

Morphometric measurement and management of Beetal goats in Ambala district of Haryana

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ABSTRACT

Data on 153 adult Beetal goats belonging to 6 villages of 4 blocks of Ambala district were utilized for the present study. The mean \pm S.E. of body length, height at withers, chest girth, paunch girth, ear length, ear width, tail length, udder circumference, length of teat and body weight were estimated to be 71.43 ± 0.36 , 74.29 ± 0.38 , 78.35 ± 0.53 , 87.14 ± 0.64 , 22.18 ± 0.38 , 10.32 ± 0.14 , 19.22 ± 0.21 , 28.84 ± 0.22 , 11.63 ± 0.34 cm and 44.06 ± 0.44 kg respectively in adult females. Average of body weight at sexual maturity, age at first conception, age at first kidding, kidding interval and gestation length were observed as 26.85 ± 2.11 kg, 372.29 ± 4.48 , 516.33 ± 3.19 , 348.72 ± 4.41 and 147.52 ± 2.64 days, respectively. Beetal goats were raised under grazing system of management and some prophylactic treatments of the goats were practiced by the farmers in Ambala district.

Keywords: Growth performance, Beetal goats, management practice

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INTRODUCTION

Goat has been an integral component of farming system and support a large segment of rural population in Ambala district of Haryana. The Beetal goat, locally known as Amritsari offers a high potential for meat and milk production. The breeding tract of the breed is Gurdaspur, Amritsar, Taran Taaran and Ferozpur districts of Punjab. This breed is also reared by the farmers of Haryana state. The Beetal is usually black, red and black/red with white patches on the body of variable size. Beetal is a good dairy breed, second to Jamnapari and more prolific and easily adaptable to different agro-ecological conditions of India. It is famous for its dairy characteristics as well as mutton production. Its males are especially preferred for sacrificial purposes. The efficiency of Beetal goats for mutton production can be increased by adopting various methods like increasing the reproduction rate, exploiting the potential of breeds with superior genetic makeup. The present study was carried out to investigate the growth performance and management practices of Beetal goats in Ambala district of Haryana.

MATERIALS AND METHODS

Data on 153 adult Beetal goats belonging to 6 villages of 4 blocks of Ambala district were utilized for the present study. Nine 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), udder circumference (UC), length of teat (LT) and body weight (BW). The body measurements were taken for various age groups 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 125 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 collected from the goat owners through observation and questionnaire. All animals were maintained under a semi extensive management system. Animals were grazed 6-7 hrs in the day time. Data recorded were compiled and analyzed as per Snedecor and Cochran (1994).

RESULTS AND DISCUSSION

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 \pm S.E. of morpho-metric measurements and body weight for various traits under the study have been presented in table 1. The mean \pm S.E. of body length, height at withers, chest girth, paunch girth, ear length, ear width, tail length, udder circumference, length of teat and body weight were estimated to be 71.43 ± 0.36 , 74.29 ± 0.38 , 78.35 ± 0.53 , 87.14 ± 0.64 , 22.18 ± 0.38 , 10.32 ± 0.14 , 19.22 ± 0.21 , 28.84 ± 0.22 , 11.63 ± 0.34 cm and 44.06 ± 0.44 kg respectively in adult females. The findings of present study coincide with the observation of Ahmad et al. (2009) in Beetal goats. Almost similar observations were also reported (Iqbal et al. 2013) for body length (67.50 cm), height at withers

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

S.No.	Traits	Mean \pm S.E.
1	Body length	71.43 \pm 0.36
2	Height at withers	74.29 \pm 0.38
3	Chest girth	78.35 \pm 0.53
4	Paunch girth	87.14 \pm 0.64
5	Ear length	22.18 \pm 0.38
6	Ear width	10.32 \pm 0.14
7	Tail length	19.22 \pm 0.21
8	Udder circumference	28.84 \pm 0.22
10	Length of teat	11.63 \pm 0.34
11	Body weight (kg)	44.06 \pm 0.44

(70.00 cm) and chest girth (67.5) in Beetal female goat under farm condition. Higher value for body length reported as 79.13 cm (Chopra and Rana, 1977) under farm condition. The result of body weight was in close agreement with those reported by Ahmad et al. (2009) under field condition. However, lower body weight than the present study was reported by Mishra and Khan (1985). Similar observations for udder circumference and length of teat were observed in Beetal goats (Alam et al. 2011) under field condition.

Reproductive performance of Beetal goats

Mean \pm S.E. of body weight at sexual maturity, age at first conception, age at first kidding, kidding interval and gestation length were observed as 26.85 \pm 2.11 kg, 372.29 \pm 4.48, 516.33 \pm 3.19, 348.72 \pm 4.41 and 147.52 \pm 2.64 days, respectively (Table 2). The kidding patterns were found to be 12.22, 64.36, 6.38 and 1.02 percent as single, twin, triplet and quadruplets, respectively under field condition.

Higher body weight at sexual maturity and AFC, were reported in the same breed (Ahmad et al. 2007). However, lower body weight at sexual maturity was observed by Kaushish et al. (1994) under farm condition. Lower values

for age at first conception were reported in Beetal goats (Mehla and Mishra, 1980; Kanaujia et al. 1987). The finding of present study for age at first kidding was close agreement with those reported earlier (Ahmad et al. 2007; Kaushish et al. 1994). However, higher values were reported as 776.00 (Singh and Acharya, 1983) and 735.55 days (Kanaujia et al. 1987) under farm condition. Similar results for average kidding interval were also observed in earlier in Beetal goats (Singh and Acharya, 1983; Kanaujia and Balaine, 1985; Kaushish et al. 1994; Ahmad et al. 2007). The finding of gestation length coincides with observations reported by Kanaujia and Balaine (1985), Kaushish et al. (1994) and Ahmad et al. (2007). The kidding patters in Beetal goats reported were 31.90, 57.4, and 9.60 percent (Kanaujia and Balaine, 1985) and 10.05, 77.76 and 12.19 percent (Ahmad et al. 2007) as single, twin and triplet, respectively. The findings of quadruplets in Beetal goat were 0.35 percent (Gupta and Gill, 1983) and 1.47 percent (Ahmad et al. 2007)

Management practices

Management practices play an important role in production potential of the animals. The Beetal goats are being managed by the farmers on grazing system for 5-6

Table 2. Means \pm S.E. of Reproductive parameters of Beetal goats

S.No.	Traits	Mean \pm S.E.
1	Body weight at sexual maturity (month)	26.85 \pm 2.11
2	Age at first conception (days)	372.29 \pm 4.48
3	Age at first kidding (days)	516.33 \pm 3.19
4	Kidding interval (days)	348.72 \pm 4.41
5	Gestation length (days)	147.52 \pm 2.64
6	Kidding pattern (%)	
	Single	12.22
	Twin	64.36
	Triplet	6.38
	Quadruplets	1.02

hrs in winter and 7-8 hrs in summer seasons on natural grasses, crops residues and shrubs available in the area. Flock size of the breed ranged from 8-24. Pakka goat houses were provided to the animals. During the study it was found that 65% farmers had separate goat house whereas, 35% housed the goat as part of their residence. Kachcha type floor was provided in the shed. Farmers selected their own breeding buck from the flock on the basis of growth performance. Common diseases observed among kids were pneumonia, pneumoenteritis, enterotoxaemia and anaemia.

The results of the present findings revealed that growth performances and reproductive performance of the breed is high. Effort should be made for its 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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