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To study the growth performance of crossbred goat (Black Bengal X Boer) in Bihar

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Abstract
Black Bengal goat is the important breed of eastern region of India and famous for its meat and leather quality but poor in growth & survivality. Therefore, the present study was carried to develop a cross breed having better growth rate, milk yield and survivality. For this ten Black Bengal (*Capra hircus*) goats (average body weight 21 kg) of second kidding were inseminated with semen of Boer goat with maintaining the standard managemental practices at A.P.R.I., Pusa. Thus, It was found that crossbred progeny is superior in comparison to pure breed of Black Bengal in respect of birth weight, weight at 3 months and 6 months of age as well as daily weight gain. So this cross breed (Black Bengal X Boer) may be recommended for farming among the farmers.

Keywords: Black Bengal goat, Boer goat, cross breed, birth weight, weight gain

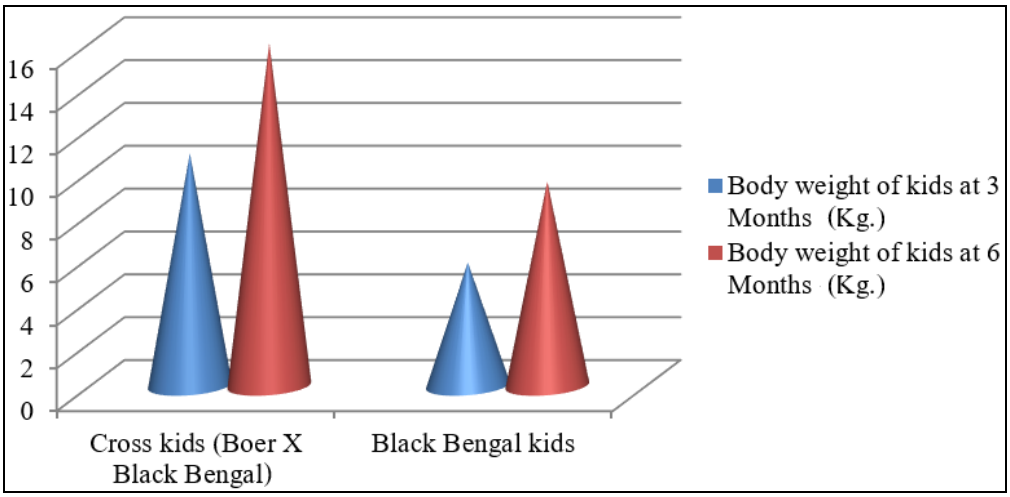
Introduction
There is high demand and consumption of meat in eastern states of India so there is a big goat market and goatery is an important occupation particularly for poor community for their socioeconomic improvement. Black Bengal goat is the important breed of this region and famous for its meat and leather quality so there is ample of scope for goatery development. Particularly, the role of animal husbandry is the backbone of the rural Bihar. The goat population of the Bihar ranks 3rd (12 million) in India (135.17 million) as per 19th livestock census 2012. Most of the goat (90%) in country is Black Bengal (Amin *et al*., 2001) [6]. Consumption of goat meat increasing rapidly due to its social acceptability, this sector has tremendous potential in employment generation, income, sustainability and foreign exchange earning. Black Bengal Goat is globally known for its prolificacy, excellent meat quality, adaptability to hot humid conditions of Bihar (Devendra and Burns, 1983; Hussain *et al*., 1996; 1998; Amine *et al*., 2001) [11]. However, Black Bengal goat is reported to be slower growth rate, low producer of milk (Devendra and Burns, 1983, Husain *et al*., 1996, 1998; Amin *et al*., 2000, 2001; Hanhold, 2001) [11, 6, 13]. Black Bengal is the heritage and pride of eastern and north eastern part of India and a major meat productive animal in West Bengal, Jharkhand, Orissa and Bihar (Zeshmarni *et al*., 2007) [19]. The Black Bengal goat gives birth more commonly thrice in two years (Zeshmarni *et al*., 2007) [19], twining is more frequent (56.32%) and quadruplet is least frequent (2.11%) litter size (Hassan *et al*., 2007) [14]. Boer goat is considered to be one of the desirable goat breed for meat production worldwide with excellent body confirmation and prolific breeder. The average daily gains for singly, twin and triplets birth in Boer were respectively reported as 240, 238 and 218 g/day by Barry and Godke (1997). The desirable genetic traits for meat production of Boer is birth weight, growth weight, weaning weight, breeding, weight, mature weight, kidding rate, carcass quality as reported by Haas, (1978) [12], Brown and Machen (1997) [8] and Cameron *et al*., (2001) [10]. Therefore, the present study carry out aim to develop a cross breed having better growth rate, milk yield and survivality so that socioeconomic of the farmers could be improved. In this prospect Vijay K. Bharti and co-workers (2018) [18] had also worked to develop region specific hybrid goat.

Material & Methods

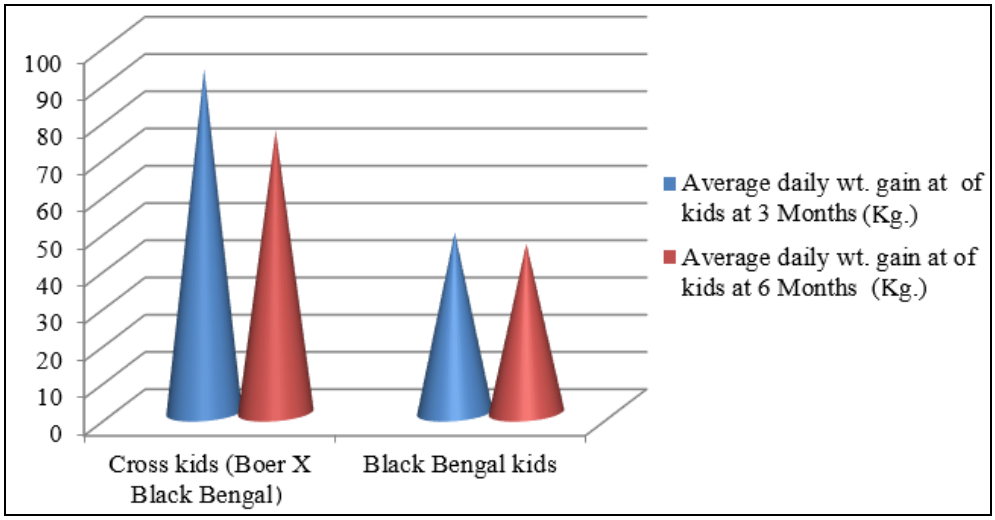
The present study at APRI, RPCAU, Pusa, Samastipur (Bihar) conducted on 10 crossbred progeny (Black Bengal X Boer) bred by Black Bengal (*Capra hircus*) having average body wt. 21kg. of second kidding using frozen semen of Boer goat which was brought from Bangalore (institute), under semi intensive condition throughout the study. Others health care *viz.* deworming, vaccination etc. were maintained. The body weight (kg) of crossbred kids and Black Bengal kids were recorded at the time of kidding, 3 months & 6 months of age. Average daily wt. gain (g/day) of cross kids and black Bengal kids were also estimated.

Result & Discussion

The mean birth weights (Kg) of Black Bengal and crossbred kids were estimated as 1.42±0.17and 2.36±0.35 respectively whereas it was 5.75 ±0.29 and 9.54 ±0.35 at age of 3 months and 6 months respectively for Black Bengal which is close agreement with as reported by Jalil (2014) [17] as 5.65 and 9.63 kg respectively while it was 10.85 ±0.40 and 16.00 ±0.40 for crossbred goat. The mean daily body weight gain (g/day) was estimated at 3 months and 6 months of age and found to be 48.18 ±3.45 and 45.39 ±1.89 respectively for Black Bengal while it was estimated comparatively more as 92.27±3.17 and 75.79±3.21 respectively for crossbred goat. The estimate of birth wt. shows that crossbred goat has more birth wt. as compared to pure breed (Black Bengal) which may be due to genetic effect. These trends have also been marked at 3 months and 6 months of age. The average daily wt. gain also showed increasing trend at certain age life which indicate that the body weight at any stage (growing stage) of life is depend on birth wt. of the individual. Thus, crossbred progeny is superior to pure breed (Black Bengal) in respect of birth wt., wt. at 3 months and 6 month of age as well as daily wt. gain, so it may be recommended for farming but further need research on large data set.



Graph 1: Showing the comparative Body wt. of kids in both breeds at 3 months and 6 months of age.



Graph 2: Showing the comparative Average daily wt. gain in both breeds at 3 months and 6 months of age.

Significance

The crossbred progeny (Black Bengal x Boer) is superior to pure breed (Black Bengal) in respect of birth wt., body wt. at 3 months and 6 month of age as well as daily wt. gain, so it may be recommended for farming.

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