

Red hill cattle is characterized as 'Badri cow' based on physical characters and body measurements

RK Banga, Prabhakar Kumar, LK Singhal, Amit Sharma and RS Chauhan

*Centre for Animal Disease Research and Diagnosis
Indian Veterinary Research Institute, Izatnagar-243 122 (UP)*

INTRODUCTION

In Uttaranchal hills, a red colored cow is predominantly found which, is a main source of milk to the human population residing there. This cow, as earlier mentioned, has red coat colour and is of smaller size as compared to the other breeds of indigenous cattle. This cow is a typical of the Indian cow as it is docile and is considered that its milk is easy to digest in addition to various medicinal values. The urine and dung of this cattle have also been used for treatment of various disorders of human beings. In hill areas, this cow is kept as a grazing animal and is seldom stall fed, this further adds to the medicinal values to its products.

In Uttaranchal, there are 21.2 lac cattle population as per the 1993 census; of which 10.8 lacs are females and 10.3 lacs are males. The exotic and crossbred animals are not much in Uttaranchal in comparison to the non-descript indigenous animals. The crossbred animals are only 1.23 lacs; of which 0.44 lacs are males and 0.78 lacs are females. The total production of milk in Uttaranchal is 5.01 lac tones; of which 47% comes from cows and rest is contributed by goats, buffaloes, sheep etc. The number of cattle per thousand of population is 775 in Uttaranchal and per capita milk availability is 228 grams. The state of Uttaranchal has been declared as organic farming state. Except in few places, there are very less use of chemicals/ fertilizers/pesticides in agriculture, animal husbandry and public health operations. The indigenous hill cattle is also a God gifted animal to the people of Uttaranchal which has very high potential for producing organic food and thus may play a very significant role in development of Uttaranchal as a real organic state. The indigenous red cows of hill areas are at present considered as "non-descript animal" as there is a lack of scientific study on this cattle. Keeping in view the importance of this cow, it was planned to characterize this cow as a "Breed of Uttaranchal" based on various physical characteristics and body measurements.

Materials and Methods

To evaluate and characterize physical parameters of the cow, 3 age groups of the cow were selected as, calves, heifers and adults. Body measurements were taken using a standard scale of metric system of measurements. The physical parameters measured are as under and some of them have been shown in figure 1.

1. Heart girth
2. Paunch girth
3. Height at withers
4. Body Length
5. Inner circle of horn
6. Outer circle of horn
7. Length of foreleg
8. Length of hindleg
9. Thickness of canon
10. Thickness of shannon
11. Length of tail
12. Distance between hook bones
13. Length of nose ridge
14. Width of poll
15. Neck Length
16. Forehead length
17. Rump length
18. Distance between pin bones

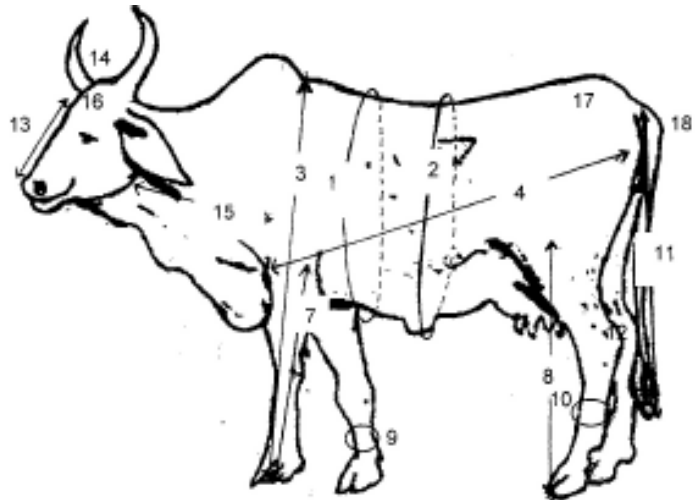


Fig. 1 Body measurements of Cow

The number of animals used for these measurements were as, calves: 9, heifers: 19, adults: 19. All the animals used for this study were in their natural domestic habitat and no animal was for the experiment purpose. Mean values were calculated for all the parameters in 3 groups, separately, and a breed chart based on the physical characteristics was prepared.

Results and Discussion

These cows are of small size with an average weight of 200-250 kg. The neck is wide and small and these cows are having very bright and alert eyes. The ears are

www.IndianJournals.com
Not for Commercial Use
Downloaded From IP - 216.73.216.137 on dated 04-Apr-2026

always erected and show the alertness of the animal. The udder is less developed with an average of 1.0 kg milk production per cow per day. The legs are small and straight with hard foot pad and hooves. This enables these cows to walk easily on heights and valleys in the hilly areas.

In the calf hood of the hill cattle the maximum heart girth observed was 72 cm while minimum was 55 cm with a mean value of 62.16 cm. Similarly, mean value for length of body, foreleg and hindleg were as 47.55, 42.38 and 48.38 cm, respectively. In the heifers of the hill cattle the mean heart girth, length of body, foreleg and hindleg were 115.15, 59.36 and 69.73 cm, respectively. The distance between the pin bones increased to 11.89 cm in case of the heifers of the hill cattle. The body measurements further increased in the adult hill cattle. The mean body length, foreleg length and hindleg length in adult hill cattle were 137.63, 65.07 and 71.36 cm, respectively. The distance between two pin bones was found to be 15.85cm in adult hill cattle (Table 1).

For the future reference to the physical parameters of the hill cattle a breed chart for the hill cattle was prepared using the mean values of all the parameters (Table 1)

This study will help in the initiation of breed characterization of the valuable hill cattle which is named as 'Badri Cow', which will further trigger the research on medicinal



Red Hill Cattle (Badri cow): An important breed of cattle in Uttarakhand

Table 1. Breed chart for the hill cattle breed based on the physical appearance and measurements of the body.

S. No.	Body parameter	Calves	Heifer	Adult
1.	Heart girth	62.16±3.2	115.15±6.4	137.63±7.1
2.	Paunch girth	69.00±2.9	138.31±5.7	170.84±6.5
3.	Height at withers	59.66±2.5	89.71±3.1	100.76±5.8
4.	Body Length	47.55±1.5	84.65±2.6	103.97±6.3
5.	Inner circle of horn	-	9.09±1.2	9.77±2.3
6.	Outer circle of horn	-	11.54±2.6	11.63±3.2
7.	Length of foreleg	42.38±2.7	59.36±3.2	65.07±4.3
8.	Length of hindleg	48.38±2.6	69.73±3.9	71.36±5.9
9.	Thickness of canon	8.33±0.9	11.52±1.6	81.02±2.4
10.	Thickness of shannon	9.50±1.3	13.25±2.2	15.73±2.8
11.	Length of tail	35.22±4.5	58.84±5.2	63.96±5.9
12.	Distance between hook bones	11.83±2.6	25.21±2.9	39.27±3.3
13.	Length of nose ridge	21.16±2.4	32.73±3.1	38.05±3.4
14.	Width of poll	7.16±0.9	10.60±1.4	12.18±1.7
15.	Neck Length	21.05±2.1	32.23±2.7	43.97±2.9
16.	Forehead length	10.33±1.5	13.26±2.4	15.78±3.1
17.	Rump length	13.55±2.6	19.81±3.4	23.50±3.8
18.	Distance between pin bones	6.00±1.9	11.89±2.4	15.85±2.8

and other values of the products of this cow. It is concluded that the indigenous cattle of hills is a useful animal, which should be characterized further with more database on different parameters. It should be upgraded through selection to increase its production and simultaneously with no effect on qualities of their products.

References

Balakhara JM and Chittoria NK. 2003. *Uttaranchal: An Informative Manual*. H.G. Pulbicaiton, New Delhi.

Chauhan RS and Prasad RB. 2004. *Hill cattle and their importance in Uttaranchal*. Presented in National Symposium on "Conservation and Propagation of Indigenous Breeds of Cattle & Buffaloes" held at Pantnagar (Uttaranchal) on February 26-28, 2004. pp. 24-26

Chauhan RS and Sharma RJ. 2002. *Usefulness of Indigenous cows and their comparison with crossbred and exotic cows*. *Pashupalan*. 2002: 31-33.

Chauhan RS. 2003. *Enhancement of Immunity due to Panchgavya*. In: *Prakrati-2003*. Indian Agricultural Research Institute, Pusa, New Delhi, October 11-13, 2003.

Chauhan RS. 2003. *Immunomodulation: Pesticides and Panchgavya*. In: *National Symposium on "Panchgavya Ayurveda and Agricultural System"*. National Environmental Engineering Research Institute, Nagpur, April 28-29, 2003.

Mishra RC. 2001. *Uttaranchal Mein Pashupalan Avam Dairy Vikas*. Bharat Book Centre, Lucknow.