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Short Communication

Morphological Characteristics of Indigenous Goats of Bundelkhand Region of Uttar Pradesh

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INTRODUCTION

Goats contribute greatly to the agrarian economy especially in areas where crop and dairy farming are not economical and play an important role in the livelihood of a large proportion of small and marginal farmers and landless labourers. According to 20th livestock census (2019) Govt. of India, the total goat population in the country is estimated to be 148.8 million. Uttar Pradesh possesses 14.48 million goats, which is 9.73per cent of the total goat population in the country. Characterization of livestock breeds is the first approach to a sustainable use of its animal genetic resources (Lanari *et al*, 2003). The first step of the characterization of local genetic resources is based on the knowledge of variation in the morphological traits (Delgado, 2001). It is very important that the present genetic resources be documented for phenotypic variation, social importance and unique genetic characteristics for effective management and conservation of livestock resources (Duchev and Groeneveld, 2006). The biometric measurements provide important evidences for the growth of the breed and the properties that change with environmental effects and feeding factors. Singh and Sharma (2019) concluded that feeding of green fodder after weaning at 60d of age to goat kids improved body weights and meat value for commercial purpose.

Indigenous goats of Bundelkhand region are closely related to Beetal goat. The present investigation was undertaken to study the morpho-metric measurement and management practices of Bundelkhand goats in Lalitpur district of Uttar Pradesh.

MATERIALS AND METHODS

Data on 167 adult indigenous goat of Bundelkhand belonging to 5 villages of Lalitpur district were utilized for the present study. Seven different body measurement and body weight of the goat were recorded. The body measurements recorded included body length (BL), height at withers (HW), chest girth (CG), paunch girth (PG), ear length (EL), ear width (EW), tail length (TL), and body weight (BW). The body measurements were taken with a standard measuring tape of 1 mm accuracy after the animals were allowed to stand squarely on an even ground. The body weight was recorded with the help of 100 kg weighing balance with 100 g accuracy. All the observations were taken in the morning before grazing or being allowed feed or water to the animals. The reproductive parameters *viz.,* body weight at sexual maturity (BWM), age at first conception (AFC), age at first kidding (AFK), kidding interval (KI), gestation length (GL), kidding pattern were recorded. Information on management practices of goats were recorded from the goat owners through observation and questionnaire. All animals were managed under a completely grazing management system and some leaves of tree and shrubs available in the areas. Animals were grazed 6-8 hr in summer and 5-6 hr in winter season. Data recorded were compiled and analyzed using appropriate statistical tool.

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Table 1. Means ± S.E. of morpho -metric measurements (cm) and body weight (kg) of adult Bundelkhand goats.

Sr. No.	Trait	Mean ± S.E.	
		Female (N =106)	Male (N = 61)
1	Body length	71.23 ± 0.42	72.06 ± 0.46
2	Height at withers	73.12 ± 0.48	73.62 ± 0.58
3	Chest girth	73.77 ± 0.38	81.57 ± 0.49
4	Paunch girth	82.04 ± 0.56	78.34 ± 0.72
5	Ear length	21.03 ± 0.21	18.82 ± 0.26
6	Ear width	6.71 ± 0.15	6.33 ± 0.18
7	Tail length	15.32 ± 0.24	13.78 ± 0.29
11	Body weight (kg)	34.29 ± 0.47	43.04 ± 0.66

Table 2. Means ± S.E. of Reproductive parameters of Bundelkhand goats

Sr. No.	Trait	Mean ± S.E.
1	Body weight at sexual maturity (month)	22.35 ± 2.08
3	Age at first kidding (days)	538.29 ± 4.48
4	Kidding interval (days)	358.72 ± 3.86
5	Gestation length (days)	152.32 ± 2.33
5.	Litter size	1.64

RESULTS AND DISCUSION

Morpho-metric measurements and body weight

The body measurements indicate the skeletal growth of the animals. Body length and height at withers are the measures of bone growth while chest girth is a measure of development of muscles, bones and fat and it had close relationship with the live weight. The mean ± S.E. of morpho-metric measurements and body weight for various traits under the study have been presented in table 1. The mean ± S.E. of body length , height at withers, chest girth, paunch girth, ear length, ear width, tail length and body weight were estimated to be 71.23 ± 0.42, 73.12 ± 0.48, 73.77 ± 0.38, 82.04 ± 0.56, 21.03 ± 0.21, 6.71 ± 0.15, 15.32 ± 0.24 and 34.29 ± 0.47 kg, respectively for females. The corresponding values for male were found to be 72.06 ± 0.46, 73.62 ± 0.58, 81.57 ± 0.49, 78.34 ± 0.72, 18.82 ± 0.26, 6.33 ± 0.18 and 13.78 ± 0.29 and 43.04 ± 0.66 kg, respectively. Almost similar observations for chest girth, ear length, ear width and tail length was reported by Rawat and Gupta (2016) in Bundelkhand goats. However, lower body length and body weight than the present study were observed by Rawat and Gupta (2016) for the same breed. Almost similar observations were also reported by Ahmad and Singh (2016) in Beetal goat under field condition. The result of body weight was close agreement with those reported by Ahmad *et al* (2009) in Beetal goats under field condition. However, lower body weight than the present study was reported by Mishra and Khan (1985).

Reproductive performance of Bundelkhand goats

Reproductive performance of does is of immense importance as contributing factor towards increased meat production and in finding out more prolific animals. This is the main factor affecting productivity of goats. Mean ± S.E. of body weight at sexual maturity, age at first kidding, kidding interval

and gestation length were observed as 22.35 ± 2.08 kg,, 538.29 ± 4.38, 358.72 ± 3.86 and 152.32 ± 2.33 days, respectively (Table 2). The letter size in Bundelkhand goats were found as 1.64. The findings of present study coincide with the observation of Rawat and Gupta (2016) in Bundelkhand goats. However, higher body weight at sexual maturity and kidding interval were reported by Ahmad and Singh (2016) in Beetal goats.

Management practices

Management practices play an important role in production potential of the animals. The Beetal goats were managed by the farmers on grazing system for 5-6 hr in winter and 6-8 hr in summer seasons on natural grasses, crops residues and shrubs available in the area. Flock size of the breed ranged from 8-54. Kuchcha goat houses made from wooden or bamboo materials were provided to the animals. During the study it was found that 42per cent farmers had separate goat house whereas 5842 per cent housed the goat as part of their own house. Farmers selected their own breeding buck from the flock on the basis of growth performance. Most of the farmers (94%) were unaware about PPR and Enterotoxaemia diseases in small ruminants. Common diseases observed among kids were pneumonia, pneumoenteritis, enterotoxaemia and anaemia.

CONCLUSION

The results of the present findings revealed that growth performances and reproductive performance of the breed is high. Effort should be made for its characterization genetic improvement in the farmers flock. Incentives should be provided to encourage the farmers. Scientific training on goat husbandry should be organized through state husbandry department and KVKs.

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