderabad, Karachi, Larkana, Nawabshah, Sanghar and Thatta districts in Sind Province. The color is solid black. The average weight at maturity for the male is 600 kg and 375 kg for the female. They are massive animals. The horns are small and spirally twisted and hence the name "Kundi". The fore head is slightly prominent, the face hollow and eyes are small. Mammary gland are capacious with prominent milk vein; teats are squarely placed. The udder is large and strong and the longevity of production is 'good'. Kundi buffaloes are smaller than Nili-Ravi with adult weight of 320 to 450 kg.

4. Godavari:

Godavari is a result of crossing of native buffaloes with Murrah bulls. The home tract is Godavari and Krishna deltaic area. The animals are of medium stature with compact body. The colour is predominantly black with a sparse coat of coarse brown hair. Godavari buffaloes are reputed for high fat with daily average milk yield of 5-8 litres and lactation yield of 1200-1500 litres. The animals breed regularly and have a short calving interval compared to Murrah. They are hardy and possess good resistance against majority of prevailing diseases.

(B) GUJARAT GROUP:**1. Surti:**

Also known as Deccani, Gujarati, Talabda, Charator and Nadiadi. The breeding tract of this breed is Kaira and Baroda district of Gujarat. Coat colour varies from rusty brown to silver-grey. The horns are sickle shaped, moderately long and flat. The peculiarity of the breed is two white collars, one round the jaw and the other at the brisket region. The milk yield ranges from 1000 to 1300 kgs per lactation. The peculiarity of this breed is very high fat percentage in milk (8-12 per cent). The bullocks are good for light work.

2. Jaffrabadi:

The breeding tract of this breed is Gir forests, Kutch and Jamnagar districts of Gujarat. This is the heaviest Indian breed of buffalo. The horns are heavy, inclined to droop at each side of the neck and then turning up at point (drooping horns). The udder is well developed with funnel shaped teats. The average milk yield is 1000 to 1200 kgs per lactation. The bullocks are heavy and used for ploughing and carting. These animals are mostly maintained by traditional breeders called Maldharis, who are nomads. The bullocks are heavy and are used for ploughing and carting.

3. Mehsana:

Mehsana is a dairy breed of buffalo found in Mehsana, Sabarkanda and Banaskanta districts in Gujarat and adjoining Maharashtra state. The breed is evolved out of crossbreeding between the Surti and the Murrah. Body is longer than Murrah but limbs are lighter. The horns are less curved than in Murrah and are irregular. Bullocks are good for heavy work. The milk yield is 1200-1500 kgs per lactation. The breed is supposed to have good persistency. The intercalving period ranges between 450 to 550 days. The bullocks are good for heavy work but rather slow.

4. Banni:

Banni Buffalo breed was recognized as 11th buffalo breed of India by Breed Registration Committee, ICAR, New Delhi. The breed is originated from the Banni area of Kachchh, which is a part of Kachchh district of Gujarat. Purebred animals prevalent in Bhuj, Nakhatrana, Anjar, Bhaahau, Lakhpatt, Rapar and Khavda talukas, are heavily size with typical double and vertical coiling of the horn. The “*sui-gensis*” germplasm of Kachchh i.e. “*Banni buffaloes*” are maintained by Maldharis under typically and locally adapted extensive production system in its breeding tract. The body coat colour is black (90.09%) and copper (9.90%), whereas muzzle and eyelids are either black or brown. Horns orientation is vertical, inverted double coiling in 31.20% and vertical, inverted single coiling in 68.80% animals. Eyes are prominent black and bright. The colour pattern of the switch of tail comprises (67.35%) white and (32.65%) black and length of the tail is 88.39±0.48cm. Body is Medium to large, compact and generally covered with hairs. Dewlap is absent and naval flap is medium. Head is Wide with slight depression in the middle and no slope towards base of the horns. Face is Comparatively elongated and straight with wide muzzle. Neck is Medium and thin without skin folds over the region. Ear orientation is horizontal in majority of animals and length of ear is 29.30±0.08cm. Udder is Well developed, round in shape and squarely placed. The hind and fore quarters are uniformly well developed, whereas typically whole udder looks like four equal divisions with teats well attached to each quarter. Teats are Majority of animals have conical teats with round and pointed tips.

(C) UTTAR PRADESH GROUP:

1. Bhadawari:



Home tract of this breed is Agra and Etawah district of Uttar Pradesh and Gwalior district

of Madhya Pradesh. Medium sized buffalo. The body is usually light or copper coloured is a peculiarity of this breed. Eye lids are generally copper or light brown colour. Two white lines ‘Chevron’ are present at the lower side of the neck similar to that of Surti buffaloes. The average milk yield is 800 to 1000 kgs per lactation. The bullocks are good draught animal with high heat tolerance. The fat content of milk varies from 6 to 12.5 per cent. This breed is an efficient converter of coarse feed into butterfat and is known for its high butter fat content.

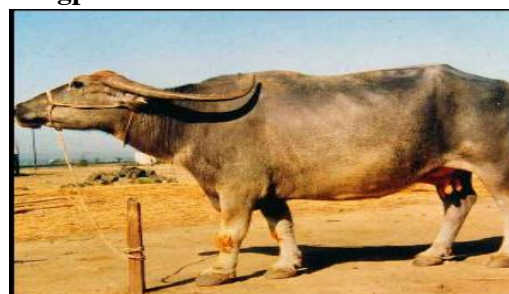
2. Tarai:



The breed gets the name from the Tarai area of U.P., Where it is mostly found between Tanakpur and Ramnagar. The breed is native of hilly area. They are Frequently crossed with Murrah bulls. It has a moderate body, slightly convex head with prominent nasal bones. Horns are long and flat with coils, bending backwards and upwards and upwards having pointed tips. The eyes are rather small but ears are long and coarse. Legs are short but strong. The tail is long, reaching below the hocks. The colour of the skin varies from black to brown. The switch of the tail is white. The breed is poor regarding milk production, which may be as low as 2-3 kg daily. Males are efficient draught animals used for agricultural operations as powers including transport.

(D) CENTRAL INDIA GROUP:

1. Nagpuri:



This breed is also called as Elitchpuri or Barari. The breeding tract of this breed is Nagpur, Akola and Amravati districts of Maharashtra. These are black coloured animal with white patches on face, legs and tail. The horns are long, flat and curved, bending backward on each side of the back. (Swaord shaped horns).The bullocks can be used for heavy work. The milk yield ranges from 700 to 1200 kgs per lactation. The age at first calving is 45 to 50 months and intercalving period is 450 to 550 days. The bullocks are good for heavy trotting work but slow in movement.

2. Pandharpuri:



The name Pandharpuri is from the town Pandharpur in Solapur district which is the home range of these buffalo. They are found in Solapur, Kolhapur and Sangli districts of Maharashtra. The majority of the breed are black with white markings found on the forehead, legs and switch of tail. It is medium sized with average body weight of 450-470 kg. Animal having long narrow face, very prominent and straight nasal bone, comparatively narrow frontal bone and long compact body. The udder is compact, trough shaped with cylindrical teats. The head is long, narrow with prominent nasal bone and the horizontal ears. Typical characteristic of this breed is its horns which are very long, extending beyond shoulder blade, sometimes up to pin bones, curved backward, upward and usually twisted outwards, which measure from 45-50 cm upto 1-1.5 m of length. The breed is famous for its high reproductive ability, producing a calf every 12 months. Under average management conditions and hot -dry climate these buffaloes yield 6-7 liters of milk per day; however under good management

they are reported to yield up to 15 lit of milk per day.

3. Manda:



The animals are bred in the hills above Parlakimedi and Mandasa on the borders of Orissa and Andhra Pradesh. Basically the breed is reared in areas of thick forest usually on natural herbage and brought down to the plains for sale. The general colour is brown or grey with yellowish tufts of hair on the knees and fetlocks, and the switch is yellowish white. The breed is a medium sized animal. The eyes are sharp with a broad red margin around the lids. The horns are broad and semi-circular extending backward and well developed chest. Milk yield is satisfactory. Males are hardly and like a bullock can work in the hot sun. It can draw a load of about a ton but at a slow pace.

3. Jerangi:



This breed of buffalo is widely distributed in Jerangi hills of Orissa and Northern parts of Visakhapatnam and west of Ganjam in Andhra Pradesh. One of the dwarf breeds of buffalo and its height does not exceed four feet. Horns are conical and small and run backward, body colour is black. Not that much good in milk production but are useful animals for ploughing in water-logged paddy fields.

5. Kalahandi / Peddakimedi:

Kalahandi buffaloes are dual type; used for milk and draught purpose in Kalahandi and Rayagada districts of Odisha. Animals are medium sized; having long, strong, half circled horns with broad base; and are excellent in heat and drought tolerance. The colour is grey or ash grey with white switch of medium length tail. The fore head is slightly protuberant. Due to light colour it tolerates sun heat better than dark colour buffaloes. Milk yield is quite satisfactory.

6. Sambalpuri / Kimedi / Gowdoo:

The home tract of this breed is controversial. Originally it was known to be habitat of Sambalpur area of Orissa, later on it has been suggested that the main habitat of this breed is around Bilaspur district of M.P. wherefrom calves are brought by “gowdoo”(Herdman) to Sambalpur area. Animals are large and powerful having long, narrow barrel and prominent fore-head. Body and coat is generally black but it varies to brown and ash grey. Males are very active and good for drought purposes which are affected by high atmosphere temperature. Females breed regularly and produce milk satisfactorily. Average milk yield varies from 2270 to 2720

kg in 340 to 370 days with a daily average of over 7 kg in good milkers.

(E) SOUTH INDIA GROUP:**1. Toda:**

This buffalo is named after an ancient tribe, Toda of Nilgiris Hills of south India and it is a semi-wild breed. The predominate coat colours are fawn and ash-grey. Thick hair coat is found all over the body. They are gregarious in nature. The body is long and deep and the chest is deep. The legs are short and strong. The horns are set wide apart curving inward, outward and forward forming a characteristic crescent shape. Toda buffaloes are good milkers yielding from 4.4 to 8.8 litres of very rich milk. The average milk yield is 500 kg per lactation with high fat content of 8%.

2. South Kanara:

South Kanara buffaloes are medium built animals distributed in South Kanara region around Mangalore and Udupi on the west coast of India. The presence of buffaloes in its original habitat has decreased substantially while more such animals are found in the adjoining Shimoga districts. The body coat colour varies from brown to silver grey and black. Horns are flat, corrugated and curved projecting backward, sideward and upward at the neck region. Tail is fairly long, thin and flexible ending in a black switch. South kanara buffaloes are well built and medium sized

animals. Head is fairly long with broad forehead. Neck is long with moderately thick dewlap. Ears are moderately long and erect. Udder is moderately developed. Teats are medium sized and squarely placed behind the hind legs. South kanara buffaloes are moderate milk yielders and normally give milk ranging from 2 to 7 liters per day. There are animals in villages with a peak yield of more than 10 litres per day. The length of lactation varied between 210 to more than 360 days. The lactation milk yield varied from 420 to 2520 litres. The age at first calving and calving interval varied between 30 to 60 months and 12 to 36 months respectively.

SUMMARY / CONCLUSION

India has a rich diversity of buffalo breeds which are not only important to the people of India, but have contributed significantly to livestock programmes in many other tropical and sub-tropical climatic areas of the world. Most important is the fact that our domestic animal genetic resources (AGR) are under threat. This paper highlights the main AGR of India; the threat to biodiversity and the efforts made for conserving and improving indigenous livestock breeds.

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